

TOWN OF ALLEGANY PLANNING BOARD
STATEMENT OF FINDINGS AND DECISION
ALLEGANY WIND POWER PROJECT
ALLEGANY WIND, LLC

1.0 INTRODUCTION

The Town of Allegany, Cattaraugus County, New York (herein the “Town”) has received an application from Allegany Wind, LLC, on behalf of the Allegany Wind Power Project (herein collectively called “Allegany Wind”) respectively, for the necessary permits and approvals to construct and operate a wind energy generating facility and related collection and road access infrastructure in the Town (the “Project”), as described herein. This Statement of Findings is issued by the Planning Board of the Town (herein the “Planning Board”), pursuant to their responsibility as a Lead Agency under the State Environmental Quality Review Act (“SEQRA”) and its implementing regulations at 6 N.Y.C.R.R. § 617.11 and contains the Planning Board’s Findings under SEQRA. This document also contains the Findings and Determinations required by the Town of Allegany Zoning Ordinance II for Special Use Permit and Site Plan Review and Approval, pursuant to the Planning Board’s discretionary approvals that are applicable to the Allegany Wind application. Finally, it contains the Planning Board’s recommendation to the Town Board regarding Allegany Wind’s rezoning application pursuant to Zoning Ordinance II.

1.1 The SEQRA Process

This document represents the conclusion of the environmental review of the proposed Allegany Wind Power Project. The Planning Board has acted as Lead Agency in

evaluating the potential environmental, economic, and social impacts of the Project. The Lead Agency is the governmental body “principally responsible for undertaking, funding or approving an action, and therefore responsible for determining whether an environmental impact statement is required in connection with the action, and for the preparation and filing of the statement if one is required.”¹ The Planning Board declared the Project to be a Type I action and acted as Lead Agency. Under the SEQRA regulations, this Findings Statement must:

- (1) consider the relevant environmental impacts, facts and conclusions disclosed in the final EIS;
- (2) weigh and balance relevant environmental impacts with social, economic and other considerations;
- (3) provide a rational basis for the Planning Board’s decision;
- (4) certify that the requirements of SEQRA have been met;
- (5) certify that consistent with social, economic and other essential considerations from among the reasonable alternatives available, the action is one that avoids or minimizes adverse environmental impacts to the maximum extent practicable, and that adverse environmental impacts will be avoided or minimized to the maximum extent practicable by incorporating as conditions to the decision those mitigative measures that were identified as practicable.²

2.0 PROJECT DESCRIPTION

The Project consists of the installation of 29 wind turbines, each with a maximum (or nameplate) capacity of 2.5 megawatts (MW), resulting in a maximum anticipated generating

¹ 6 N.Y.C.R.R. § 617.2(u).

² 6 N.Y.C.R.R. § 617.11(d).

capacity of approximately 72.5 MW. In addition to the wind turbines, the Project involves construction of associated components including one permanent meteorological tower, a system of gravel access roads, buried electrical interconnect, an operation and maintenance (O&M) building, and a substation. To deliver power to the New York State power grid, Allegany Wind will construct a buried 115 kilovolt (kV) transmission line that will tie into an existing 115 kV transmission line operated by National Grid, which is located near Riverside Drive. The interconnection facility (and associated access road) and a small portion of the 115 kV line are located in the Town of Olean.

2.1 Individual Turbine Sites

The wind turbine analyzed in the SEQRA record is the Nordex N100, each with a rated capacity of 2.5 MW. The nacelle sits atop the tower, and the rotor hub is mounted on a drive shaft that is connected to the gearbox and generator contained within the nacelle. Each turbine will include a three-bladed upwind rotor, with a diameter of 100 meters (328 feet), mounted on a 100-meter (328-foot) tubular steel tower. The total height of this turbine (*i.e.*, height at the highest blade tip position) will be approximately 492 feet.

Foundation construction occurs in several stages including excavation, outer form setting, rebar and bolt cage assembly, casting and finishing of the concrete, removal of the forms, backfilling and compacting, and site restoration. Excavation and foundation construction will be conducted in a manner that will minimize the size and duration of excavated areas that are required to install foundations. Initial activity at each tower site will involve clearing and leveling within an approximately 200-foot radius around each tower (average area of disturbance of up to 2.9 acres). Work at each site shall require the installation of erosion and sediment controls measures in accordance with the Project-specific New York State Department of

Environmental Conservation (NYSDEC) approved Stormwater Pollution Prevention Plan (SWPPP). Following topsoil removal, backhoes will be used to excavate a foundation hole. If bedrock is encountered it is anticipated to be ripable, and will be excavated with a backhoe. If the bedrock is not ripable, it will be excavated by pneumatic jacking, fracturing, or blasting. If blasting is required, a final blasting plan will be prepared based on the preliminary blasting plan contained in the Allegany Wind DEIS and blasting will be conducted in compliance with the final blasting plan. If necessary, dewatering of foundation holes will involve pumping the water to a discharge point, which will include measures/devices to slow water velocities and trap any suspended sediment. Dewatering activities will not result in the direct discharge of water into any streams or wetlands.

The foundation is anticipated to be a spread type footing that is 10 feet deep and approximately 50 to 60 feet in diameter. The top of the foundation is typically an 18-foot diameter pedestal that extends 6 to 8 inches above grade. The base of each tower will be surrounded by a 100 foot by 60 foot permanent gravel crane pad. After installation is completed, all disturbed areas at the turbine site will be restored, with the exception of the gravel crane pad around the turbine, pad mount transformer, and any required electrical equipment, which will remain in place for future maintenance. With the exception of the crane pads and permanent access roads, excess gravel not used in the permanent location will be removed from the site. All foundations and underground infrastructure will be in place for the life of the Project.

2.2 Delivery and Storage Areas (On-Site and Off-site)

One temporary staging area, which will accommodate construction trailers, storage containers, some project components, and parking for construction workers will be located on Chipmonk Road. The staging area is anticipated to be up to five acres in size. No

fencing or lighting of the staging area is proposed. Geotextile fabric and approximately 8 inches of gravel will be installed to create a level working yard. Electric and communication lines will be brought in from existing distribution poles to allow connection with construction trailers. At the end of construction, either the utilities, gravel, and geotextile fabric will be removed and the site restored to its pre-construction condition, or the site will be used for construction of an Operation & Maintenance (O&M) facility as discussed below. Removed gravel may be reused elsewhere at the Project site, returned to the quarry, or properly disposed of. Disposal of all materials will be in accordance with all local, state, and federal regulations.

During the Project construction phase, the large turbine components (*i.e.*, tower sections, nacelle, and rotor blades) will be delivered directly to the specific turbine site by truck.³ Each of the individual sites will serve as the staging area for the erection of that specific turbine. While temporary parking will be required at each turbine location as the construction progresses, the majority of construction crews will park off the public roads on the Project's previously disturbed and designated areas such as access roads and turbine sites. Materials such as cable reels will be staged at the appropriate locations within the project area, and then transported to the designated sites as they are needed for construction.

Once Project construction is complete, a new Operations and Maintenance (O&M) building will be constructed to house equipment and materials necessary to service the Project. The O&M building will include an adjacent storage yard. The O&M facility is anticipated to be up to 6,000 square feet in size and will be located within the footprint of the temporary staging area, or the Project Sponsor may refurbish an existing structure in the vicinity

of the Project for use as the O&M facility. If the staging area site is not used for the O&M building, at the end of construction, utilities, gravel, and geotextile fabric will be removed and the site restored to its preconstruction condition in accordance with NYSDAM guidelines. Removed gravel may be reused elsewhere at the Project site, returned to the quarry, or properly disposed of. Disposal of all materials will be in accordance with all local, state, and federal regulations

2.3 Access Roads

Access roads, both temporary roads needed for construction and permanent routes for maintenance, present an opportunity for adverse impacts if not properly sited and installed. They also present a potential cost to the communities if use of public roads by heavy vehicles significantly diminishes the quality of the roadways.

The Project is utilizing an extensively developed system of existing timbering and oil and gas access roads in order to reduce construction costs and to minimize impacts to both forested and wetland/stream areas. Where an existing access road is unavailable or unsuitable, new gravel-surfaced access roads will be constructed. The total length of access road required to service all proposed wind turbine locations is approximately 8.2 miles. Of this distance, approximately 1.8 miles are currently well-maintained roads that will require only minor improvement for use during construction. The balance of the distance, or 6.4 miles, will require the construction of new access roads, some of which will follow existing logging trails to reduce clearing impacts.

³ The large delivery trucks, cranes, and heavy construction equipment present issues related to traffic that are specifically discussed in the Traffic Impacts section of this Statement.

Appropriate sediment and erosion control measures (e.g., silt fence) will be installed and maintained according to the Project-specific New York State Department of Environmental Conservation (NYSDEC) approved Stormwater Pollution Prevention Plan (SWPPP). Road construction will involve topsoil stripping and grubbing of stumps, as necessary. Following removal of topsoil, subsoil will be graded, compacted, and surfaced with approximately 8 to 12 inches of gravel or crushed stone. A geotextile fabric or grid will be installed beneath the road surface, when necessary, to provide additional road base support. During construction, access road installation and use could result in temporary disturbance of a maximum width of 40 feet (with an area as wide as 75 feet cleared of vegetation), with temporary road corner radii of 200 feet.

Once construction is complete, temporarily disturbed areas will be restored and returned to their pre-construction contours. The typical access road will be 16 feet in width, with occasional wider pull-offs to accommodate passing vehicles. Maximum permanent road width will be approximately 20 feet. As necessary, culverts may be used to assure that the roads do not impede cross drainage. The design and installation of culverts in public rights-of-way shall be reviewed and approved by the Town. Although, as a result of infield delineations, impacts to state or federally regulated streams and wetlands are not anticipated, any ditches or other water conveyance structures shall be again assessed prior to any disturbance to confirm that they are not part of a stream or wetland subject to U.S. Army Corps of Engineers (Corps) or NYSDEC jurisdiction.

2.4 Electrical Gathering Lines

The electrical lines required for Allegany Wind consist of 34.5 kV electrical gathering lines and 115 kV transmission line, both of which will be buried.

The 34.5 kV buried gathering lines connect the turbines. In order to connect the east and west arrays of turbines, a gathering line will be installed on private land, roughly between Turbines 5W and 6E, and will cross Chipmonk Road. Directional boring shall be used for the actual crossing of Chipmonk Road to reduce and eliminate any roadway impacts from the installation. Otherwise, whenever possible, direct burial methods through use of a cable plow, rock saw, and/or trencher will be used during the installation of underground 34.5 kV electrical gathering interconnect lines. Direct burial will involve the installation of bundled cable (electrical and fiber optic bundles) directly into a “rip” in the ground created by the plow or saw blade. The rip disturbs an area approximately 24 inches wide with bundled cable installed to a minimum depth of 4 feet.⁴ All areas will be returned to pre-construction grades. Installation of buried electrical lines would typically require a width of up to 40 feet of vegetation clearing. However, since all proposed buried electrical gathering lines are collinear with either public roads or proposed access roads, no additional vegetation clearing is anticipated. In areas where buried electrical lines are collinear with proposed access roads, no additional soil disturbance, beyond that anticipated for road construction, is anticipated.

To deliver power to the New York State power grid, Allegany Wind proposes to construct a buried 115 kilovolt (kV) transmission line. The Transmission Route runs east from the generating facility to an interconnection point south of the Allegany River and west of New York State Route 16, in the Town of Olean and totals 6.4 miles in length. The line avoids environmental impacts to the maximum extent practicable by using existing logging/forest roads.

⁴ The Board will require a minimum depth of 4 feet, notwithstanding any Town requirement to the contrary.

A substation will be located at the beginning of the 115 kV line, between turbines 8E and 9E. The substation will transform the voltage of the buried gathering line system from 34.5 kV to 115 kV. The substation will include 34.5 and 115 kV busses, a transformer, circuit breakers, towers, a control building, and related structures, and will be enclosed by chain link fencing.

2.5 Point of Interconnection Substation

The point of interconnection station (“POI station”) will be located immediately adjacent to the existing 115 kV transmission line. The fence line will be approximately 250 by 250 feet in size and will encompass electrical switches and related equipment necessary to tie into one of the two existing circuits that comprise the National Grid 115 kV line. The majority of the POI station will be owned and operated by National Grid. However, it is anticipated that the POI station will also house the command center of the Project’s supervisory control and data acquisition (SCADA) system, which allows an operator to control critical functions and the overall performance of each turbine. The Project Sponsor will operate this portion of the POI station.

The POI station construction will begin with clearing of the site and stockpiling topsoil for later use in site restoration. The POI station construction will be included in the New York State Department of Environmental Conservation (NYSDEC) approved Stormwater Pollution Prevention Plan (SWPPP) for the Project and construction at the site will incorporate appropriate erosion and sediment control measures as identified in the DEIS/FEIS. The site will be graded, and a laydown area for construction trailers, equipment, materials, and parking will be prepared. Concrete foundations for major equipment and structural supports will be poured, followed by the installation of various conduits, cable trenches, and grounding grid conductors.

Above-ground construction will involve the installation of structural steel, bus conductors and insulators, switches, circuit breakers, transformers, control buildings, etc. The final steps involve laying down crushed stone across the station, erecting the chain link fence, connecting the high voltage links, and testing the control systems.

3.0 ANALYSIS OF POTENTIAL IMPACTS AND MITIGATION MEASURES

3.1 Community Character

The Project is located on approximately 9,119 acres of privately owned land (“Project Site”) within the Towns of Allegany and Olean, Cattaraugus County, New York. The Project Site has a rural and low-density character, with forestland and natural gas extraction as the dominant land uses. Natural gas wells and the associated network of access roads are located throughout most of the Project site where turbines will be located. The transmission line route primarily traverses forestland and rural residential neighborhoods, with some land in agricultural production located along Chipmonk Road, Four Mile Road, and Two Mile Road. The Project will be located entirely on private land in areas dominated by managed/disturbed forestland and oil/gas extraction. Only very minor changes in land use within the Project Site are anticipated as a result of Project implementation. Other than occasional maintenance and repair activities, the Project should not interfere with on-going land use (*e.g.*, oil/gas extraction, timber management) within the Project site area. The Project is consistent with the land uses within the Project area.

Immediately to the north of the turbine array is a well established rural residential neighborhood along Chipmonk Road, which also contains agricultural land. Other rural residential neighborhoods that abut or are near the turbine site include the hamlets of Harrisburg and Knapp Creek and rural residential development along Nichols Run Road and NYS Route 16 to the south. To the east and northeast rural residential development is located along Four Mile

Road, Hawthorne Lane, Knapp Creek Road, and West Branch Road, among other roads. The Town of Carrollton abuts the project site to the west. The closest residence is located approximately 2,500 feet from the turbines. Potential impacts on nearby residential neighborhoods include visual impacts, noise, and shadow flicker. These potential impacts are discussed in subsequent sections of this Statement.

The Project will introduce new, highly visible elements (*i.e.*, wind turbines) into the existing landscape, which could be considered a change in community character for the primarily rural residential areas that surround the project site. The visibility and visual impact of the wind turbines will be highly variable based upon distance, number of turbines in the view, weather conditions, sun angle, the extent of visual screening, scenic quality, viewer sensitivity and/or existing land uses. However, the rural character of the area may be impacted in those locations where a significant number of the proposed turbines can be seen, or where the turbines can be viewed from near mid-ground distances (*e.g.*, 0.5 to 1.0 mile). This may occur at residences along roads that are adjacent to the Project, such as Chipmonk Road, Four Mile Road, and Nichols Run Road.

The Town of Allegany has adopted Planning and Development Policies, originally adopted in 1987 and updated in 1997. The Policies discuss the Town in terms of four geographical areas: West, East, North, and South. The Project Site is located within the South area of the Town, which is defined as extending southward from State Route 417 along the central Four Mile Road corridor south to Knapp's Creek, State Route 16, and the Pennsylvania Line. The development goal for the South area is to “promote continuing or expanded farm use and industrial uses wherever possible, work to support the remaining oil/gas production and timbering industries, and promote a balanced mixture of single family residences.”

The Town of Allegany Zoning Ordinance II became effective on May 5, 2000 and has subsequently been amended several times. The entire turbine array is located within the A-F Agricultural Forestry Zoning District. The majority of the transmission line route is located in the A-F District, with a small portion located in the Floodplain Overlay District. Zoning Amendments adopted August 28, 2007 added commercial and non-commercial wind energy conversion systems (WECS) as a Special Permitted Use within the A-F Zoning District.

On February 24, 2011, the Allegany Town Board amended section 5.25 of the Zoning Ordinance to include the requirement that all Wind Energy Projects must be included in a Wind Energy Overlay Zone, which can only be approved by the Town Board. However, Special Use Permit and Site Plan approval by the Planning Board must be obtained prior to the Town Board decision. Therefore, the Applicant is currently pursuing the approval.

3.2 Agricultural Land Uses

Cattaraugus County has a total of eight designated Agricultural Districts established pursuant to the New York Agriculture and Markets Law (N.Y. AGRIC. & MKTS. LAW). A portion of the access roads (0.8 mile) and associated buried interconnect (0.8 mile), as well as a portion of the buried transmission line (0.4 mile), cross into Agricultural District 7. Impacts from the portion of the transmission route that crosses into the Agricultural District have been minimized by burying the transmission line underground in accordance with New York State Department of Agriculture and Markets (NYSDAM) guidelines for burial of lines, which require a minimum depth of 48 inches for buried electrical lines. In addition, two wind turbines and the substation are within Agricultural District 7. Impacts associated with these components are 18.5 acres of temporary disturbance and 4 acres of permanent disturbance to Agricultural District 7. As identified by NYSDAM, the buried 115kV transmission line and the staging area

will be located on land in active agricultural use outside of Agricultural District 7. Even though this land is not in Agricultural District 7, the same construction techniques that are recommended for Agricultural Districts will be followed for all active agricultural land, regardless of whether the agricultural land is in a State Agricultural District. The 2.5 acres of the staging area may be utilized for the construction of the permanent O&M facility, which would result in a minor loss of active agricultural land.

Although in agricultural fields a buried transmission line is typically installed using a trencher, topsoil will be protected during installation of the buried transmission line no matter what method is used by following NYSDAM Agricultural Protection Guidelines. Topsoil will be stripped and segregated from subsoil during all trenching in agricultural fields, and the buried transmission line will be installed to a minimum depth of 4 feet in such fields. Restoration of agricultural soils disturbed during trenching will follow NYSDAM Agricultural Protection Guidelines. These Guidelines require drainage tile repair, soil decompaction, rock picking from subsoil and topsoil, and re-spreading and seeding of topsoil to reestablish pre-construction contours within agricultural fields. In accordance with NYSDAM Guidelines, site restoration activities will only occur when soils are in a friable condition. Restoration will be scheduled and undertaken only at times of the year when soils are dry enough to allow for effective decompaction, replacement, and spreading of both subsoil and topsoil. The Environmental Monitor shall either be qualified to act as the Agricultural Monitor or be responsible for engaging qualified personnel to fulfill the needs. The Environmental Monitor will ensure that all agricultural restoration activities are carried out under proper soil conditions. The Environmental Monitor will notify the NYSDAM of Project status and closely coordinate with NYSDAM staff on a regular basis. NYSDAM staff will be invited to participate in pre-

construction meetings and site walk-overs and join the Environmental Monitor in observing construction activity throughout Project construction and site restoration.

The Applicant will coordinate with landowners to locate drain tile in advance of construction activities. When/if a subsurface drainage line is cut or damaged during installation of the buried transmission line, it will be repaired in accordance with section drawings included in the NYSDAM's standards for Pipeline Right-of-Way Construction Projects and guidance provided by the County Soil and Water Conservation District Office. Conservation District staff and NYSDAM staff will be notified when subsurface drain lines are first encountered and offered the opportunity to witness repair activities. Full replacement or installation of new subsurface drainage lines is not anticipated to be necessary. However, if required, installation of new lines will be in accordance with the NRCS Conservation Practice Standard for "Subsurface Drain" (606).

Due to the likely presence of fragipan restricted soil types in the agricultural fields scheduled to be crossed by the buried transmission line, appropriate mitigation measures (*i.e.*, installation of trench breakers) will be required during construction. The Applicant will also require trench breakers along slopes into agricultural fields. Construction specifications will indicate that the trench breakers shall be installed in accordance with the NYSDAM's standards for Pipeline Right-of-Way Construction Projects, and the location of installed trench breakers, along with minimum depth of trench breakers, will be recorded.

Two years of post-construction monitoring, in accordance with NYSDAM Agricultural Protection Guidelines, will also be required. This monitoring effort will identify any drainage repairs that may be required after the project is complete. How these repairs are made will be determined through discussions with the affected landowners and NYSDAM staff.

The Planning Board finds that the proposed Project is designed to avoid impacts to agricultural lands to the maximum extent practicable and therefore will not have any significant adverse impacts to agricultural land.

3.3 Construction Impacts on Land

Construction of the project has the potential for erosion and subsequent sedimentation impacts. The proposed transmission line route traverses steep slopes in several locations. Short-term increases in erosion can occur as a result of the removal of vegetation during site clearing and grading activities, and the subsequent exposure of topsoil to precipitation and high winds. Also, in areas where vegetation is slow to become re-established, increased erosion can occur.

To mitigate these potential impacts, the Preliminary Stormwater Pollution Prevention Plan (SWPPP) (Provided as Appendix C in the DEIS) details a number of control and mitigation measures that will be implemented at the site including, but not limited to, the following:

- Road ditches and other locations where Project-related runoff is concentrated will be armored with rip-rap or check dams to dissipate the energy of flowing water and to hold the soils in place.
- Prior to commencing construction activities, erosion control devices will be installed between the work areas and downslope areas, to reduce the risk of soil erosion and siltation. Erosion control devices will be monitored continuously throughout construction and restoration for function and effectiveness.

- During construction activities, hay bales, silt fence, or other appropriate erosion control measures will be placed as needed around disturbed areas and stockpiled soils.
- Following construction, all temporarily disturbed areas will be stabilized and restored in accordance with approved plans.
- During all aspects of construction, any stockpiled soil and/or spoil material will only be temporary (*i.e.*, spread and graded to match original contours following construction activities). Proper methods for segregating stockpiled and spoil material will be implemented, and excavated soil will be reused to the maximum extent possible on the site that it was excavated from, as a means to limit opportunities for proliferation of non-native flora and other invasive species.

The Preliminary SWPPP was prepared in accordance with the NYSDEC Stormwater Design Manual and Standards and Specifications for Erosion and Sediment Control. Prior to construction, a final project specific SWPPP shall be prepared and submitted as required to obtain the State Pollution Discharge Elimination Systems (SPDES) General Permit for Stormwater Discharges from Construction Activities. The SWPPP also includes inspection requirements to ensure that construction is conducted in accordance with the above standards.

Before the issuance of any building permits for any component of the Project, the project sponsor will prepare a Final SWPPP, based on the Draft SWPPP included in this record, which will incorporate a dust control plan and a sediment and erosion control plan. As required prior to start of construction, a Notice of Intent shall be filed with the NYSDEC and the Applicant shall implement the provisions of the SWPPP under the supervision of the

Environmental Monitor to minimize off-site visual impacts associated with construction activities.

The Planning Board finds that because appropriate control measures will be in place, construction activity at the Project Site should have minimal erosion and sedimentation impacts and that this potential impact has been mitigated to the maximum extent practicable.

3.4 Property Values

In order to assess the potential for property values to depreciate as a result of a proposed wind power project, Renewable Energy Policy Project (REPP) conducted a quantitative study in 2003 titled, *Effect of Wind Development on Local Property Values*. REPP assembled a database of real estate transactions within five miles of every wind power project in the United States (10 MW or greater) that became operational between 1998 and 2001 (a total of 10 projects, including the Madison and Fenner projects in Madison County, New York). The results of the analysis showed no negative effect on property value from existing wind farms. The study found that property value actually increased faster within the wind power project viewshed in eight of the 10 projects. In addition, the analysis revealed that property values increased faster after the wind farms became operational and in the project viewshed than in the comparable community, in nine of the 10 projects.

The REPP study has been criticized because it assumes that all properties within the study area have a view of the respective wind farm, does not account for property distance to the wind farm, uses a questionable statistical analysis, and includes inappropriate transactions (*e.g.*, estate sales, sales between family members, sales due to divorce). In addition, at least one property value study (Haughton et al., 2004) has predicted a negative effect from the proposed

development of a wind power project. To present a clearer understanding of the actual effects of existing wind farms on property values, a Master of Science thesis was prepared by Ben Hoen (2006). The purpose of this study was to analyze whether the transaction value of homes within 5 miles of the existing Fenner Wind Farm was significantly affected by views of the wind farm. Computer modeling analysis of the 280 home sales within 5 miles of the Fenner Wind Farm found “an absence of measurable effects of wind farm visibility on property transaction values. This result holds even when concentrating on homes within a mile of the facility and those that sold immediately following the announcement and construction of the wind farm in 2001.”⁵ These results show no impact on property values, either positive or negative.

A more recent study sponsored by the United States Government focused specifically on impacts of wind farm projects on residential property values. The report *The Impact of Wind Power Projects on Residential Property Values in the United States: A Multi-Site Hedonic Analysis*, released in December 2009, explains the study and the conclusions drawn from the study (Hoen, 2009). A broader approach to assessing potential impacts on property values of residences near wind farm projects was undertaken for this study and consequently it is the “most comprehensive and data-rich analysis to date in the U.S. or abroad on the impacts of wind projects on nearby property values.” (Hoen, 2009). The study found no persuasive evidence that either the view of the wind facilities or the distance of the home to the facilities has any significant effect on home sales prices. The study recognized the possibility that the value of an individual home (or small numbers of homes) has been or could be negatively impacted by a

⁵ Hoen, B. 2006. Impacts of Windmill Visibility on Property Values in Madison County, New York. Submitted to the Faculty of the Bard Center for Environmental Policy. April 30, 2006.

nearby wind farm facility. However, even if such occurrences do exist “they are either too small or too infrequent to result in any widespread, statistically observable impact.” (Hoen, 2009).

Based on the expert opinion in the record, the Planning Board finds that the Project will not have an adverse impact on property values in the community.

3.5 Cultural and Historical Resources and Impacts

A comprehensive investigation of cultural resources, contained in Appendix M of the DEIS, was conducted in order to identify cultural resources that potentially could be affected by the Allegany Wind Power Project. The focus of the investigation was to identify archeological resources, historic resources, historic structures, and structures that might qualify as historic. Additional historic/cultural surveys and evaluations were undertaken at the request of the Office of Parks, Recreation, and Historic Preservation (OPRHP), and these supplementary reports are contained in the FEIS.

3.5.1 Archeological Resources

The potential to disturb archeological resources was investigated for each of the Project components that might result in physical disturbance in native soils. These included the turbines sites, access roads, electrical corridors, substation location, and staging area. This study was conducted in consultation with OPRHP and pursuant to OPRHP guidelines. This study included a literature evaluation Phase 1A report and a comprehensive in-field investigation Phase 1B report (provided in Appendix M of the DEIS). These reports, which were reviewed by OPRHP, concluded that the Project will not result in temporary or permanent impacts to archeological resources identified in the reports. However, OPRHP expressed concern regarding identified rock outcroppings and requested that a description of construction activities in

proximity to the outcroppings be submitted to the OPRHP and the Seneca Nation of Indians. The letter also requested that the Project's final design plans include limits of construction areas in relation to the identified archaeological site boundaries and the rock outcroppings and that these plans also be submitted to the OPRHP and the Seneca Nation of Indians for review. The Planning Board concurs with OPRHP's requests regarding rock outcroppings and archaeological site boundaries. The Project must conform to all requirements of OPRHP, submit all requested documents, and receive concurrence from OPRHP on the construction methods and final design plans. The Town shall also review final design during building permit application and verify that the Project avoids impacts to rock outcroppings.

Based on the archaeological Phase 1A and Phase 1B reports, the Planning Board finds that the Project will not have significant adverse impacts on archeological resources.

3.5.2 Architectural Resources

A historic architectural resources survey was conducted to identify and document historically significant structures that may be located within 5 miles of the turbines. Based on the current historic architectural survey, there are 33 previously recorded historic and architectural resources within the Study Area that OPRHP has determined satisfy NRHP/SRHP eligibility criteria (see DEIS Appendix M Historical Architectural Survey, Table 2). In addition, there are 50 previously recorded and unevaluated properties within the five-mile Study Area. Of these 50, JMA (Cultural Resources consultant) determined that nine of the properties are in the 5-mile topographic viewshed and in the opinion of JMA satisfy NRHP/SRHP eligibility criteria either as individual resources or as contributing resources to historic districts.

Subsequent to the DEIS, OPRHP requested the evaluation of additional historic/cultural resources with respect to potential visual impacts. Rock City Park and Flatiron Rock are natural sites within the 5-mile radius study area that are tourist attractions and may be National Register eligible. The remaining resources are located outside of the 5-mile radius study area within Allegany State Park.

Permanent, physical impacts to historic structures will not occur because the Project will not result in any structures being demolished or physically altered. However, topographic viewshed mapping indicates that the Project may be visible throughout significant portions of the five-mile Study Area, because of the height of the wind turbines and their placement along ridges. Of the 53 historic resources within the topographic viewshed, 24 will not be affected by the Project visually. Potential views of the Project may occur at the other 29 historic or architecturally significant properties, as well as Rock City Park and Flatiron Rock. In addition, based on the worst-case viewshed mapping, the proposed Project would be potentially visible from approximately 19% of Allegany State Park. These areas are restricted to the east-facing slopes along the eastern boundary of the park and on ridgetops located throughout the park. However, based on field work conducted by EDR (the Project's visual resources consultant), existing forest vegetation screens views toward the Project from the areas within the park where topographic viewshed indicates views of the Project are possible. The view from the top of the fire tower on the Ridge Run Trail is the only identified feature or location that allows partial views of the Project from within the park. Visibility and visual intrusion are dependent on a number of factors including distance, topography, vegetation, and the types and density of existing modern features (such as buildings/residences, overhead electrical transmission lines, cellular towers, and silos).

3.5.3 Mitigation

The survey technique used to identify structures within a 5-mile radius of the Project may tend to exaggerate the number of properties and the degree that they may be impacted because it ignores the vegetative screening afforded by mature trees, shrubs and plantings, as well as localized topography which may reduce the actual visual impact of the Project. However, impacts to the viewshed are unavoidable, and there is little opportunity for mitigating the visual impact of the wind turbines.

To offset unavoidable visual impacts to historic structures/cultural resources, the Town of Allegany had identified several possible mitigation projects, which are discussed at length in the FEIS. The proposed measures will be beneficial in restoring and maintaining the historical integrity of existing cultural resources and are appropriate offset mitigation measures, which will minimize the unavoidable visual impacts of the Project on the historic structures to the maximum extent practicable. The Town Board will select one or more of the possible projects, which will be funding by the Project Sponsor.

The Planning Board finds that the offset project(s) to be selected by the Town Board from the options discussed in the FEIS will mitigate the unavoidable adverse visual impacts to the maximum extent practicable and, therefore, the Project will not have significant adverse impacts on the public's use of historic and cultural resources.

3.6 Communication Facilities

Wind turbines have the potential to cause interferences such as signal obstruction, attenuation, or other signal alteration to some types of communication systems. The EIS evaluated potential interferences with microwave paths, government transmitters, off-air

television, AM and FM broadcast, mobile phone services, land mobile radio coverage, and FAA radar.

The potential effects of the Project to existing non-federal government microwave systems was evaluated in the DEIS (*see* Comsearch reports in Appendix R of the DEIS), which identified four microwave paths that intersect the Project Site. The analysis assumed a worst-case Fresnel Zone (*i.e.*, maximum width along the entire microwave path) while conducting the microwave path analysis. As currently configured, all of the Project's turbines are located outside the existing microwave paths. Therefore, the Project will not result in impacts to the existing microwave path.

Some existing transmitters operated by departments of the United States Government are not subject to FCC licensing and, therefore, are not available in the public records. Acting through the Department of Commerce National Telecommunications and Information Administration (NTIA), Comsearch advised federal government agencies of Allegany Wind's planned wind turbine development area. This action allows government facilities to respond with any concerns over interference with their non-licensed installations. The NTIA response indicated no interference is anticipated.

Comsearch (2010d. *Land Mobile Report, Allegany Wind Power Project*. Ashburn, VA. Prepared for EDR. January 8, 2010) assessed the coverage of off-air television stations within a 100-mile radius of the Project Site and the potential for degraded television reception as a result of the Project. The results of the study indicate that there are two hundred seventy-one (271) off-air television stations within 100 miles of the Project Site (*see* DEIS Appendix R). The stations most likely to produce off-air coverage to the Project Site are those

within a distance of 40 miles or less. Because off-air coverage to this area includes just one (1) full service station and sixteen (16) low power or translator stations, it appears that the off-air television stations are not the primary mode of delivering television service to the local communities. According to Comsearch (2010b), most residents in the area likely view television programming through the use of cable or a satellite dish, given the limited service and coverage of the stations identified. Although the potential for wind turbines to disturb some of the available channels at some reception points in the area is a possibility, Comsearch indicates that the Project is not likely to result in significant impacts to television service in the area due to the large distances between turbines and residences. Specific impacts to TV reception would most likely include noise generation at low VHF channels within 0.5 mile of turbines, reduced picture quality (*e.g.*, ghosting or shimmering), and signal interruption (NWCC, 2005). If reception problems should occur and be reported through the Complaint Resolution Procedure, the Applicant will mitigate the issue or provide a substitute service (cable or satellite).

The radio reception analysis identified all AM and FM broadcast stations within a 20-mile radius of the proposed Project, as measured from the approximate center of the Project Site. Comsearch (2010c) identified six (6) AM stations and twenty-five (25) FM stations within this search area (see DEIS Appendix R). According to Comsearch (2010c), potential interference with AM broadcast coverage would only occur if turbines were located within 2 miles of AM broadcast stations with directive antennas, or within 0.5 mile of broadcast stations with non-directive antennas. Since all AM broadcast stations are located between 3.5 and 12.1 miles from the Project, no degradation of AM broadcast signals is anticipated. Generally, the FM broadcast audio signal is not noticeably affected by wind turbines because the signal modulation is frequency modulated (FM) and the wind turbines have the affect of varying the

amplitude of the signal, which will produce distortion to an amplitude modulated (AM) signal but not to an FM signal. Also, changes to audio coverage or distortion are not readily apparent to a listener when factored together with other causes of degradation such as being out of range of the station or signal fades. Since the FM Station antennas are located greater than 3.3 miles from the Project area, impacts to the coverage of these stations will be essentially non-existent.

Cellular and personal communication system (PCS) services are available within the Project Site. Comsearch (2008) determined that there are two cellular telephone operators and six PCS telephone operators in Cattaraugus County (see DEIS Appendix R). Telephone mobile communications in the cellular and PCS frequency bands should be only minimally affected by the presence of the wind turbines, if at all. Signal blockage caused by wind turbines is not very destructive to the propagation of signals in these frequency bands. In addition, these systems are designed so that if the signal from (or to) a mobile unit cannot reach one cell, it will be able to reach one or more other cells in the network. Therefore, no adverse impacts are anticipated.

Comsearch (2010b. *Land Mobile Report, Allegany Wind Power Project*. Ashburn, VA. Prepared for EDR. January 8, 2010) determined that there are thirty-four (34) LMR systems registered within the Area of Interest depicted in Figure 1 of the Land Mobile Report (see DEIS Appendix R). The majority of these LMR systems are licensed to governmental bodies including the State of New York, Cattaraugus County, and local municipalities. Considering the frequencies at which these systems operate, and the fact that the channels are used exclusively for audio communications, coverage should not be a problem when the turbines are operational.

The FAA conducts obstruction evaluation/airport airspace analysis (OE/AAA) aeronautical studies based on parameters of the proposed project, such as wind turbine locations, maximum height above ground level (agl), and wind turbine lighting and color to determine potential airspace obstructions as a result of the proposed Project. For the proposed Allegany Wind Power Project, a Notice of Proposed Construction or Alteration (Form 7460-1) was filed on-line with the FAA, and accepted for study on November 24, 2009. FAA determinations were subsequently issued on January 24, 2010, and all turbines are classified as “No Hazard.”

The Planning Board finds, based on the specific studies and conclusions included in the DEIS/FEIS, that no impacts on microwave paths, government transmitters, off-air television, AM and FM broadcast, mobile phone services, land mobile radio coverage, or OE/AAA are reasonably anticipated. Nevertheless, as a mitigation if reception signals of TV and other types of signals (*e.g.*, radio, cellular phone, land mobile radio, and personal communication systems) are determined, pursuant to the Complaint Resolution Procedure, to be impacted by the Project, the project sponsor shall offer alternative service to the impacted resident(s) at its expense.

3.7 Traffic

The Project Site is served by a network of State, County, and local roadways. In addition, the Project Site has an extensively developed network of existing forest, oil, and gas access roads. Impacts will occur to roads and transportation as a result of Project construction, and minimal impacts will occur as a result of Project operation.

Most traffic and road impacts will occur in the construction phase. Impacts are expected from delivery vehicles for turbine components, materials associated with turbine site

construction and assembly, and personal vehicles for workers. Delivery vehicles will range in size and weight from over-sized tractor-trailers (to deliver tower sections, turbine nacelle, rotor blades, cranes, and substation components) and concrete and aggregate trucks to fuel delivery trucks, mechanics' vans, and pickup trucks. Personnel vehicles will consist of automobiles and light trucks.

Small construction vehicles will be used on a regular basis during the construction period to deliver supplies, personnel, and other Project necessities. Gravel and concrete and other suppliers for the Project have not yet been selected but will be required to stay on the approved haul routes to the Project Site. Small construction vehicles will not have difficulty reaching the Project Site using local roads while complying with all Town, County, and State ordinances and road use permits and agreements.

A Route Evaluation Study was prepared by an experienced transportation engineering firm, and is included in the DEIS (Appendix P and Section 3.8). The Planning Board finds this study to be a reliable study as a starting point making traffic impact determinations. The purpose of this evaluation was to document the existing transportation conditions and identify probable travel routes, constraints, and proposed improvements. Any updating of these travel routes will be provided to the Planning Board and the Environmental Monitor prior the commencement of construction activities. All public road upgrades that were identified in the DEIS will be confirmed during final engineering, including shoring up bridge abutments, adding steel plates or gravel to road surfaces, widening roadways, reconfiguring intersection geometry to accommodate the turning radius of large construction vehicles, and identifying the bridges, pipes, and culverts that will not accommodate the construction related traffic. These improvements will be made at the Applicants' expense prior to the arrival of

oversized/overweight vehicles and concrete/gravel trucks. In addition, the Applicant will repair damage done to roads affected by construction within the approved haul route, at no expense to the Towns, Cattaraugus County, or State, thereby restoring the affected roads to be equal to or better than pre-construction conditions.

The use of public roads for oversize/overweight commercial transportation requires permitting, to the extent applicable, from New York State Department of Transportation (NYSDOT), Cattaraugus County Department of Public Works and surrounding jurisdictions. Allegany Wind will obtain the necessary permits from NYSDOT, Cattaraugus County and the Towns prior to construction. As a condition to the Planning Board's approval, no construction may begin until the Applicant and the Town of Allegany Town Board finalize the terms of a road-use agreement which designates approved routes and commits Allegany Wind to paying the cost of both improvements and repairs to local roads that are caused by Project related truck traffic, as well as posting a Road Bond to insure that these costs are covered, as required by Section 5.25(E), Commercial Wind Energy Conversion Systems, of the Town of Allegany Zoning Ordinance II.

If project construction occurs when schools are in session, there is the potential for conflict between construction and delivery vehicles with school buses. To mitigate this potential impact, delivery vehicle and construction vehicle traffic shall avoid periods of school bus activity along the affected routes to the maximum extent practicable. As part of the construction plan, the applicant's construction manager shall obtain school bus pickup/drop-off hours from all affected school districts prior to construction, and deliveries shall be scheduled to avoid conflicts. Hauling of major Project components through the Project Site on bus routes shall not be permitted during peak bus pickup and drop-off times. The applicant shall also

coordinate with the local emergency response units on a scheduled basis and provide them with updated delivery schedules and routing plans.

During construction, street sweepers, water trucks or other measures will be used to remove mud and control dust resulting from construction activities from local roads, if necessary.

Once the Project is commissioned, the Project Site is restored, and construction activities officially concluded, traffic will likely be concentrated around the Operations and Maintenance (O&M) Facility resulting from Project employees traveling to and from the O&M building. This level of traffic is a minimal increase compared to current levels. Personnel will be traveling to turbine sites for routine maintenance visits approximately once every three months, but certain turbines or other Project improvements may require periods of more frequent service visits. However, because all turbines and associated access roads are located on (and accessed from) private land, public road use due to routine maintenance activities will be very limited. In addition, Project personnel (or National Grid personnel) will perform routine maintenance on the Project substation interconnection approximately once per quarter (unless a non-routine maintenance matter occurs). In addition to maintenance activity, the operation of a wind power project typically increases tourist traffic, which, depending on volume, could result in a minor increase in traffic volume on certain roadways within the vicinity of the Project Site.

3.8 Air Quality

The Planning Board has investigated the potential for impacts on air quality and finds that the Project is not expected to have any short-term impacts on air quality other than minor, temporary impacts anticipated during site preparation and construction. The operation of

construction equipment and vehicles will produce emissions from engine exhaust and fugitive dust generation during travel on unpaved roads and construction activities. The contractor and/or construction manager will minimize fugitive dust and airborne debris to the maximum extent practical by implementing appropriate control measures. These measures may include (but are not limited to) the application of mulch, water, stone, or an approved chemical agent on any public roads, access roads, exposed soils, or stockpiled soils when dry and windy conditions exist. Other mechanisms to initiate dust control procedures include a determination from the environmental monitor that control measures shall be implemented, or a complaint by a landowner or local resident, which is confirmed by the environmental monitor. A watering vehicle shall be available for use for the duration of Project activities, including restoration.

3.9 Safety Issues

Construction of large-scale generating facilities present potential impacts on public safety. The Planning Board has considered these impacts and determines that the Project design and other mitigation measures, which will be implemented by the Applicant, will avoid or reduce these impacts to the maximum extent practicable as follows:⁶

3.9.1 Fire Safety

The turbines contain relatively few flammable components, however the presence of electrical generating equipment and electrical cables, along with various oils (lubricating, cooling, and hydraulic) does create the potential for fire or a medical emergency within the tower or the nacelle. This, in combination with the height of the nacelle and the enclosed space of the tower interior makes response to a fire or other emergency in the nacelle difficult, and beyond

⁶ Traffic safety issues are dealt with in the Traffic section.

the capabilities of most local fire departments and emergency service providers. In the event that a wind turbine catches fire, it is typically allowed to burn itself out while maintenance and fire personnel maintain a safety area around the turbine to protect against the potential for spot ground fires that might start due to sparks or falling material.

Other Project components create the potential for a fire or medical emergency due to the storage and use of diesel fuels, lubricating oils, and hydraulic fluids. Storage and use of these substances may occur at the substation, in electrical transmission structures, staging area(s), and the O&M building/facility. The presence of high voltage electrical equipment also presents potential safety risks to local responders.

To mitigate these impacts, the project sponsor has prepared a Fire Protection and Emergency Response Plan, which includes, among other provisions, the following:

- Initial and refresher training of all operating personnel (including procedures review) in conjunction with local fire and safety officials.
- Regular inspection of transformer oil condition at each step-up transformer installed at the main substation.
- Regular inspection of all substation components.
- Regular inspection of fire extinguishers at all facility locations where they are installed.
- All Project vehicles will be equipped with fire fighting equipment (fire extinguishers and shovels) as well as communications equipment for contacting the appropriate emergency response teams.

- The MSDS for all hazardous materials on the Project site will be on file in the construction trailers (during construction) and the O&M building (during operation), and provided to local fire departments and emergency service providers.
- The facility and/or contractor Safety Coordinator shall notify the local fire department of any situation or incident where there is any question about fire safety, and will invite an officer of the fire department to visit the workplace and answer any questions to help implement a safe operating plan.

The Planning Board finds that the minimum setback distance of 758 feet (in excess of 1.5 times blade tip height) between proposed turbines and public roads and non-participating property lines, and the minimum setback of 2,500 feet between the proposed turbines and permanent residences; the location of the substation (1200 ft. from the nearest dwelling); and the Fire Protection and Emergency Response Plan appropriately minimizes or avoids these potential impacts to the maximum extent practicable.

3.9.2 Ice Shed

Ice shed occurs when ice accumulates on rotor blades and subsequently breaks free and falls to the ground. Ice buildup slows a turbine's rotation and will be sensed by the turbine's computer controls, causing the turbine to shut down until the ice melts. The general public will not be at risk from falling ice, because the Project is located on private property and access by the general public is restricted. To minimize potential impacts, prior to the first winter season, representatives of Allegany Wind will meet with local landowners and snowmobile clubs to explain the risks of ice shedding and proper safety precautions. For any wind turbine that is located within 500 ft of a designated snowmobile trail, the Applicant will maintain signs warning

snowmobile trail users of potential snow and ice shedding. The signs will be located at points approximately 500 feet from the wind turbine, and the Applicant will confer annually with the local snowmobile clubs to learn of any changes in snowmobile routes that might result in a trail being within 500 feet of a wind turbine.

The Planning Board finds that the minimum setback distance of 758 feet between proposed turbines and public roads and non-participating property lines, and the minimum setback of 2,500 feet between the proposed turbines and permanent residences adequately protect nearby residents, snowmobilers and motorists from falling ice of any significant size.

3.9.3 Stray Voltage

Most stray voltage problems have been traced to either National Electric Code wiring violations or poorly grounded electric services. While the concerns surrounding stray voltage are legitimate, it is important to note they are largely preventable with proper electrical installation and grounding practices. The Project's power collection system will be properly grounded, and will not be connected to the local electrical distribution lines that provide electrical service to on-site structures or off-site buildings and homes. It will be physically and electrically isolated from all of the buildings in and adjacent to the Project area. Additionally, the wind farm's buried electrical collection lines will be located a minimum of four feet below ground, and will use shielded cables with multiple ground points. These protective measures will mitigate or avoid potential adverse impacts from stray voltage to the maximum extent practicable. The Town requires stamped plans demonstrating compliance with the National Electric Code, and will retain (at the applicant's expense) any necessary experts needed to confirm such compliance.

3.9.4 Tower Collapse/Blade Throw

While rare, another potential public safety concern is the possibility of a wind turbine tower collapsing or a rotor blade dropping or being thrown from the nacelle. Technological improvements and mandatory safety standards during turbine design, manufacturing, and installation have largely eliminated such occurrences. Modern utility-scale turbines are certified according to international engineering standards. The engineering standards of the wind turbines proposed for this Project are of the highest level and meet all federal, state, and local codes. In the design phase, state and local laws require that licensed professional engineers review and approve the structural elements of the turbines. State of the art braking systems, pitch controls, sensors, and speed controls on wind turbines have greatly reduced the risk of tower collapse and blade throw. The wind turbines proposed for the Project will be equipped with two fully independent braking systems that allow the rotor to be brought to a halt under all foreseeable conditions. In addition, the turbines will automatically shut down at wind speeds over manufacturer's threshold (45 mph for the Nordex model). They will also cease operation if significant vibrations or rotor blade stress is sensed by the turbines' blade monitoring systems. For all of these reasons, the risk of catastrophic tower collapse or blade failure is minimal.

The setbacks included in the Town of Allegany Wind Energy Regulations should assure, to the maximum extent practicable, that a tower failure would not endanger adjacent properties, roadways, or utilities. In addition, members of the public do not have access to the private land on which the turbines are located, and distance to the nearest public road/non-participating residence essentially eliminates risk to the public due to tower collapse/blade throw.

3.9.5 Lightning Strikes

Due to their height and metal/carbon components, wind turbines are susceptible to lightning strikes. Most lightning strikes hit the rotor, and their effect is highly variable, ranging from minor surface damage to complete blade failure. All modern wind turbines include lightning protection systems, which generally prevent total blade failure. These systems rely on lightning receptors and diverter strips in the blades that provide a path for the lightning strike to follow to the grounded tower. Lightning is effectively and safely intercepted at several receptor points including the outermost blade tip and the blade root surface, and transmitted to the wind turbine's lightning conductive system. Given the setback distances of the wind turbines to public roads and residences, even if a wind turbine is hit by lightning, there will be no risk to the public.

3.9.6 Electrocutation

Due to the generation and transmission of electricity, an operating wind power project poses the risk of electrocution if proper protections are not in place. The electricity generated by each turbine will initially be transmitted through 34.5 kV electric lines to a collection substation, and then delivered to an interconnection substation through a 115 kV transmission line. All these electric lines provide protection against electrocution in that all such lines will be buried at least 4 feet deep. Therefore, the general public will not be exposed to risk from electrocution.

3.9.7 Low Frequency Noise

Modern turbines of the type proposed for this Project do not generate low frequency or infrasonic noise to any significant extent and no impact of any kind is expected from low frequency sound associated with this Project. According to the turbine manufacturer's certified specifications, turbine vibration is minimal on properly functioning wind turbines. If

vibration occurs, the turbine computer system detects the abnormality and the turbine is automatically shut down. Numerous studies show that the low frequency content in the sound spectrum of a typical modern wind turbine—like those proposed for this Project—is no higher than that of the natural background sound level in rural areas (Sondergaard & Hoffmeyer, 2007; Hessler, 2008; Hessler *et. al.*, 2008).

In response to concerns that sounds emitted from wind turbines cause adverse health consequences, AWEA and CanWEA established a scientific advisory panel to conduct a review of current literature pertaining to the perceived health effects of wind turbines (see DEIS Appendix O). The objective of the multidisciplinary panel was to provide an authoritative reference document. The panel evaluated peer-reviewed literature on sound and health effects, as well as sound produced by wind turbines. The panel concluded that there is no evidence that the audible or sub-audible sounds produced by operating wind turbines have any direct adverse physiological effects, and the ground-borne vibrations from wind turbines are too weak to be detected by, or to affect, humans. In addition, based on the levels and frequencies of the sounds produced by operating wind turbines and the panel's experience with sound exposures in occupational settings, the sounds produced from operating wind turbines are not unique and therefore do not likely cause direct adverse health consequences (Colby et al., 2009).

The Planning Board received comments that wind energy facilities present health risks, particularly from low frequency noise. The FEIS addresses public comments on this issue. After reviewing the evidence presented, the Planning Board finds the studies referenced in the DEIS and FEIS are reliable and confirm there is no evidence of adverse public health effects from low frequency sound from wind turbines.

3.10 Water Resources

3.10.1 Wetlands and Surface Water

Access roads, wind turbines, the electrical collection systems, and substation have been sited outside wetland or surface water areas in order to avoid impacts on these resources to the maximum extent possible.

Based on an analysis of the Project layout and the wetland boundaries, there was a potential for impacts to occur to Chipmonk Creek and associated wetlands (adjacent to Chipmonk Road) due to the buried 34.5 kV interconnect. To avoid these impacts the Applicant will install the cable via directional boring which will pass under, and therefore not disturb, the Creek's bed and banks. Therefore, all impacts (temporary and permanent) to the Chipmonk Creek system are avoided. Similarly, the buried 115 kV transmission will be installed via underground boring where the line crosses Fourmile Creek and Twomile Creek and an approximately 1.7 acre wetland. Therefore, through the use of directional boring technology the installation of the Project distribution and transmission lines will not have any adverse impacts to wetlands/streams, and will not require authorization from U.S. Army Corps of Engineers or the NYS Department of Environmental Conservation (NYSDEC).

Construction activities have the potential for other direct or indirect impacts to wetlands and surface waters through erosion and sedimentation. Direct wetland and surface water impacts have been avoided by utilizing specific construction techniques where necessary. Impacts will also be reduced through erosion and sedimentation control measures (*see* section 3.3 of this Statement of Findings, which lists specific erosion and sedimentation controls that will be required). In addition, equipment restrictions, controls on equipment washing, and herbicide use restrictions will be utilized to reduce other adverse impacts to water quality,

surface water hydrology, and aquatic organisms. Clearing of vegetation along stream banks and in wetland areas will be kept to an absolute minimum.

The Project will not result in wide-scale conversion of land to built/impervious surfaces. Tower bases, crane pads, access roads, and the substations in total will add approximately 27 acres of impervious surface to the 9,119-acre Project Site, post-construction (*i.e.*, conversion of less than 1%). Consequently, no significant changes to the rate or volume of stormwater runoff are anticipated. However, installation of permanent Project components could result in minor localized changes to runoff/drainage patterns.

Specific means of avoiding or minimizing stormwater-related adverse impacts during construction and operation of the Project include adhering to a detailed soil erosion and sedimentation control plan. Prior to construction, a detailed Stormwater Pollution Prevention Plan will be prepared according to NYSDEC guidelines. This will mitigate construction and post-construction stormwater impacts. To avoid localized drainage problems and restore runoff patterns to pre-development conditions, a system of stormwater management facilities consisting of collection and cross culverts, check dams, sedimentation basins and water bars will be implemented as part of the Storm Water Pollution Prevention Plan (SWPPP). The Environmental Monitor will assure that the best management practices outlined above are installed in accordance with the SWPPP and will identify the need for additional measures, as necessary, throughout the duration of construction. The SWPPP will also address post-construction stormwater management. Through implementation of NYSDEC-accepted practices, post-construction runoff will be effectively managed so that there is no net increase in runoff as compared to pre-construction conditions.

According to the Construction Spill Prevention Plan (Section 3.2.3 of the DEIS) the project adverse environmental impacts is not anticipated. A Spill Prevention, Containment, and Countermeasure (SPCC) Plan that outlines procedures to be implemented to prevent the release of hazardous substances into the environment has been prepared (FEIS, Appendix B).

The Planning Board finds that these measures will protect wetland and surface water resources and minimize and avoid potential adverse impacts to the maximum extent practicable.

3.10.2 Groundwater

Potable water supply to residences in the vicinity of the project site is provided by individual water wells and springs. There is a remote potential for the water quality and/or quantity of these wells to be adversely affected by blasting during construction of the turbine pads, if blasting is necessary. The likelihood of adverse impacts is considered to be small, due to the depth of wells, distance from proposed turbines, and elevation relative to proposed turbines. To mitigate potential impacts to well water, blasting, if needed, will be done in compliance with a blasting plan designed with appropriate charge weights and delays to localize bedrock fracturing to the proposed foundation area (*see* Preliminary Blasting Plan in DEIS Appendix A). Prior to blasting, the provisions in the preliminary blasting plan shall be evaluated by the Environmental Monitor for adequacy and revised as necessary to address any site specific requirements.

The Environmental Monitor will also ensure that the pre-blasting and post-blasting surveys, including a well survey, described in FEIS Section 4.3 are implemented. The well survey will consist of a record of all private water wells and springs (water sources) within

3,000 feet of the blasting site. The survey will include assessment of the well condition, water quality and production, performed by an independent laboratory/inspection firm whose credentials are acceptable to the Town. These inspections will serve to document conditions that exist prior to the start of construction. Upon completion of blasting, a post-blasting water source survey will be conducted and the results will be compared with the established baselines. The Town's Environmental Monitor will deem any decrease in quality or production as an adverse impact. If a water source is adversely impacted by the project, the impacted residence will be provided with potable water by the Project sponsor as a temporary measure, which will continue until the project sponsor has provided a permanent solution that meets the baseline flow and water quality characteristics. Such permanent mitigation may include reconditioning of the existing water source, installation of a filtering system or drilling a new well at the residence. The Town's Environmental Monitor will determine when the permanent solution has been adequately provided.

The Planning Board finds that these mitigation measures will protect groundwater resources and water sources and will minimize and avoid potential adverse impacts to the maximum extent practicable

3.11 Vegetation and Wildlife Impacts

There are potential impacts to vegetation and wildlife from both construction and operation of the Project. In order to assess the potential for impacts to plants and wildlife in the Project area, a series of studies was conducted to identify plant and animal species found on the Project site. These studies are included in DEIS Appendices H, I and J, and are discussed in DEIS Section 3.3, in FEIS Section 4.4, and FEIS Appendix M.

On-site bird and bat surveys were completed over multiple seasons through a variety of weather conditions. The studies included, on-site breeding bird surveys during 2007 and 2008, on-site raptor migration surveys during 2007 and 2008, on-site radar surveys on night-migrating songbirds during 2007 and 2008, anabat surveys during the fall of 2007, and during the spring, summer, and fall of 2008, and on-site observations by various ecologists during the fall of 2008 and summer of 2009. The results of the field surveys were consistent with other studies conducted regionally as well as locally (*see* Appendix I of the DEIS).

On-site breeding bird surveys were conducted during the summers of 2007 and 2008 to provide site-specific information on nesting birds at the Project Site. During the 2007 survey, 35 species were observed within 50 meters of the point count centers, with an additional 17 species recorded incidentally or beyond the 50 meter sampling area, for a total of 52 species. One individual cerulean warbler, listed by New York State as a species of special concern, was observed between survey points. Although not detected during point counts, the cerulean warbler was singing, and is likely a breeding bird within the Project Site. No rare, threatened, or endangered species were observed. During the 2008 survey, 43 species were observed within 50 meters of the point count centers, with an additional 17 species recorded incidentally or beyond the 50 meter sampling area, for a total of 60 species. No rare, threatened, or endangered species were observed during 2008.

The migrating songbird radar data from the fall and spring surveys indicate that the passage rate is consistent with similar data collected at wind farm sites within the state. In addition, the nighttime migration characteristics include high flight heights relative to the proposed turbines and natural landscape features, as well as uniform movement across the radar display. This indicates that migration over the Project Site is likely to occur as a broad front

movement, and that landscape features are not causing night-migrating birds to concentrate at any specific location (*i.e.*, the Project Site is not in a migration corridor).

To characterize and document bat activity within the Project Site, the Applicant conducted anabat surveys during the fall of 2007, and during the spring, summer, and fall of 2008. Although there are very few examples available from which to draw comparisons, detection rates from forested ridge sites in the mid-Atlantic (Maryland and West Virginia) tended to be higher than that documented at Allegany, while sites in New England (Maine, Vermont, and New Hampshire) tended to be lower. The Indiana bat is listed as federally and state endangered, and the eastern small-footed bat is listed as a state species of special concern. However, the proposed Project is located in southern Cattaraugus County, which according to NHP records, is outside the range of both the Indiana and eastern small-footed bats. Therefore, occurrence of either bat species within the Project Site or vicinity is considered unlikely and no individuals were detected in the studies conducted on the Site.

3.11.1 Construction Impacts

While significant impacts to most wildlife species are not expected as a result of construction of the Project, some limited mortality of less mobile species during the course of construction may occur.

Because the Project Site is largely forested, the state-listed wildlife species most likely to be impacted by Project construction will be forest-dwelling bird species, such as Cooper's hawk, northern goshawk, sharp-shinned hawk, red-shouldered hawk, Cerulean warbler, yellow-breasted chat, red-headed woodpecker, and golden-winged warbler. Construction-related impacts to these species could include disturbance/displacement of wildlife due to noise and

human activity, and/or mortality impacts to eggs or immobile young. These impacts will be minimized by scheduling tree clearing activity outside of the nesting/brood rearing season.

No state threatened or endangered plants or significant natural communities were detected within any portion of the Project Site during the field surveys. However, rockhouses and rock outcrops which can provide habitat for the Appalachian shoestring fern and Appalachian bristle fern, both listed as NYS endangered species, are located throughout the project site. While the Project has been macro sited to avoid these features, in order to insure that the Project will avoid any potential for impact to these species, the environmental monitor and the Project's construction manager will conduct infield inspections of each specific turbine site where such rockhouses and rock outcroppings exist to insure that these features will not be affected by turbine pad siting. If necessary the turbine pad locations will be shifted and access areas will be specifically demarked to avoid any areas of potential habitat.

The Planning Board finds, based on its review, that it agrees with the statement of the Chief Botanist from the NYS Natural Heritage Program (*see* FEIS 4.4 Written Comment 1X) confirming that these efforts, together with onsite monitoring during construction, would avoid potential impacts to the Appalachian shoestring fern. Because the Appalachian bristle fern has the same habitat requirements/characteristics as the shoestring fern, this mitigation will also avoid potential impacts to this species.

Project construction will be initiated by clearing woody vegetation from all tower sites, access roads, and electrical interconnect routes. Trees cleared from the work area will be cut into logs and removed from the defined work area, while limbs and brush will be chipped and spread in upland areas (safely away from water resources) on-site so as not to interfere with

existing land use practices. Landowners will have the right to any materials, including trees, taken from their property during site preparation, and any trees not claimed by the landowner will be sold to a local forestry operation or timber mill. In addition, restrictions regarding the movement of wood with respect to the emerald ash borer will be adhered to under the supervision of the Environmental Monitor.

3.11.2 Habitat Loss and Fragmentation

Project construction will result in temporary and permanent impacts to vegetation within the Project Site. Indirect impacts to wildlife will occur as a result of habitat loss/alteration in association with construction and operation of the Project. A total of 27 acres of wildlife habitat would be permanently lost from the Project Site, which represents less than 1% of the approximately 9,119-acre Project Site. In order to minimize the amount of habitat that would be disturbed to the greatest extent possible, project components such as access roads, turbines, and collection lines have been sited in and around previously disturbed land wherever possible. Collection lines are primarily co-located with the access roads. Access roads are sited on existing oil and logging roads where possible.

Fragmentation of habitat, in particular interior forest habitat, is a potential impact. Many of the turbines are immediately adjacent to existing clearings, and therefore much of the turbine-related clearing will result in an extension of existing clearing. Consequently, the impacts associated with this Project are expected to be consistent with the impacts associated with current (and historic) land uses on-site. As detailed in FEIS Section 4.4, it was estimated that Project construction activities could represent a 19 percent increase in cleared area and area of edge effect from existing baseline conditions. Following re-vegetation, only an eight percent increase in cleared area and area of edge effect from existing baseline conditions is anticipated.

However, in response to concerns for impacts to habitat suitable to forest interior species by the NYSDEC in their written comments, the Town's environmental consultant, Conestoga Rovers and Associates (CRA), sent a biologist to conduct a site investigation. The intent of the investigation was to determine if significant impacts and forest fragmentation would occur due to the construction and operation of the Project. The biologist concurred with the Applicant's statements that the Project Site is largely disturbed and fragmented by oil/gas and logging activities, but that the Project's minor additions to this pre-existing condition could result in incremental impacts to forest interior bird species, which species are common to the Project Area.

In order to minimize impacts to habitat, including forest interior habitat, the following mitigation measures, which are described in detail in the DEIS, will be adhered to during planning and construction:

- The 115 kV transmission line will be buried; therefore, impacts associated with permanent habitat loss due to the transmission line are minimized.
- The transmission route avoids ecological impacts to the maximum extent practicable by using existing logging/forest roads (*see* FEIS Appendix J) and minimizing wetland/stream crossings.
- Portions of the transmission line are sited within an old National Grid right of way (ROW). In addition, the proposed transmission line was walked with several landowners and a local forest expert in an effort to site the line with the least amount of ecological impact possible. Therefore, large portions of the transmission line occur over existing logging roads, ATV trails, and other man-made clearings.

- Installation of the 34.5 kV electrical interconnect lines will be underground.
- In areas where 34.5 kV buried electrical lines are collinear with proposed access roads or existing oil/gas roads, no additional soil disturbance or vegetation clearing, beyond that anticipated for road construction, is anticipated.
- All Project components will avoid impacts to federal jurisdictional or state regulated wetlands/streams either by placement outside these features or using methods such as borings to cross over/below these features.
- All sediment and erosion control measures will be installed and maintained according to the Project-specific NYSDEC-approved Stormwater Pollution Prevention Plan (SWPPP) for the Project (*see* DEIS Appendix C for Preliminary SWPPP).
- Proper methods for segregating stockpiled and spoil material shall be implemented as discussed in the DEIS (Section 3.1.3). Excavated soil will be reused to the maximum extent possible on the site that it was excavated from, as a means to limit opportunities for proliferation of non-native flora and other invasive species.
- Following construction, all temporarily disturbed areas will be stabilized and restored in accordance with approved plans.
- Allegany Wind LLC will fund an environmental monitor to oversee construction and restoration activities. Prior to the start of construction at any given site, an environmental monitor and the contractor will conduct a walk-over of areas to be affected, or potentially affected, by proposed construction activities. This pre-construction walk-over will focus on the previously identified sensitive resources to avoid, as well as the limits of clearing, location of wetland and stream crossings, location of drainage, location of underground utilities and tile lines, and layout of

sedimentation and erosion control measures. Upon identification of these features, they will be marked in the field (by staking, flagging, fencing, etc.), specific construction procedures will be determined, and any modifications to construction methods or locations will be proposed before construction activities begin. During construction, the Environmental Monitor will assure compliance with the established methods, standard industry practices, the construction plans/documentation, and protection measures.

- To further protect against impacts to any state-referenced bird species, the Environmental Monitor will survey work areas that are considered suitable for nesting. If any nesting, threatened or endangered species are observed in the immediate proximity of a construction area the Environmental Monitor will work with Allegany Wind to ensure that the appropriate avoidance measures are taken into consideration and the birds are not negatively impacted.

3.11.3 Impacts from Project Operation

Wind turbines, like any tall man-made structure, will cause avian and bat fatalities. Species that transit the Project airspace at or near rotor height may be at risk of collision. However, no listed species appear likely to engage in these behaviors at a frequency that would lead to significant collision risk. Forest interior species found on-site, such as cerulean warblers, are not likely to be at risk of collision because they do not fly above the canopy during most of the nesting season, and when they do so, they are only a few feet above the treetops.

The multi-year migration surveys indicate that the migration rates of avian and bat species are relatively low or similar to other studies conducted throughout the state or in similar habitats throughout the northeast. Therefore, while avian and bat fatalities will occur, the

number of individual animals affected is not anticipated to be higher than that at similar wind turbine facilities, and there is no anticipated significant impact on species of concern.

Based upon a comprehensive analysis conducted for other wind projects across the United States, avian collision with wind turbines is estimated to range from 2.19 (national average) to 1.83 (national average outside California) fatalities per turbine per year (Erickson et al, 2005 and NWCC, 2004, respectively). With respect to avian impacts, based upon analyses completed in 2007 and 2008 for the Maple Ridge Wind Power Project (located in Lewis County, NY), avian collision with wind turbines is estimated to range from 5.67 to 9 fatalities per turbine per year (Jain et al., 2007; Jain et al., 2008). Applying this range of impacts, the 29 turbines proposed for this Project could result in an estimated range of 165 to 261 avian fatalities per year.

With respect to bats, an analysis of bat fatalities at wind energy facilities across the U.S. resulted in an estimate of 3.4 bats per turbine per year (NWCC, 2004). However, because recent studies suggest that bat fatalities at wind farms may be higher in the eastern U.S., it is useful to again include results from the 2007 and 2008 Maple Ridge Wind Power Project bat fatality study. The estimates derived from these studies range from 8.18 to 18.53 bat fatalities per turbine per year (Jain et al., 2007; Jain et al., 2008). Applying this range to the 29 turbines could result in an estimated range of 238 to 538 bat fatalities per year.

The turbine model that is proposed for this Project has no guyed wires or support structures that would increase collisions by birds/bats. At the request of the NYSDEC and consistent with the Agency's approach for all wind farms permitted in New York State, to assist the State in its ongoing evaluation of wind farms in relation to bird and bat activities, a post-

construction mortality monitoring study protocol will be developed in consultation with state and federal agencies. The study will include details such as study duration, search frequency, search areas, number and location of turbines to be searched, concurrent data collection and analysis, carcass collection for further study, and mitigation strategies.

3.11.4 Conclusions

The Planning Board finds that the avian and bat survey data collected by the Applicant was sufficient to adequately forecast the potential for adverse avian and bat impacts, based on precedent set for studies completed for similar wind projects throughout New York State, and based on input from the NYS Department of Environmental Conservation and US Fish and Wildlife Service. The Planning Board notes that the data indicate that the Project Area does not attract a relatively high number of migrating raptors, nor does it attract unusually high concentrations of migrating songbirds. The anabat surveys indicated that there is no presence of the Indiana bat, eastern small-footed bat, or any uncommon bat populations or habitats within the Project Area. During the SEQRA review process no state or federal agency indicated a concern related to potential impacts to raptors or eagles.

With respect to non-avian species, based on consultation with USFWS and NYNHP, no non-avian threatened or endangered animal species or communities were identified within the Project Area.

Mitigation of impacts to vegetation has been accomplished primarily through careful site planning. The most ecologically significant and/or sensitive features (*i.e.*, rocky outcrops, streams, and wetlands) are being avoided to the extent practicable. The wind turbines

have been sited to avoid wetland habitats. The boring techniques that will be used to install electrical lines across streams and wetlands will also avoid impact to these habitats.

Therefore, the Planning Board finds based on the studies and evidence provided, and with the mitigation measures that are discussed above, the potential fatalities to avian and bat populations will not be biologically significant and do not represent any significant risk to local populations. No impacts to non-avian threatened and endangered animal species are expected as a result of construction or operation of the Project. Only minor loss of wildlife habitat will occur, and this impact is not expected to be significant. No impacts to listed threatened and endangered plant species are expected as a result of construction or operation of the Project, and no plant species occurring in the Project Site will be extirpated or significantly reduced in abundance as a result of construction activities. The Planning Board further finds that the mitigation measures, as discussed above and included in the EIS, minimize or avoid potential impacts to the maximum extent practicable.

3.12 Project Benefits

3.12.1 Air Quality

The Project is expected to have a long-term beneficial impact on air quality in the region impacted by fuel-based electric generators servicing the New York State electric market. It is well documented that electric generation by fossil fuel-fired facilities contributes to serious environmental and health problems from, NO_x, SO₂, CO₂, particulate matter, and mercury emissions. The Project will displace electric generation from other sources that would have emitted significant levels of these pollutants. In addition, as recognized by the NYSDEC, carbon dioxide emissions, a significant portion of which is created from fossil fuel power generation, are

a contributor to global climate change, which is one of the most important environmental challenges of our time.

The State Energy Plan includes as one of its goals to increase the use of energy systems that enable the State to significantly reduce greenhouse gas (GHG) emissions while stabilizing energy costs and improving the State's energy independence through development of in-state energy supply resources. The State Energy Plan recognizes that wind energy projects will play a role in fulfilling this objective. The State Energy Plan recognizes that to the extent that renewable resources and natural gas are able to displace the use of higher emitting fossil fuels, relying more heavily on these in-state resources will also reduce public health and environmental risks posed by all sectors that produce and use energy. Thus, the Planning Board finds the Project will have a significant long-term beneficial impact on air quality by producing electricity without any emissions to the atmosphere.

3.12.2 Economic Benefits

The local economy will experience a positive increase in jobs, earnings, and local economic activity that will last during the operational years of the Allegany Wind Power Facility. The Project will provide over \$12 million total (over 20 years) through a payment in lieu of taxes (PILOT) and a Host Community Agreement (HCA) to the Town of Allegany, Cattaraugus County, and the Allegany Limestone School District. The Project will create temporary jobs during Project construction and full-time jobs for the life of the Project, with wages ranging from \$30,000 to \$40,000 per year (for an Administrative Assistant), to \$70,000 to \$80,000 per year for the Project Manager. All participating landowners will receive lease payments on an annual basis. The Project will also generate an increase in the purchase of local goods and services and increased visitation to the Project Area by local tourists interested in

wind power. There are also indirect economic benefits, such as “spin off” jobs due to the increased household spending and commercial activity in the area.

3.12.3 Employment

Construction of the Project will result in the direct employment of up to 61 electrical workers, crane operators, equipment operators, carpenters, and other construction workers. During plant operations the Project will employ six full-time employees, including a Project Manager, Wind Technicians, and an Administrative Assistant, with direct annual earnings of \$400,000.

To the extent practicable, local labor will be used to fill these positions to maximize the benefit to the local community. The majority of the employment used in the construction process will likely be drawn from the Cattaraugus County and the NYS Southern Tier labor market. When possible, qualified local individuals will be hired for the full-time positions of the operating Project. Any increase in the local population attributable to the Project would be negligible, and no impact on the housing market or schools is anticipated.

3.12.4 PILOT and HCA Payments

The DEIS calculates the assumed total PILOT payments based on the proposed amount of megawatts to be generated by the Project and a formula used at other wind projects developed in the State. At this time, it is contemplated that the PILOT and HCA will be a total of \$8,500 per turbine multiplied by 72.5 MW for a total benefit from the Project to the taxing jurisdictions (Town of Allegany, Cattaraugus County and Allegany Limestone School District) in the amount of \$616,500, annually. The IDA determines the PILOT agreements, but for other

wind projects, duration is typically 10-20 years. When the term expires or the project is repowered, a new PILOT is negotiated or the property returns to the tax rolls.

3.12.5 Benefits to Landowners

Allegheny Wind will pay landowners who consented to Project components occupying portions of their land and/or easements associated with the Project in the form of a standard lease agreement or easement, which will provide for compensation during the Project's development, construction, and operation. These leases and easements will secure all the land rights necessary to develop, construct, and operate the wind turbine generators along with all ancillary facilities. This revenue will be in addition to the income generated from the underlying land use such as harvested timber, or gas extraction. In addition, these lease payments will have a positive impact on the local and regional area, assuming the landowners will spend their revenue locally.

3.12.6 Population and Housing

The Project is not expected to have a long-term impact on housing and population in the Town, but it may result in short-term impacts on local lodging. Even though employment during the construction period will be significant, this employment is relatively short term, and is not expected to result in workers permanently relocating to the area. For the duration of construction there could be a temporary increase in local population and demand for temporary housing or hotel room/nights by out-of-town workers. However, this demand will be relatively modest, and should easily be accommodated by the available housing and hotels in the towns and surrounding communities.

It is anticipated that up to approximately six full-time jobs will be created once the Project is fully operational. These employees are expected to reside locally, which could result in the purchase of new homes and the addition of families to the towns and surrounding communities. Although this represents a positive economic impact, long-term employment associated with the Project is not large enough to have a significant impact on local population or housing characteristics.

3.13 Sound

Noise from construction and operation of the Project is a major concern for local residents (as reflected in the number of public comments received on the DEIS), as well as the Planning Board. The Planning Board hired its own expert engineers to conduct reviews of the Allegany Wind DEIS and FEIS, and to conduct independent sound studies. The Planning Board's studies included Ambient Sound Level Assessment and Noise Impact Modeling. The conclusions of the Planning Board are based on the reports and findings of the Planning Board's experts, in addition to the information provided in the DEIS and FEIS.

Analyses were performed in the Town to establish baseline ambient noise levels, and to assess the impact the Allegany Wind Project will have on potential noise receptors during both Project construction and operation.

One tool for considering potential sound impacts is the DEC guidance document (NYSDEC "Program Policy DEP-00-1 Revised: June 3, 2003 – Assessing and Mitigating Noise Impacts" ["DEC guidance"]). Among other things, this guidance provides that if studies demonstrate circumstances in which Project sound could exceed background sound at sensitive

receptors by 6 dBA or more, additional evaluation should be undertaken to determine whether this circumstance would result in adverse impacts.

Studies conducted by the Applicant, and verified by independent studies conducted by the Town's consultants, confirmed that, due to unusually low background sound levels in the Town, under worst-case conditions, Project sound could exceed this low background level by more than the 6 dBA threshold at certain sensitive receptors. Consistent with the DEC guidance, the Planning Board recognizes two control mechanisms which will ensure that any such exceedances of the 6 dBA threshold will not result in undue adverse sound impacts to sensitive receptors: 1) The Local Law requirement that Project Sound should not exceed 45 dBA at the property boundary of non-participating residences ; and 2) an extra level of protection by virtue of the Planning Board's commitment (by resolution at its meeting of March 21, 2001) to adopt a permit condition that Project sound should not exceed 40dBA at residential structures on non-participating properties. Together these restrictions cap Project sound on non-participating properties at levels described in the DEC guidance as "quiet" to "very quiet."

At the time the FEIS was released, Project sound exceeded the 45dBA⁷ standard at seven non-participating property boundaries and exceeded 40dBA at 10 non-participating residential structures. The Applicant committed to bringing the Project into compliance with these standards either: 1) by entering into easement/sound agreements with the affected landowners thereby including these properties as participating parcels under the local law, or 2)

⁷ The Board recognizes that the base map showing this property line exceedance is not a surveyed map and that some of the incursions shown on this map are slight. Consequently, it may be that a survey in these close cases, which more precisely demarks this property boundary location and shows that the sound exceedance does not intrude across the boundary line, could also be submitted by the applicant to demonstrate compliance with the standard.

by employing sound dampening measures at Turbines that contribute to the exceedances in order to bring them within the 40dBA and 45dBA thresholds discussed above.

Subsequent to the issuance of the FEIS, the Applicant has provided a report demonstrating that updated sound power level information for the Nordex N100 will reduce the noise levels predicted in the DEIS/FEIS. The Applicant has also provided a table of turbine compliance based on this updated information (*See Exhibit A of these Findings*). The Applicant's report states that the updated sound power level information, as well as sound dampening measures proposed to be used at Turbine 4E, will bring the Project into full compliance with the 40dBA and 45dBA thresholds. The Town's consultant, CRA, has run an independent model based on the updated sound power level for the Nordex N100 including the reduced sound power level at Turbine 4E resulting from sound dampening at this turbine. CRA has confirmed, using 1.5 meters as the height of the receptor and using the full power mode of 106 dBA, all parcels shall comply with the 40 dBA at non-participating residences and that only one non-participating parcel (tax map # 102.001-1-25) will be non-compliant with the 45 dBA zoning ordinance standard at the rear of the property to a depth of approximately 149 feet. CRA also concurs that when using the reduced power mode of 104 dBA at Turbine 4E only, the entire project is in compliance with the 45 dBA requirement at the property line. This evaluation confirms the conclusion in the Applicant's report. Accordingly, to the extent Turbine 4E is approved, that approval is subject to the condition that it not operate at a power mode exceeding 104 dBA.

Accordingly, the Planning Board concludes that, based on the updated Sound Power levels, the Project, without further easements or controls, will comply with the 45dBA/40dBA standards with one exception. Under worst case conditions Turbine 4E will

cause an exceedance of the 45dBA standard up to 149 feet within the property line of a single nonparticipating property. Consequently, unless or until the Applicant is able to secure a sound easement for this single property affected by Turbine 4E, the Applicant will implement sound dampening at Turbine 4E (*i.e.* will not operate this turbine at a power mode exceeding 104 dBA) to avoid and mitigate any potential adverse sound impacts on this non-participating property to the maximum extent practicable, consistent with the Town's local law and the Board's intended permit condition.

In regard to noise related to Project construction, there are no State or Federal limits established, and construction sound levels are not addressed by the Town's Wind Energy Regulations. A significant portion of the construction will occur in remote areas, and significant construction-related sound impacts are not anticipated. In general, the maximum potential impact at any single residence might be analogous to a few days to a week of repair or repaving work occurring on a nearby public road. More commonly, sounds from Project construction are likely to be faintly perceived as the far off sound of diesel-powered earthmoving equipment characterized by such things as irregular engine revolutions, back up alarms, gravel dumping, and the clanking of metal tracks. Sound from Project construction is likely to be at least intermittently audible at distance of up to 7,600 feet. At the very worst, sound levels ranging from 54 to 61 dBA might temporarily occur over several weeks at a distance of 1,200 feet from the turbine construction sites. These levels would not occur on a permanent basis, or outside of normal daytime working hours (when all Project construction is planned), but as a temporary, occurrence during construction. Construction noise of this magnitude may go unnoticed by many in the area. In any event, Project construction noise will be a temporary impact.

In the unlikely event blasting is necessary, the blasting contractor will notify the Town to obtain approval. Although the noise level at a distance of 2,500 feet (minimum turbine setback distance from residences) is not expected to exceed 66 dBA, a Blasting Plan will be prepared prior to Project construction and include noise mitigation techniques, such as tamping of stemming into blast hole collars, use of blasting mats, limitation of blasting activity to the hours of 7:00 a.m. to 7:00 p.m., and notification to adjacent landowners and tenants. In the event blasting is required, the noise will be extremely short in duration and infrequent.

3.14 Visual Impacts

A detailed visual analysis was provided in the SEQRA Record to assess the potential for significant visual impacts from the Project. The existing visual land use within the visual study area is dominated by forestland, but also includes agricultural land, industrial uses such as oil and gas drilling operations, rural residential areas, cities, villages, and hamlets. Visual and aesthetic resources within 10 miles of the Project were identified, including any historical structures, parks, scenic views, and landmarks. In addition, in response to comments received during the DEIS public comment period, the Applicant's Visual Expert prepared a technical memorandum to address potential project visibility and visual impacts from Hawthorne Lane, St. Bonaventure University, and Allegany State Park. The visual resources were then analyzed to identify the most prominent views of the Project from these resources and from the general area surrounding each site.

Based on a topographic viewshed, which represents a "worst case" assessment because the screening provided by vegetation and structures is not considered, the Project could potentially be visible in approximately 39% of the 10-mile radius study area, and in approximately 57% of the 5-mile radius study area. Potentially visible areas are concentrated in

proximity to the proposed turbines, and on ridge tops and slopes oriented toward the Project throughout the visual study area. Most valleys are screened from view, except those aligned directly toward the Project Site, such as the Chipmunk Creek, West Branch of Fourmile Creek, and Five Mile Creek valleys. Concentrated areas of potential visibility are also indicated in and around the Village of Allegany and the City of Olean.

Factoring forest vegetation into the viewshed analysis partially reduces potential Project visibility. Within the 10-mile radius study area, the vegetative viewshed analysis indicates that only approximately 4.1% of the area will have potential day time views of the proposed turbines. Within the 5-mile radius study area, the vegetative viewshed analysis indicates that only approximately 6.5% of the area will have potential day time views of the proposed turbines. These areas are largely restricted to open agricultural fields on hilltops and valley floors, although an area of potential visibility is also indicated in the Village of Allegany and the City of Olean (*see* discussion below). These areas are also where the analysis indicates there is the greatest potential for seeing the majority of the proposed turbines. The vegetation viewshed analysis also indicates that FAA warning lights on top of the nacelles should be screened from view by forest vegetation and/or topography in over 96% of the 10-mile radius study area. Nighttime visibility is indicated in generally the same locations shown in the topographic and vegetative viewshed analyses.

Areas of actual visibility are anticipated to be much more limited than indicated by the viewshed analysis, due to the slender profile of the turbines, the FAA determination that only 14 of the 29 proposed turbines require aviation warning lights, the effects of distance, and screening from hedgerows, as well as street trees and structures, which are not considered in the viewshed analysis. In addition, field review confirmed that actual Project visibility is likely to be

even more limited than suggested by vegetation viewshed mapping. This is due to the fact that screening provided by trees within the visual study area is more extensive and effective than assumed in these analyses.

Field review confirmed a lack of visibility from areas that were heavily-forested, and from narrow valleys. The Project will not likely be seen from most areas to the south and west of the Project site including the Village of Limestone and the City of Bradford, Pennsylvania. Visibility will also likely be very limited in the Village of Allegany and the City of Olean, where ground-level views will be blocked by buildings and street/yard trees. However, the turbines could be seen from a few locations in Olean and Allegany, and along NYS Route 17/Interstate-86 and County Route 60, as they traverse the broad Allegheny River valley. The turbines will also likely be visible from several locations within the Chipmunk Creek, Fourmile Creek, and West Branch of Fourmile Creek valleys where agricultural fields and the cleared road corridors provided opportunities for open views.

In regard to public concerns about potential views from Hawthorne Lane, the Applicant's Visual Expert obtained photos from seven publicly accessible viewpoints on Hawthorne Lane. A supplemental simulation of the proposed Project was developed from the point that offered a completely unobstructed view toward the Project Site, and thus presents "worst case" views of the Project from a public vantage point on Hawthorne Lane. A total of eight turbines can be seen along the forested ridgetop that forms a portion of the horizon in this view. Significant portions of three of these turbines are screened by the ridge and its forest vegetation, while the remaining visible turbines are largely unscreened. A Rating Panel noted, in its opinion, that although the turbines may be perceived to have an adverse impact by area residents, the turbines do not have a significant effect on the scenic quality of the view.

A supplemental simulation was also prepared from a viewpoint on the St. Bonaventure University Campus, in response to public concerns about potential project visibility from this specific location. Based on the simulation, seven turbines appear prominently on the background ridge. A Rating Panel noted, in its opinion, that the turbines vertical line, scale, and color present moderate to appreciable contrast with the landform, vegetation, and sky in this view. The turbines could also have an appreciable effect on viewer enjoyment of this view, and present a distraction to spectators viewing athletic events at this location. However, a rating panel member evaluating the simulation noted that other, primarily man-made elements in the view limit, the scale and land use contrast presented by the turbines, and the overall visual contrast would be moderate.

The State Parks division of the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) sent the Town of Allegany a letter, which expressed concern regarding potential Project visibility from Allegany State Park. This letter identified eight specific locations from which photo documentation of existing views toward the Project site was requested, and the possible preparation of supplemental visual simulations. Each viewpoint identified was visited and the view from the Summit Fire Tower (Ridge Run Trail) is the only open view documented during the field visit that would allow unscreened views of the Project from the park. Based on the simulation, only one turbine is clearly visible along the background ridge. The Rating Panel noted, in its opinion, that the distance of the turbines from the viewer, and the partial screening provided by the foreground tree branches during all seasons, will minimize Project visibility and visual contrast with the landscape. Therefore, overall Project contrast and visual impact is likely to be insignificant.

Mitigation options for the visual impacts of the Project are limited, given the nature of the Project and its siting criteria (tall structures on high elevation sites). These mitigation measures, in accordance with Section 5.25(C)(10) of the Town of Allegany Zoning Ordinance II include the following:

- The turbines will be of uniform design, with identical color, height, rotor diameter, and operational characteristics.
- The turbines will be painted white with non-reflective paints and finishes to minimize contrast with the sky under most conditions. This color also eliminates the need for daytime aviation warning lighting, further reducing daytime visibility and visual impact.
- Turbine lighting will be kept to the minimum allowable by the FAA.
- Towers will include no exterior ladders or catwalks.
- No placement of advertising devices on the turbines will be allowed beyond the manufacturer's logo.
- The turbines and turbine sites will be maintained to ensure that they are clean, attractive, and operating efficiently.
- Compliance with required set-backs from roads, residences, and property lines. No turbine will be closer than 2,500 feet from any residence.
- The Project operations and maintenance building will reflect the vernacular architecture of the area.
- New road construction will be minimized by utilizing existing on site and public roads whenever possible.

- The visual impact of the electrical transmission system is being minimized by placing the lines underground rather than on overhead poles.
- The proposed substation site will be adequately screened due to existing vegetation and its significant distance from nearby roads/residences. However, if necessary, a planting plan will be developed and implemented to further minimize visual impact.

As required by FAA regulations, the Project will require warning lighting beacons on the nacelle of the turbine to prevent aircraft collisions. The number and spacing of FAA safety beacons has been limited to the minimum necessary to ensure public safety while minimizing visual impacts to the maximum extent practicable. In addition, to reduce visual impact, daytime lighting is not required. For the Allegany Wind Project, the FAA has determined that 14 of the 29 (48%) turbines will have warning lights. The lights will blink red at night, with the minimum intensity and duration required by the FAA to maintain public safety.

Based on the foregoing, the Project will have some unavoidable visual impacts on discreet portions of the surrounding landscape as the turbines will be prominent features on these areas in the landscape. While the limited size of the Project, location and design of the turbines and exclusive use of underground collection/transmission lines has reduced these impacts to the maximum extent practicable, the visual impacts of the Project cannot be entirely eliminated. Balancing the benefits of the Project against the confined and mitigated visual impacts discussed above, the Board concludes that these measures reduce or avoid adverse visual impacts from the Project to the maximum extent practicable.

Visual impacts as a result of Project construction will be temporary, such as dust generated by the movement of vehicles, tree clearing, earth moving, soil stockpiling, and road

building. The proposed Project layout was developed so as to minimize the need for tree clearing and new road construction. Due to the remote forested location of the Project Site, and activity/site disturbance associated with ongoing logging and oil/gas extraction activities, the majority of construction will not be visible to the public. During construction, visual impacts associated with working construction equipment will be minimized through adherence to a construction routing and sequencing plan that minimizes impacts on local roads and residences. A dust control plan and a sediment and erosion control plan will be implemented to minimize off-site visual impacts associated with construction activities. Any unavoidable construction-related visual impacts will be short term and cease once construction and site restoration are complete.

3.15 Shadow flicker

Shadow flicker is the alternating change in light intensity or shadows created by the moving turbine blades when back-lit by the sun. These flickering shadows may be perceived by some as annoying when cast on nearby residences; however, due to the turbines' low blade pass frequency, shadow flicker is not anticipated to have any adverse health effects (*e.g.*, trigger epileptic seizures) (*see* DEIS Appendix L). Turbine setback distances required by the Town Zoning Ordinance and established in the SEQRA record (minimum 2,500 feet from residences) will largely avoid the potential for impact from shadow flicker. At this distance of roughly five times the maximum turbine height (492 feet), blockage of the sun disk and shadow intensity/contrast are significantly reduced.

The DEIS contains a detailed shadow flicker analysis to determine which homes might be impacted by shadow flicker. This analysis used the established 30 hours per year as the standard to represent the threshold of potential impact (*i.e.*, the point at which shadow flicker

may be perceived as an annoyance). Industry standard indicates that shadow flicker at receptors located beyond 1,000 meters or 3,281 feet from a turbine is undetectable. For this Project, there are 487 receptors within that distance. Of the 487 receptors, there are no receptors that are predicted to exceed the 30 hours per year threshold. The receptor that is predicted to experience the greatest amount of shadow flicker will experience an estimated 13 hours and 16 minutes per year, and this is a conservative analysis that does not account for the screening effects of existing vegetation and/or structures. Therefore, in accordance with the results of the DEIS analysis, the Planning Board requires, as a condition, that no residence or business experience shadow flicker more than 20 hours per year. The Planning Board finds that adverse shadow flicker impacts are not anticipated.

3.16 Cumulative Impacts

The DEIS included a detailed discussion of potential cumulative impacts of the Allegany Wind Power Project with other proposed Projects in Cattaraugus County, including Cold Creek Spring Wind, Machias, and Ashford Wind Farm. In addition, as requested by NYSDEC personnel, an analysis of potential cumulative impacts resulting from the operation of the Bliss Windpark and Wethersfield Windpark, and construction and operation of the Allegany Windpark were also analyzed.

Based upon limited information available for the other three proposed wind projects in Cattaraugus County, the proposed project sites are estimated to be located from 20 to 30 miles from the Allegany Wind Project. The Bliss Windpark, Allegany Windpark, and Wethersfield Windpark are located 35 miles, 30 miles, and 40 miles, respectively, from the Allegany Wind Project. Therefore, cumulative impacts to Cattaraugus County residences from noise or shadow flicker are not anticipated, as none of the Projects overlap the Allegany Wind

Project. Due to distance, localized construction impacts such as noise and dust will not be cumulative among any of these projects. In addition, in the event that one or more of these projects are simultaneously visible, any associated impacts will be mitigated by distance (*see* the Visual Impact Assessment in DEIS Appendix K for additional information regarding the effects of distance on turbine visibility), and therefore cumulative visual impacts are not anticipated to be significant. Potential cumulative impacts could include construction-related impacts to area roads for any project not currently under construction or built, but this would only occur if two or more projects were constructed simultaneously and if they used the same construction delivery routes. Should this unlikely situation arise, coordination of transportation routes would be undertaken by the involved project developers/contractors to assure that the duration and extent of impact is minimized and that road repair/restoration work is accomplished at the appropriate time, and at no cost to the affected jurisdictions.

The most likely cumulative impact resulting from the operation of multiple wind power projects in Cattaraugus, Allegany, and Wyoming Counties would be avian and bat impacts. Based upon a comprehensive analysis conducted for other wind projects across the United States, avian collision with wind turbines is estimated to range from 2.19 (national average) to 1.83 (national average outside California) fatalities per turbine per year (Erickson et al, 2005 and NWCC, 2004, respectively). The DEIS identifies a potential total of 257 wind turbines in a three-county area (Cattaraugus, Allegany, and Wyoming Counties), which increases to 391 when considering the Sheldon and Stony Creek projects (as requested by public comments on the DEIS). With respect to avian impacts, based upon analyses completed in 2007 and 2008 for the Maple Ridge Wind Power Project (located in Lewis County, NY), avian collision with wind turbines is estimated to range from 5.67 to 9 fatalities per turbine per year

(Jain et al., 2007; Jain et al., 2008). Applying this range of impacts, the 391 total turbines could result in an estimated range of 2,217 to 3,519 cumulative avian fatalities per year. While 3,519 avian fatalities per year may sound large, it is a tiny fraction of the population that migrates through or resides in this area (see DEIS Appendix I).

With respect to bats, an analysis of bat fatalities at wind energy facilities across the U.S. resulted in an estimate of 3.4 bats per turbine per year (NWCC, 2004). However, because recent studies suggest that bat fatalities at wind farms may be higher in the eastern U.S., it is useful to again include results from the 2007 and 2008 Maple Ridge Wind Power Project bat fatality study. The estimates derived from these studies range from 8.18 to 18.53 bat fatalities per turbine per year (Jain et al., 2007; Jain et al., 2008). Applying this range to the 391 total turbines could result in an estimated range of 3,198 to 7,245 cumulative bat fatalities per year.

The turbine model that is proposed for this Project has no guyed wires or support structures that would increase collisions by birds/bats. The Applicant has committed to NYSDEC requested post-construction bird and bat monitoring study to assist in data gathering to better determine impacts to birds/bats due to wind projects and will investigate the need for, and the scope of, possible mitigation measures. Also, a work plan for a post-construction habitat displacement study will be submitted to the NYSDEC for review prior to Project implementation.

3.17 Alternatives

Pursuant to the requirements of SEQRA, the EIS record has evaluated Project Alternatives. SEQRA requires consideration of alternatives to assess ways of avoiding or minimizing environmental impacts associated with a proposed project. The DEIS for the Project

described the site selection process employed by Allegany Wind which consisted of a series of screening analyses fundamental to choosing and siting the Project Area. This process also entailed examination of a full range of environmental considerations. The Alternatives Analysis in the DEIS discusses alternatives for the following: Project Site, Project design/layout, Project size, technologies, construction phasing, and no action.

3.17.1 No Project (i.e. “No Action”) Alternative

The purpose of consideration of the “no action” alternative is to establish a baseline condition from which to assess impacts of the proposed Project. Some commenters have called for the Planning Board to reject the Project and all commercial-scale wind farms. Their specific comments have been addressed in the Responsiveness Summary of the FEIS, and elsewhere in these Findings. The Planning Board notes that while the no action alternative will eliminate the impacts from the Project, it will also eliminate the Project benefits which the Planning Board believes are important to the communities and region in which the Project is proposed.

In the Alternatives Analysis presented in the DEIS (Section 5.0), the Applicant focused on the macro-level environmental benefits, noting selection of this “no-action” alternative would preclude the development of a wind farm in an area with favorable wind resources and infrastructure to support such a project. Consequently, none of the potential positive environmental impacts associated with Project construction and operation would occur, including the significant socioeconomic benefits that would accrue to the area if the Project were developed. The no action alternative would fail to promote the State’s current goals, and ignores the State’s interests in fuel diversity for power production. The no action alternative would, therefore, negatively impact the State’s ability to meet its current energy goals. The no action

alternative also appears to be inconsistent with the Town of Allegany Zoning Ordinance II, which designates commercial wind energy facilities (WECS) as a special permitted use.

The Planning Board agrees that the macro-level benefits of the Project are important, but also notes the significance of their local benefits. Under the no action alternative, the impacts of the Project would be avoided, but the considerable positive aspects of the Project would also be lost. These local benefits include the economic benefits to local landowners who will derive income from the Project, and the school districts, Town of Allegany, and Cattaraugus County that will receive tax and non-tax revenues. Moreover, the Planning Board believes that appropriate mitigation has been presented for the potential environmental impacts to the maximum extent practicable. The turbines will be visible and this is a negative impact. Potential noise and other concerns are mitigated as discussed in these Findings. Most other impacts are limited to the construction period, and can be adequately mitigated. On the other hand, substantial benefits will accrue over the life of the facility. The Planning Board believes the Project benefits outweigh the negatives, and thus reject the no action alternative.

3.17.2 Alternative Project Site

The preliminary selection of wind turbine locations on a regional or statewide basis is constrained by several factors that are essential for the Project to operate in a technically and economically viable manner. Across New York State, the wind resource varies based upon a number of factors (and the interaction of these factors) including topography, prevailing wind direction, and location. The parallel ridgetops selected for the Project Site is suitable for commercial scale energy production, because of the presence of the wind resource, the presence of available land and willing landowners, the relative ease of access to the site, and the proximity and relative ease of connecting to the existing electric transmission grid. The Planning Board

concur that these factors combined make the proposed site desirable from the standpoint of commercial-scale wind power development. The Planning Board notes that where the sponsor is a private entity, site alternative analysis is properly limited to land controlled by the applicant.

3.17.3 Alternative Project Design/Layout

Several factors drive the selection of wind turbines for the Project, including market competition, market (supply) availability, industry trends, and importantly, site and wind resource suitability. The type of wind turbine generator proposed for the Project is a 2.5 MW, three-bladed, upwind turbine design with 100 meter hub height and 100 meter rotor diameter. The turbine design selected for this Project is in a category of turbine which is a common commercial scale turbine sold in world markets. Driven by both economics and technical change, the national and international trend in the industry is towards larger turbines, in the form of taller towers, larger rotor diameters, and nameplate capacities in the 2.X MW class. Typical proposed turbines have 78 to 100 meter tall hub heights and 77 to 112 meter diameter rotors. Higher hub heights generally equate to higher wind speeds while larger rotor diameters capture more of the available wind energy. The site specific wind resource characteristics are the drivers in selecting the optimal hub height, rotor diameter, as well as the turbine design to maximize wind energy capture and electricity generation.

Alternatively, if the Project specified the use of smaller turbine (lower hub height/smaller rotor diameter/smaller rated capacity) the number of turbines required to meet the Project's stated purpose, need and benefits would have to increase. The current Project parcels cannot accommodate a project of significantly greater than 32 turbines, due to on-site constraints, turbine spacing requirements, and setbacks. The Project Sponsor has already eliminated three turbines (currently 29 turbines proposed) to minimize impacts to area residents.

The use of a greater number of smaller turbines (lower hub height and/or smaller rotor diameter) may have the effect of reducing visibility, albeit negligibly, but would require more participating parcels. This would also result in additional impacts to other resources due to ground and vegetation disturbance (associated with more project roads, more project electrical lines, additional land disturbance). The larger number of turbines could cause increases in birds/bats mortality as well.

Accordingly, the Planning Board believes that a substitution of more towers with smaller turbines is neither an environmentally less damaging alternative nor in the Town's best interest because of the likely potential of actually increasing adverse impacts. The potential reduction in visual impacts from distant settings, which would likely not be a significant difference, is not in itself a sufficient justification for further consideration of this alternative.

Another possible alternative is the selection of larger wind turbine generators, with both a larger rotor diameter and a higher generator capacity rating, which could make it possible to generate an equivalent amount of clean power with a smaller number of total towers with fewer turbines. This might be desirable from a Project efficiency standpoint, however the impact reductions associated from this option are uncertain and likely to be incremental. Moreover alternatives must be assessed in light of the capabilities of the Applicant. From that perspective, for a project anticipated to be energized in 2012, Allegany Wind does not currently have access to any wind turbines larger than the proposed Nordex N100.

Through an analysis of site developability, landowner participation, wind resource assessment, environmental resource factors, and review of the site's zoning constraints, a proposed project layout was developed by Allegany Wind. The layout of 29 turbine sites as

proposed is satisfactory to the participating landowners and results in a carefully achieved balance of energy production and environmental protection. Significant relocation of any of the turbines to a site other than one of the identified 29 sites would have a ripple effect, in that the location of other turbines would have to be reexamined and possibly changed to maintain an efficient/workable Project design. Therefore, reduction of environmental impacts in one location could result in increased impact in another location and/or reduced power generation. Moreover, Allegany Wind does not have land control beyond its existing participating owners, which constrains its options for moving turbines to other parcels. In the context of these properties, taking into consideration required design parameters (*e.g.*, separation, wake loss, etc.), site limitations (slopes, and impacts discussed above) the alternative selected for the Project maximizes Project benefits while minimizing impacts. Moreover, in the case of visual impact, removal or relocation of one or two individual turbines from a 29-turbine array is unlikely to result in a significant change in Project visibility and visual impact from most locations.

The Planning Board believes the final proposed Project layout of electrical gathering lines, electrical interconnection, and access roads results in a carefully achieved balance of energy production and environmental protection. The Project's electrical gathering system will be buried along existing logging/oil and gas roads and proposed access roads to significantly consolidate and minimize impacts to on site vegetative communities. The Planning Board agrees that other potential alternatives including overhead gathering lines, or gathering lines that were not adjacent to access roads would result in additional impacts.

Allegany Wind evaluated two potential routes (Northern Transmission Route and Eastern Transmission Route) for the 115 kV line that will transmit the Project's energy to the existing power grid. The Northern Transmission Route would result in significant environmental

impacts, as the route would cross two class II NYSDEC wetlands (KC-10 and KC-11), a segment of the Allegheny River designated as NYSDEC class B, riparian wetlands along the Allegheny River, as well as be located in the vicinity of a significant natural community (Allegheny Oak Forest). The Eastern Transmission Route, proposed in the DEIS, avoids ecological impacts to the maximum extent practicable by using a portion of an abandoned National Grid right-of-way, along with existing logging/forest roads and minimizing wetland/stream crossings. However, because Allegheny Wind is proposing to bury the transmission line, there will be no permanent impacts associated with visibility and ongoing maintenance activities.

The Project is utilizing an extensively developed system of existing forest, oil and gas access roads in order to minimize ecological impacts. This existing road network significantly reduces the impacts of alternatively building all new project access roads.

3.17.4 Alternative Project Size

A project of significantly more, or fewer, turbines would pose challenges to the technical or economic feasibility of the Project, and would not meet the stated objectives of the Project. Various siting constraints dictate the size and layout of a wind power project. These constraints make a significantly larger number of turbines within the Project site highly unlikely. A larger project would result in location of wind turbine towers in areas that do not have ideal wind resources, and which may not have willing landowner participants. This alternative could also require installation of more turbines in areas with more sensitive resources and/or higher population density. Although a larger facility might theoretically have more economic value, the current turbine setbacks would not necessarily decrease and greater environmental impacts would not justify the marginally increased power generation potential of the Project. As

previously discussed, the initial layout included 32 turbines; however, this was reduced to 29 turbines in order to minimize potential impacts.

3.17.5 Alternative Technologies

Other renewable sources of generation, such as hydroelectric plants, solar power, and hydrogen, have their own constraints. Like wind power projects they are also resource dependent. Hydroelectric can only be developed in places with appropriate water volumes and topographic conditions (which do not exist within the Project Site). Due to current incentive and cost constraints, utility-scale solar power is not likely feasible in an area such as upstate New York, where such an alternative energy source is not economically feasible. Currently, wind is the only renewable energy source that can help meet energy needs in a technologically and economically efficient manner. It can also do this without the emission of greenhouse gases and other environmental impacts that alternative power generation technologies would create. Finally the Applicant's land use agreements with participating landowners allow development of wind turbines and associated infrastructure and do not permit installation of other technologies.

3.17.6 Alternative Construction Phasing

Construction phasing over an approximately one-year period is proposed as a mitigation measure to limit construction-related impacts by keeping the period of the construction impact on the community as short as possible without creating an extreme overload on local resources. Transportation, construction noise, dust generation, and other impacts would thus be reduced to only one or two construction seasons. Allegany Wind believes a one-year construction plan is preferable from both an environmental impact and a construction logistics perspective, and the Planning Board concurs.

4.0 COMPLIANCE WITH SITE PLAN AND SPECIAL USE PERMIT REQUIREMENTS

The Planning Board, in addition to its environmental review responsibility as Lead Agency under SEQRA, has reviewed the Project Sponsor's application for a Special Use Permit and Site Plan approval in light of the criteria in the Town of Allegany Zoning Ordinance II. The Planning Board hereby finds and determines, for the reasons stated in this Statement of Findings and Decision (whether or not specifically stated below), that the Special Use Permit should be issued and the Site Plan approved.

4.1 Special Use Permit

Section 8.04 of the Town of Allegany Zoning Ordinance II provides that the Planning Board shall not authorize any Special Use Permit, its renewal and/or its modification unless it finds that the proposed action is in accordance with certain enumerated general standards and special conditions, and complies with other applicable provisions of this Ordinance II. In other words, the Planning Board may not approve an application for a Special Use Permit unless it reasonably determines that the application meets the criteria in Section 8.04, as well all other applicable sections of the zoning ordinance. The Planning Board has reviewed the Application for a Special Use Permit against each criterion in Zoning Ordinance II, and has made the following determinations:

4.1.1 Section 8.04(A)(1)

Zoning Ordinance II requires that a proposed special use be in harmony with the Town's adopted Planning and Development Policies, its comprehensive planning process, and with the general purposes and intent of the zoning ordinance. As a first point, the Board notes that wind farms are an allowable special use in the Town's Agriculture and Forestry (A-F)

Zoning District. Creation of a special use is a determination by a Town's legislative body that a use is compatible with the community.

The Town's Planning and Development Policies discuss the Town in terms of four geographical areas: West, East, North, and South. The Project Site is located within the South area of the Town, in which the development goal is to "promote continuing or expanded farm use and industrial uses wherever possible, work to support the remaining oil/gas production and timbering industries, and promote a balanced mixture of single family residences." The Planning Board finds that the Project will be in harmony with the Planning and Development Policies. For background, as noted in the DEIS, there has already been a significant history of oil/gas production and timbering industries in the South area of the Town. Only very minor changes in land use within the Project Site are anticipated as a result of Project implementation, the impacts of which are mainly visual. Other than occasional maintenance and repair activities, the Project should not interfere with on-going land use within the Project site area. The Project is consistent with land uses within the Project area and is consistent with the Town's comprehensive planning process.

The general purposes, intent, and objectives of Zoning Ordinance II are enumerated in Section 1.06. The Planning Board finds that the Project is in harmony with Section 1.06 for the following reasons (together with other reasons stated elsewhere in this Statement of Findings and Decision): (1) the Project is in harmony with the intent of the Zoning Ordinance II to regulate the use of land for trade and industry and to allow all land use activities that comply with applicable zoning regulations; (2) the Project's mitigation measures will further the Zoning Ordinance's intent that the public health, environment, safety, and general welfare of the people be protected to the fullest extent permissible; (3) the Zoning Ordinance's purpose—to

provide a legal tool through which the community can guide future growth and land development in an orderly fashion—is being fulfilled by the Planning Board’s review of the Project’s Site Plan and Special Use Permit applications; and (4) the Project’s mitigation measures ensure that the Zoning Ordinance’s objectives are complied with by limiting adverse impacts to the environment to the maximum extent practicable.

4.1.2 Section 8.04(A)(2)

A specially permitted use must not tend to depreciate the value of adjacent property. Also, a Special Use Permit shall only be granted when the proposed use is of such character, size, and location that in general it will be in harmony with the orderly development of the district in which the property is situated, and will not be detrimental to the orderly development of adjacent districts.

As discussed above in Section 3.4 of this Statement of Findings and Decision, the Planning Board reviewed studies evaluating the effect of wind development on local property values. For reasons stated therein, the Planning Board finds that the Project will not have an adverse impact on property values of adjacent property. While there were comments that property values would decline, there was no evidence presented to support these assertions.

The Planning Board also finds that wind development is in harmony with the orderly development of the district in which the Project Site is situated; the Project will not be detrimental to the orderly development of adjacent districts. The Project will be located mostly within the A-F Agricultural Forestry Zoning District (a small portion of the transmission line route is located in the Floodplain Overlay District). Zoning Amendments, adopted on August 28, 2007, added WECS as a specially permitted use in the A-F Zoning District. The Project is an

allowable use. Additionally, all WECS must be located within a Wind Energy Overlay Zone, which can only be approved by the Town Board after Special Use Permit and Site Plan approval.

4.1.3 Section 8.04(A)(3)

The Planning Board finds that the Project will not alter the essential character of the neighborhood, nor will it be detrimental to the residents thereof. The Project Site has a rural and low-density character, with forestland and natural gas extraction as the dominant land uses. Natural gas wells and the associated network of access roads are located throughout most of the Project site where turbines will be located. The history of the Project Area reflects a long association with energy production. Small rural residential neighborhoods abut or are near the turbine site, some of which contain agricultural land. The essential character of the neighborhood is rural, agricultural, forested land. Construction of the project does not alter that essential character. While there will be visual impacts that will be introduced into the landscape, the rural character is unaltered. Moreover, the Project has been designed to avoid impacts to agricultural lands to the maximum extent practicable.

4.1.4 Section 8.04(A)(4)

A special use must not impair the productive use of nonresidential districts. The Project Site is located in the A-F District. As referenced by the Town's Planning and Development policies, the non-residential use of property in this district has been agricultural use, oil/gas production, and timbering activities. There is significant separation between the turbine sites and non-participating properties. The Planning Board finds that the Project will not impair these uses. As noted in the DEIS, dairy farming, timbering, and oil/gas production has been in decline. In any event, the Project is consistent with these uses. The Project was designed to avoid impacts to agricultural lands to the maximum extent practicable, oil/gas

production and timbering activities may be slightly impacted because of construction of the Project, but any impact will not be significant.

4.1.5 Section 8.04(A)(5)

The Project will not create a hazard to health, safety, or general welfare and will not be detrimental to the public convenience and welfare. While construction of large-scale generating facilities presents potential impacts on public safety, the Planning Board has considered these impacts and determines that in light of mitigations measures discussed in Section 3.9 above, the Project will not create a health, safety, or general welfare hazard. For example, the Project Sponsor is required to have a Fire Protection and Emergency Plan to ensure fire safety. As discussed in the DEIS, turbine design and technology will mitigate potential safety issues from ice shed, tower collapse/blade throw, and lightning strikes. With regard to noise, the Planning Board has reviewed several studies, referenced in the DEIS and updated in the FEIS, regarding health effects of wind turbines, and the FEIS addresses public comments on this issue. After reviewing all the information presented, the Planning Board finds the studies referenced in the DEIS and FEIS reliable, and confirms that there is no evidence of adverse public health effects from low frequency sound from wind turbines.

4.1.6 Section 8.04(B)(1)

As a special condition to Special Use Permit approval, Site Plan approval is required for the Project. The applicant has submitted an application for Site Plan approval, in accordance with the requirements of Article IX of Zoning Ordinance II. The Planning Board has reviewed the proposed Site Plan, which contains the requirement elements of the Zoning Ordinance II necessary to aid the Planning Board's evaluation of the Special Use Permit

application. A discussion of the criteria for approving the Site Plan is found in Section 4.2 below.

4.1.7 Section 8.04(B)(2)

All special uses shall comply with the requirements and procedures for performance standards and environmental impact reviews in Article V of Zoning Ordinance II. In addition, a special use shall not be more objectionable to nearby properties than would be the operations of any permitted use.

Section 5.14 of Zoning Ordinance II enumerates the Town's performance standards for commercial and industrial uses. The Planning board finds that the Project complies with the performance standards in Zoning Ordinance II. It should be noted that the intent of the performance standards is, among other things, to provide and protect a productive operating environment for commerce and industry within the Town. First, the Project cannot be considered a nuisance, and cannot reasonably be expected to be injurious, dangerous, hazardous, noxious, or otherwise objectionable (*e.g.*, noise, vibration). As discussed in this Statement of Findings and Decision, and in the DEIS and FEIS, there will be unavoidable impacts associated with this Project; however, through mitigation, these impacts have been avoided to the maximum extent practicable. The Planning Board specifically focused on safety issues and has determined that the Project design and other mitigation measures will avoid or reduce these impacts to the maximum extent practicable. (*See* Section 3.9 of this Statement of Findings and Decision). Second, the Project will meet all environmental standards and requirements as are established by federal, state, and local law. Third, the performance standards germane to the Project (water pollution, fire hazards, noise, glare, vibration, and erosion) are met through SEQRA mitigation.

Section 5.21 of Zoning Ordinance II requires that all applications for zoning approvals be subject to the requirements of SEQRA. The Planning Board, acting as Lead Agency, initiated the SEQRA review process that is culminated by this Statement of Findings and Decision; therefore, the Planning Board finds that the environmental impact review requirements of Article V have been satisfied.

4.1.8 Section 8.04(B)(3)

No permits are required from federal, state, or local governmental agencies prior to approval by the Planning Board.

4.1.9 Section 8.04(B)(4)

There is no existing zoning violation at the property that would prevent the Planning Board from approving the Project Sponsor's application for a Special Use Permit.

4.2 Site Plan Approval

The criteria that the Planning Board must follow for approving site plans is found in Section 9.06 of the Town of Allegany Zoning Ordinance II. The Planning Board reviewed the Site Plan to insure its conformance with all other applicable provisions of Zoning Ordinance II. Additionally, the Planning Board reviewed the Site Plan, following the General Standards found in Section 9.06(B) of Zoning Ordinance II. After review of the Site Plan submitted by the Project Sponsor, the Planning Board finds that it is in conformance with Zoning Ordinance II, and all other applicable laws. It also finds the Site Plan meets the General Standards outlined in Section 9.06(B) of Zoning Ordinance II.

4.3 Section 5.25(C)

The Town of Allegany Zoning Ordinance II requires the Planning Board to consider criteria for WECS in addition to the criteria contained in Article VIII and Article IX.

(1) Setbacks. The Project complies with all setback requirements in Zoning Ordinance II, or has obtained the required easements.

(2) Noise. Section 5.25(C)(2) of Zoning Ordinance II provides that a Commercial WECS shall not be approved unless the applicant demonstrates that the proposed project complies with the noise requirements specified by said section. Section 5.25(B)(3)(h) of Zoning Ordinance II required the Project Sponsor to submit a noise analysis to the Planning Board; it also enumerated the requirements of the noise analysis. In addition to information provided by the Project Sponsor, the Planning Board hired its own expert engineers to conduct reviews of the DEIS and FEIS, and to conduct independent sound studies. The Planning Board's studies included Ambient Sound Level Assessment and Noise Impact Modeling. The Planning Board finds that these analyses comply with the Zoning Ordinance's requirements. The Planning Board also adopts as a permit condition that Project sound should not exceed 40dBA at residential structures on non-participating properties. This permit condition is more stringent than Zoning Ordinance II's requirements.

(3) Noise and Setback Easements. The Project Sponsor has complied with all applicable requirements for noise and setback easements.

As discussed above, the Applicant has provided a report demonstrating that updated sound power level information for the Nordex N100 as well as sound dampening measures at Turbine 4E will bring the Project into full compliance with the 40dBA and 45dBA

thresholds. (See Exhibit A of these Findings). The Town's consultant, CRA, has run an independent model based on the updated sound power level for the Nordex N100 including the reduced sound power level at Turbine 4E resulting from sound dampening at this turbine. CRA has confirmed, using 1.5 meters as the height of the receptor and using the full power mode of 106 dBA, all parcels shall comply with the 40 dBA at non-participating residences and that only one parcel (tax map # 102.001-1-25) will be non-compliant with the 45 dBA zoning ordinance standard at approximately 149 feet. CRA also concurs that when using the reduced power mode of 104 dBA at Turbine 4E only, the entire project is in compliance with the 45 dBA requirement at the property line. This evaluation confirms the conclusion in the Applicant's report. Accordingly, to the extent Turbine 4e is approved, that approval is subject to the condition that it not operate at a power mode exceeding 104 dBA.

As noted in the FEIS, the Project meets another requirement of the Local Law, Section 5.25(C)(2)(a)(ii)—that Project sound should not exceed ambient sound by more than 3 dBA at sensitive receptors within 2,500 feet of Project turbines or other receptors identified by the Planning Board—due to the fact that there are no sensitive receptors within 2,500 feet of Project Turbines and the Planning Board has not identified other receptors under this section.

Accordingly, the Planning Board concludes that, based on the updated Sound Power levels, the Project, without further easements or controls, will comply with the 45dBA/40dBA standards with one exception. Turbine 4E will cause an exceedance of the 45dBA standard up to 149 feet within the property line of a single nonparticipating property. Consequently, unless or until the Applicant is able to secure a sound easement for this single property affected by Turbine 4E, the Applicant will implement sound dampening at Turbine 4E (*i.e.* will not operate this turbine at a power mode exceeding 104 dBA) in order to comply with

the requirements of Section 5.25(C)(2) of Zoning Ordinance II on this non-participating property.

(4) Interference with television, microwave, and radio reception. The required information was provided by the Project Sponsor and was reviewed in the DEIS and FEIS. The Planning Board finds, based on the specific studies and conclusions included in the DEIS/FEIS, that no impacts on microwave paths, government transmitters, off-air television, AM and FM broadcast, mobile phone services, land mobile radio coverage, or OE/AAA are reasonably anticipated. Mitigation is required in the event of any unanticipated impacts.

(5) Interference with aviation navigational systems. The FAA conducted an obstruction evaluation/airport airspace analysis aeronautical study based on parameters of the Project. The FAA issued its determinations relative to the Project on January 24, 2010, and all turbines are classified as “No Hazard.” The Planning Board determines that the Project complied with this criterion.

(6) Safety and security requirements. The Planning Board finds that the Project meets safety shutdown, grounding, wiring, ground clearance, climbability, signage, and security requirements.

(7) Ice throw. As discussed in Section 3.9.2 of this Statement of Findings and Decision, ice buildup slows a turbine’s rotation and will be sensed by the turbine’s computer controls, causing the turbine to shut down until the ice melts. The general public will not be at risk from falling ice, because the Project is located on private property and access by the general public is restricted. In addition, as discussed in Section 3.9.2, the Planning Board will require the Applicant to post signs for snowmobilers and consult with snowmobile clubs regarding the

turbine locations. The Planning Board finds that the minimum setback distance of 758 feet between proposed turbines and public roads and non-participating property lines, and the minimum setback of 2,500 feet between the proposed turbines and permanent residences adequately protect nearby residents, snowmobilers, and motorists from falling ice of any significant size.

(8) Fire hazard protection. As required by the Zoning Ordinance II, the Project Sponsor is required to have a Fire Protection and Emergency response plan which the Planning Board has determined minimizes or avoids fire hazard impacts to the maximum extent practicable.

(9) Impact on wildlife species and habitat. Section 3.11 of this Statement of Findings and Decision discusses the impact on wildlife species and habitat. Relying on the DEIS and the FEIS, the Planning Board has determined the mitigation measures discussed in Section 3.11 minimize or avoid potential impacts to the maximum extent practicable.

(10) Visual impact. The project complies with all visual impact requirements in Section 5.25(C)(10).

(11) Shadow flicker. The DEIS includes a detailed shadow flicker analysis. Turbine setback distances required by the Town Zoning Ordinance II and established in the SEQRA record (minimum 2,500 feet from residences) will largely avoid the potential for impact from shadow flicker. At this distance of roughly five times the maximum turbine height (492 feet), blockage of the sun disk and shadow intensity/contrast are significantly reduced. Based upon the zoning requirements and the shadow flicker analysis in the SEQRA record, the Planning Board finds that adverse shadow flicker impacts are not anticipated; therefore, the

Planning Board determines that the Project has been designed in such a way to minimize shadow flicker onto adjacent residences. Moreover, the Planning Board established a standard that no residence or business can experience shadow flicker above 20 hours per year.

The Project Sponsor has met the criteria in Section 5.25(C) of Zoning Ordinance II.

4.4 Conclusion

For the reasons stated herein, in conformance with the requirements of Zoning Ordinance II, the Special Use Permit should be issued and the Site Plan Approved.

5.0 RESPONSE TO THE TOWN BOARD'S REFERRAL REGARDING WIND ENERGY OVERLAY DISTRICT

The Applicant, as required by Zoning Ordinance II, applied to the Town Board for a rezoning; the Applicant has requested that the Town Board create a Wind Energy Overlay Zone, wherein Commercial WECS may be constructed. In accordance with Section 12.02 of Zoning Ordinance II, the Town Board referred the application to the Planning Board.

The purpose of the Wind Energy Overlay (WE) District is to provide a location for the placement of Commercial WECS, consistent with the intent and purpose of Section 5.25 of Zoning Ordinance II. Section 5.25 recognizes that wind energy is an abundant, renewable, and nonpolluting energy resource of the Town. Section 5.25's purpose is to ensure the development of WECS will have a minimal impact on adjacent properties and will protect the health, safety, and welfare of residents of the Town. As discussed in these Findings, the applicant has mitigated potential adverse environmental impacts to the maximum extent practicable. The Applicant has complied with the requirements in Section 5.25 and the criteria

for receiving a Special Use Permit and Site Plan approval. As a result, the intent and purpose of Zoning Ordinance II would be furthered by approving the rezoning application. For these and other reasons discussed in this Statement of Findings and Decision, the Planning Board recommends that the Town Board approve the rezoning application.

CERTIFICATION

The respective members of the Allegany Planning Board and their legal and technical consultants and experts collectively have spent hundreds of hours in the review of the Draft and Final Environmental Impacts Statements and accompanying permit applications. During the Application review over many months, the Planning Board has reviewed hundreds of pages of written submissions and received hours of oral comments. They have carefully reviewed, questioned and analyzed with the Town's environmental and legal consultants, the various impacts of, alternatives to and potential mitigation measures for the respective Project.

The Planning Board has relied upon numerous experts and State agencies in their review. While the Planning Board recognizes that qualified experts on any topics may differ in their conclusions, and in particular, may differ in the judgments employed during analysis, particularly on such subjective matters as visual or aesthetic impacts, the Planning Board notes their experts were not contradicted on any significant point during the review. The Planning Board also understands that while wind energy projects are a developing industry in those areas in New York State bestowed with wind resources, and that opinions vary widely over the advantages and disadvantages of this new form of energy production, the Planning Board has been careful to make its decision based on documented benefits and impacts.

Members of the Planning Board are familiar with areas of the Town where Project elements will be sited as well as areas surrounding the Project Site. Based on their significant review and their work with the Applicant, the Planning Board believes that the potential significant adverse environmental impacts have been either avoided or mitigated to the maximum extent practicable as outlined in earlier sections of these Findings. Allegany Wind has been flexible in their design, seeking to avoid impacts wherever possible, and agreeing to

reasonable mitigating conditions that affect both construction and operation identified by the Planning Board, their consultants, as well as other agencies and members of the public.

The Planning Board also notes that while the public benefits from the Project achieve important State and federal policies promoting clean, renewable energy sources, there are very real local benefits in the form of increased revenues for the municipalities, school, and local landowners, as more fully outlined in the Public Benefits section of these Findings. The children of the community will especially benefit from the negotiation of benefits in the form of PILOT payments to the school district.

On balance, and after careful consideration of all relevant documentation and comments, the Planning Board believes that it has more than adequate information to evaluate all of the benefits and potential impacts of this Project, as a basis for considering the pending permit applications and associated agreements.

Therefore, in accordance with 6 NYCRR § 617.11, SEQRA's required balancing of potential for significant adverse environmental impacts against social, economic and other essential considerations, the Town of Allegany Planning Board hereby certifies:

1. They have fully considered the relevant environmental impacts, facts and conclusions disclosed in the Final Environmental Impact Statement prepared for the Allegany Wind Power Project;
2. They have weighed and balanced the relevant environmental impacts with social, economic and other essential considerations;
3. They have provided in these Findings the rationale for the Planning Board's decision to approve issuance of the pending permit applications;

4. That the requirements of 6 NYCRR 617 have been met, including the preparation and adoption of the DEIS and FEIS and these Findings; and
5. That consistent with social, economic and other essential considerations from among the reasonable alternatives available, Planning Board approval actions will avoid or minimize adverse environmental impacts to the maximum extent practicable, by incorporation as conditions to the permits or agreements, those mitigating measures which were identified.