Supplement to the Application for a Certificate of Environmental Compatibility and Public Need

Eight Point Wind Energy Center

Towns of Greenwood and West Union, Steuben County, New York

Case No.: 16-F-0062

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Contents

Tables

Attachments

Attachment D. CD containing AutoCAD Drawings

Attachment E. Revised Appendix 11-3. General Index and Details

Attachment F. Revised Appendix 11-4. Turbine Sites and Access Roads

Attachment G. Revised Appendix 11-5. Collection System Routes

Attachment H. Figure 11-1. Temporary Construction Access Roads

Attachment I. Blattner Quality Assurance Plan - Confidential

Attachment J. NIA Figure 9-2 Map 7 revised

Attachment K. NIA Figure 9-2 Map 18 revised

Attachment L. Updated Noise Summary Tables

Attachment M. NIA Figure 8-5, 8-6, 8-7

Attachment N. Electronic Noise Files –Confidential

Attachment O. Uncorrected CONCAWE Hourly Results

Attachment P. ISO Corrected Results

Attachment Q. Noise-related GIS Files

Attachment R. Figure 22-4. Identified Invasive Species

Attachment S. Avoided Emissions Method Description

Attachment T. Revised Appendix 22-3. Invasive Species Control Plan

Attachment U. Potential Vernal Pool Figure Set

Attachment V. Potential Vernal Pools Photolog

Attachment W. Revised Figure 23-1. Groundwater Aquifers and Recharge Areas

Attachment X. Table 23-2. Impacts to Waterbodies revised

Attachment Y. Viewshed Maps, Figure 7 and Figure 8

Attachment Z. Revised Figure 4-2. Existing Utility Locations

Attachment AA. Revised Appendix 35-1. Electric and Magnetic Field Calculation Report

Attachment BB. Additional Water Well Surveys

In response to the January 29, 2018 letter received from the Board on Electric Generation Siting and the Environment (Siting Board) regarding the Application submitted by Eight Point Wind, LLC (Applicant) pursuant to N.Y. Public Service Law (PSL) 164 for a Certificate of Environmental Compatibility and Public Need for the Eight Point Wind Energy Center Project (the Project), supplemental information is provided below and attached. The organization of this document (hereafter referred to as the "Supplement to the Application") is consistent with the Siting Board's January 29, 2018 letter and presents each comment followed by the Applicant's response to the comment.

1000.7 – Publication and Content of Notices

Section 1000.7(b)(2) states that a copy of the notice regarding the filing of the Application will be served on each member of the state legislature in whose district a portion of the Facility is proposed. The Applicant served a copy of the notice on Assemblyman Palmesano of the 132nd District. However, the host communities are in District 148, under Assemblyman Joseph Giglio. His contact information is below:

District Office
700 West State Street
Olean, NY 14760
716-373-7103

Albany Office
LOB 439
Albany, NY 12248
518-455-5241

> **Response:** Comment noted. Copies of the notice regarding the filing of the Application were sent to Assemblyman Joseph Giglio (District 148) at the above noted addresses on February 14, 2018, as requested. The notice, letter, and affidavit of service are included in Attachment A, appended hereto.

1001.3 - Exhibit 3: Location of Facilities

16 NYCRR 1001.3(a) and 1001.3(a)(4): Stipulation requires that the Applicant provide the "[m]ost recent USGS maps (1:24,000 topographic edition)" for mapping the facility's location and interconnection line location. Application uses 1976 edition of quadrangle mapping rather than recent 2016 edition. Figures using the most recent mapping must be provided.

> **Response:** Comment noted. The original map included in the Application used the Rexville 1976 and the Greenwood 1978 quadrangles. The quadrangle mapping has been updated to the 2016 edition. Updated Figure 3-1 is included in Attachment B.

1001.5 - Exhibit 5: Electric System Effects

1001.5(j) - The Applicant did not provide inspection and treatment schedules regarding vegetation management, as required.

Response: Comment noted. The inspection and prospective maintenance of vegetation around the substation and also along all overhead line right-of-way will be addressed routinely on a weekly level throughout the year. Likewise, inspections for maintenance and potential treatment of wind turbine pad areas, access roads and above-ground collection splice boxes would also occur but on a monthly timeframe.

Several intangible factors must also be considered when implementing the vegetation management plan. These factors include the characteristic differences between vegetation species (variable growth rates and quantities), annual climatic shifts impacting growing seasons, the time elapsed since last management of a specific area, the varying industry-approved standardized treatment regimens for safe herbicide application (where approved), and also vegetation impacts incurred during extreme weather conditions. As such, it is imperative that the vegetation management plan for the Project includes a dynamic adaptability in the application of management protocols to respond safely and appropriately to the aforementioned situations. In terms of safety, such circumstances will take priority over maintenance/treatments scheduled based on normal circumstances.

Under nominal conditions, any low-lying growth and vegetation extending into the clear cut boundaries of the Project will be checked regularly for potential impacts to infrastructure throughout the year. As stated in Exhibit 5(i)(2)(iii) of the Application, select Operations and Maintenance staff will be tasked with routine patrols and infrastructure status reporting. As part of this protocol, these staff members will also have the responsibility to report on the status of vegetation growth within these areas. Routine patrols of Project infrastructure will occur weekly around the substation and also along all overhead line right-of-way and will occur monthly in wind turbine pad areas, access roads and above-ground collection splice boxes. Inspections may occur from a vehicle or on foot to evaluate conditions. Any vegetation management response from such inspection has the potential to occur on a weekly or monthly level as well under nominal conditions to allow for the safe operation of the facility. Periodically, the management plan will be reviewed and adjusted for changing condition of the vegetation.

As stated previously, flexibility is an important aspect of the vegetation management plan. Such a strategy affords the Applicant multiple options to employ the most effective methods of vegetation control in a given area. Properly implemented, the vegetation management plan will apply a site-specific methodology that encompasses a range of industry-established best practices. One of these practices is adhering to the varying industry-approved standardized treatment regimens for the safe application of herbicide products (where approved). The Applicant will follow industry-approved guidelines for the application of herbicides to mitigate over-application and the associated impacts which could occur to the surrounding environment. In instances where herbicide application is proposed and approved for the management of vegetation in the irregular circumstances mentioned above, herbicide application will occur where use corresponds with the industry-approved application window. Intrinsically, specific documentation of all herbicide application will occur during the operation of the facility.

Documentation will indicate the time and location of application and reference previous application information to allow for informed, continual use of herbicides within appropriate application windows.

1001.5(k) - The Applicant did not provide procedures regarding the sharing of above ground facilities with other utilities. Please provide such information or a statement that the Applicant does not propose to allow sharing.

Response: Comment noted. The Applicant does not propose to allow the sharing of above ground facilities with other utilities, nor does the Applicant propose to allow the sharing of above ground resources proposed to be constructed as part of the Project.

1001.6 - Exhibit 6: Wind Power Facilities

Stipulation 1001.6(a) calls for a statement of setbacks of turbines from areas of public gathering (among other features), explaining the rationale for setback distances as required or recommended by the manufacturer's specification, the Applicant, and any local ordinance or law. This information is not provided in the Application for areas of public gathering. In order to rectify this deficiency, provide this required information. If there are no such areas located in the Project area, then provide this reason as an explanation.

Response: All turbines are proposed to be located such that they are sufficiently set back from areas of public gathering. Therefore, there are no areas of public gathering within 1,400 feet of a wind turbine (in accordance with setback distances as required or recommended by the manufacturer's specifications, the Applicant, and applicable local ordinances or laws). The West Union Mennonite Church (located at the intersection of Squab Hollow-Wileyville Road and Saunders Road) is the closest area of public gathering within the Project Area to a wind turbine (~ 3,000 feet from Turbine 27).

With respect to Section 1001.6 of the Application, there is an inconsistency regarding the turbine to property lines setbacks proposed by the Applicant. Table 6-1 on Page 2 of Exhibit 6, indicates that the Applicant's applied setback will be 1.2 times the turbine height. Similarly, page 3 of Exhibit 6 notes that the Applicant will utilize a standard setback of at least 1,400 feet from nearest off-site residence and 1.2 times the turbine height from roads, property lines, and structures. However, Section 10001.6(b) states that the Applicant's standard setback distance will be a setback of blade length from a property line (unless property owner(s) approve of less). Furthermore, drawing G-1 of Appendix 11-5 of the Application notes that the setback for “non-participating and competition land parcels” is equal to 224 meters (calculated as 1.2 times the tip height plus 10 meters). Provide an explanation as to which statement is correct regarding turbine setbacks from property lines; and explain the term “competition land parcels.”

Response: Comment noted. For clarification, the Applicant's applied setback from a turbine to an adjacent *participating parcel’s* property line is 1.2 times the turbine height. In addition, the setback for *“non-participating and competition land parcels”* is 1.2 times the turbine tip height plus 10 meters. The additional 10 meters was added voluntarily by the Applicant as an additional conservative buffer.

When mentioning “competition parcels” in the Application, the Applicant is referring to parcels of land within the Project Area that are under lease by Invenergy, which apparently is seeking to develop the Canisteo Wind Energy Center in two of the same towns as the Applicant (Greenwood and West Union).

If exceptions will be made, as noted in one location in the Application, then 1001.6(b) is deficient. For each exception to the setback standard, provide potential locations, setback distances, and rationale for not complying with setback recommendations/requirements regarding property lines. If no exceptions will be made, please clarify.

Response: Comment noted. There will be no exceptions to the setback standards as the Applicant has sited turbines in accordance with setback distances as required or recommended by the manufacturer's specification, the Applicant, and applicable local ordinances or laws.

DPS advises that associated distances of the 1.2 and 1.5 times tip height should be labeled in the legend for Figure 6-1 (Turbine Setbacks Mapping).

Response: The legend in Figure 6-1 has been updated to reflect the associated distances of 1.2 and 1.5 times tip height. Updated Figure 6-1 is included in Attachment C.

Section 1001.6(c) requires that documentation be provided in the Application regarding the status and results of third-party review and certification (type and project) of wind turbines proposed for construction and operation of the electric plant. No documentation regarding the results of third-party review is included in the Application. If no turbine has been selected, provide this information for all possible turbine models discussed in the Application.

Response: Comment noted. The Applicant has not made a final determination of the turbine model or manufacturer, but is including two types of turbine models in this Application determined to be suitable for the Facility. The Applicant may select a turbine model not presented in this Application, provided that the turbine total height and sound power level output of the selected turbine is not greater than those analyzed in this Application. Turbine models will be independently certified by an accredited certification organization and the Applicant expects to receive such Declaration of Conformity certification by Q3 2018. The Applicant will ultimately select a turbine that has received third party certification, and will submit the information to the Siting Board when it becomes available.

1001.11 - Exhibit 11: Preliminary Design Drawings

1001.11 - The filed Application does not contain a CD-ROM with AutoCAD files of drawings. To correct this deficiency, provide the required files to DPS.

Response: The preliminary design drawings have been updated in accordance with the comments as identified in this response, and the CD with AutoCAD files of the updated drawings for DPS use are included in Attachment D.

1001.11(a) - The following features are not included in the submitted preliminary design drawings included in Appendix 11-5:

i. Turn-around areas to be used during turbine deliveries: A detail of this feature is provided on Drawing D-7; however, locations of turn-around areas are not shown on the site plans.

Response: Turn-around detail has been deleted. The Applicant does not anticipate the need for turn-around areas. Access to the turbine sites have been planned out and will not require turbine delivery vehicles to reverse direction. Once turbine components are delivered to the turbine sites, the delivery trailers will be broken down, significantly reducing the turning characteristics and improving ground clearance requirements. Any broken down vehicle will have adequate room in the tower assembly area to maneuver toward the egress.

ii. Outlines of ROW for all cable installations: Circuit maps C-0 through C-29 exhibit dashed lines, however, the line type is not labeled in the legend or other key label areas of the drawing set. Provide an indication of the ROW or provide a label in the legend noting that these lines represent the ROW.

Response: The circuit maps C-0 through C-29 include the limits of the planned ROW. The legend and line work has been modified to better define the work limits, and these modifications can be seen in Attachment G.

iii. Proposed locations that will utilize trenchless methods of cable installation (including laydown areas and approximate distances of installation): Page 6 of Exhibit 21 notes that "[t]he Applicant is currently locating and designing all specific target HDD locations…. Upon finalization of the target HDD [Horizontal Directional Drill] locations, site conditions, sensitive site avoidance and mitigation, installation technique, and staging area descriptions will be thoroughly summarized and communicated to the appropriate agency personnel." Preliminary locations and distances of any proposed HDD installations are not included in the preliminary design drawings included in Appendix 11-5.

Response: Trenchless method locations have been added to the collector system network, and are included in Attachment G of this Supplement to the Application.

iv. Operations and Maintenance (O&M) building, any proposed septic system(s), and parking area: There is a plan of this area included in the preliminary design drawings; however, there is no parking lot/area shown for workers, visitors, etc.

Response: The O&M building layout plan has been modified to include an indication for employee and visitor parking. Similarly, the planned laydown yards also include where our employees are expected to park their personal vehicles. Also, these laydown yard parking areas are sized to accommodate the expected contractor work force at each location. The location, size and orientation of the planned parking considers safe traffic flow, material storage and delivery requirements within the laydown yard. The selected construction contractor may

modify these plans to accommodate his work flows, equipment and specific laydown yard organization.

v. Outline of switchyard area: This feature is not shown on any of the preliminary design drawings.

Response: This facility does not include a Switchyard. The collector substation outline drawings are included under Exhibit 11-3 (Drawings SP-1A, SP-1B, SP-2A, SP-2B, SP-3). Duplicates of these drawings will be provided under Attachment E.

In order to correct these deficiencies, provide updated preliminary design drawings incorporating the above noted features per Stipulation 1001.11(a).

Response: The updated preliminary design drawings are included herein as Attachment E, Attachment F, and Attachment G.

Stipulation 11(a)(v) states the Applicant will show temporary grading for construction purposes (40' wide road) along with the final grading (16' wide road) on the preliminary design drawings. Preliminary Design drawings only depict final grading. Provide revised preliminary design drawings that depict temporary grading.

Response: The Preliminary facility drawings have been modified to indicate any temporary grading required for construction purposes along turbine access roads. In addition, a sample temporary grading plan has been developed for one 42 feet wide potential temporary construction route between Turbine 26 and Turbine 27. Additional temporary construction routes are still under development and review; however, provided under Attachment H is a map of the Project Site depicting the Applicant's preliminary temporary construction routes that will require further analysis and grading design. The balance of the temporary grading associated with the temporary construction routes will be performed as the Project design is finalized and the final details will be provided with the Compliance Filing.

1001.11(b) - As noted above in section 1001.11(a), worker parking is not exhibited on the O&M plan. Additionally, laydown areas, as indicated on the preliminary design drawings, do not show any worker parking areas. Provide an indication of worker parking areas for the proposed O&M and laydown area sites.

Response: As mentioned above in the response to 1001.11(a) iv., the O&M building layout plan has been modified to include an indication for employee and visitor parking. Similarly, the planned laydown yards also include where our employees are expected to park their personal vehicles. Also, these laydown yard parking areas are sized to accommodate the expected contractor work force at each location. The location, size and orientation of the planned parking considers safe traffic flow, material storage and delivery requirements within the laydown yard. The selected construction contractor may modify these plans to accommodate his work flows, equipment and specific laydown yard organization.

1001.11(d) - It is unclear where snow removal storage will be located (it is not explained in Exhibit 11 or shown on the preliminary design drawings). In accordance with regulation 1001.11(d), provide an indication of snow removal storage area(s).

Response: Similar to other wind energy centers in New York and in regions that receive snow accumulation, the Applicant intends to have plows on the Operations & Maintenance personnel trucks, and they will be plowing the access roads and parking lots across the Project. Snow will be pushed off the permanent access roads and windrowed at each respective edge of the road, along with the parking lot at the Operations & Maintenance building, where the snow will similarly be pushed off the pavement and stored at the edges of the parking lot. The Operations & Maintenance personnel will determine where to push and store snow based upon safety considerations and conditions encountered at that time.

1001.11(f) - The colors of the control and O&M buildings is not indicated on the drawings. To correct this deficiency, provide the colors of these buildings.

Response: Comment noted. The color of the control and O&M buildings will likely be ANSI 70 Light Gray or Light Beige. This information has been added to the drawings.

1001.12 - Exhibit 12: Construction

1001.12(a) – This section requires a "preliminary quality assurance and control plan, including staffing positions and qualifications necessary, demonstrating how applicant will monitor and assure conformance of facility installation with all applicable design, engineering and installation standards and criteria." The Application does not contain any discussion of qualifications necessary for the listed staffing positions included in the QA/QC matrix or Exhibit 12; it also does not include an explanation of how the Applicant will ensure that design, engineering, and installation standards and criteria are met. Please provide this information.

Response: Attached as Attachment I is a proposed Quality Assurance Plan provided on behalf of the Applicant by Blattner Energy Inc (BEI). BEI is frequently contracted by the Applicant to construct renewable energy facilities. Under the typical construction contract, as agent to the Applicant, Eight Point Wind, LLC requires the general construction contractor to assume all responsibility and liability for the Facility construction, including QA/QC implementation and thus provides all trained and qualified QA/QC personnel. As a party to the contract, the Applicant will be in the position to enforce the obligations imposed upon the general construction contractor. The attached document should be considered a representative plan for the conduct of QA/QC procedures at the proposed Project.

1001.19 - Exhibit 19: Noise and Vibration

16 NYCRR §1001.19(a) - Map and Sensitive Receptors
Stipulation 19(a) requires the Applicant to show on a map, all sensitive sound receptors such as "residences (including participating, non- participating, full-time and seasonal, outdoor public facilities and areas, State Forest Lands, places of worship, cemeteries, camp sites, summer camps, hospitals, schools and other noise-sensitive receptors, if identified." With the exception of residences and NYS DEC Lands, the Application does not indicate whether any of the remaining receptors are found in the project area. As required by Stipulation 19(a), include all sensitive sound receptors in the map. If no other sensitive sound receptors are found within the project area, the Application should state it. DPS advises that the following potential sound sensitive receptors are not identified in the map:

i. Three cemeteries within the Project Area: Greenwood and West Union Cemeteries (Figure 3-1, page 2 of 4) and Kelly Cemetery (Figure 3-1, Page 4 of 4)
ii. West Union Church. (Page 3-1, Figure 4 of 4)

Additionally, Stipulation 19(a) requires that the Application discuss "[t]he techniques and sources of information used to identify sensitive sound receptors, including cabins and hunting camps…." Provide this information.

Response: Receptors have been identified by the Applicant via field review along public roads, correspondence with local stakeholders, and review of aerial photos and tax records. Residential receptors have been differentiated between "full-time" or "seasonal," and have been categorized conservatively – in that if there was uncertainty as to whether it was full-time or seasonal, in many instances it was conservatively identified as full-time. Additionally, all receptors identified by the Applicant have been further divided by participating and non-participating receptors, based on whether they have entered into a lease agreement with the Applicant. Although the receptors were not shown on a figure in Exhibit 19 receptor locations are shown on multiple Figures as part of the Application, including Figure 15-2. The receptors are shown in Figures 9-1 and 9-2 of the NIA which is Appendix 19-1 of Exhibit 19.

The comment letter notes four receptors which were not included in Exhibit 19. The West Union Church is already included in the Application as receptor ID #532. The three cemeteries have been added to the receptor list using the unique identifiers as listed below:

- Greenwood Cemetery – ID #020818-1
- West Union Cemetery – ID #020818-2
- Kelly Cemetery – ID #020818-3

These three receptors are now shown on the Attachment J, Figure 9-2, Map 7 (revised) and Attachment K, Figure 9-2, Map 18 (revised) presented in the NIA. As Figure 9-2, Map 7 (revised) shows, the worst-case 1-hour Leq sound level at ID #020818-1 is the same as ID #474 (42 dBA). As Figure 9-2, Map 7 (revised) shows, the worst-case 1-hour Leq sound level at ID #020818-2 is the same as ID #767 and ID #337 (43 dBA). As Figure 9-2, Map 18 (revised) shows, the worst-case 1-hour Leq sound level at ID #020818-3 is between 43 and 44 dBA.

16 NYCRR §1001.19(b) and 16 NYCRR §1001.19(f) - Preconstruction Sound Levels, Wind Speed and Temporal Accuracy

a. L90 Ambient Noise Levels: Stipulation 19(f)(1-3) requires that the Application report the lower tenth percentile (L90) of sound levels measured during the time period of interest (daytime summer, daytime winter, summer nighttime, and winter nighttime), not an average of 10-minute samples. Provide this information.

   Stipulation 19(b) requires that the pre-construction L90 sound levels should be evaluated by applicable portions of ANSI Standards S12.100-2014 and S12.9 Part 2-1992 R-2013, in particular, ANSI/ASA S12.100-2014 Section 5.6. Please reprocess collected one-second time history to calculate the minimum L90 for every hour of each day (daytime or nighttime) so that an arithmetic mean of the lowest L-90 1-hour (for each day and night) can be calculated for the times and seasons required by the stipulations (winter, summer, year, etc.). Alternatively, the lower 10th Percentile of all calculated L90-10-min samples can be calculated for each time period of interest at each monitoring location.

   Response: The measured preconstruction L90 sound levels were recalculated using the lower 10th percentile of all valid 10-minute L90 periods for the various periods of interest at each monitoring location. Both measured and ANS-weighted values are presented. Tables 19-1, 19-2, and 19-3 provide results for the relevant time periods (daytime summer, daytime winter, nighttime summer, nighttime winter, annual) and are included in Attachment L. These updated preconstruction L90 sound levels have little to no effect on the worst-case future noise levels calculated for Stipulation 19(f)(4), 19(f)(5), and 19(f)(6) whose results were shown in Tables G2-A and G2-B of the NIA. Since the future sound levels in Tables G2-A and G2-B are essentially the Project-only, this decrease in background values will render the background plus Project totals either the same or they will decrease by ~1 dBA.

b. Sound Levels as a Function of Wind Speed: Stipulation 19(b) requires that "[f]igures of the L90-10-minute noise levels vs. wind speeds at 10 meters as extrapolated from the met towers as shown on figures 4.4.1.3., 4.4.1.4. and 4.4.1.5 of NARUC -2011 will be included in the Application." The Application appears to omit pre-construction sound levels below cut-in wind speed. Provide updated Figures 8-5 through 8-10 to report all monitored pre- construction sound levels that were omitted. If pre-construction data has also been excluded from calculation of the pre-construction sound levels required by Stipulations 19(f)(1-9), provide recalculated sound results that include the pre-construction sound levels that were omitted and update the results reported in Tables 8-1 to 8-5 in the PSLIA.

   Response: To clarify, all measured sound levels are plotted as a function of extrapolated wind speed at 10 meters above ground and are shown in Figures 8-5 to 8-10 as per the NARUC (2011) guide. In researching this comment, we found the summer plots were incorrectly plotted as a function of hub height wind speed instead of 10 meter wind speed. The corrected plots are found in Attachment M to this response (Figure 8-5 Summer All periods; Figure 8-6 Summer Night; Figure 8-7 Summer Day). No valid preconstruction sound levels were excluded from analysis, therefore, Tables 8-1 to 8-5 in the NIA remain accurate.

c. Extrapolation of Wind Speed: Stipulation 19(n) requires that the Application include "[s]pecific modeling input parameters, assumptions, and any associated data used in sound propagation modeling and calculations will be included as an appendix to the NIA." As required by Stipulation 19(n), specify assumptions and associated data used for extrapolation of the wind speed at 10 meters.

Response: As noted in Section 8.6.3 of the NIA, equation (7) from the IEC 61400-11 standard was used to extrapolate hub height wind speed down to a reference height of 10 meters. This is also the recommendation of NARUC (2011). The hub height wind speed data from the project on-site met tower (#4549) used for these calculations is being provided to DPS under trade secret protection as part of this Supplement to the Application (see Attachment N). The inputs to equation 7 and the assumed values are listed below:

Z_{0ref} is the reference roughness length of 0.05 meters
Z_0 is the roughness length for the area assumed to be 0.05 meters
H is the rotor center height of 110 meters
Z_{ref} is the reference height of 10 meters
Z is the anemometer height of 110 meters

d. Temporal Accuracy: Stipulation 19(b) requires the use of the technique in Section 9 of ANSI S12.9-1992/Part 2 (R 2013) or any other applicable statistical procedure as appropriate for the Leq and the L90 noise descriptors. Calculation of temporal accuracy has been performed for the Leq and the L90 10-minute noise descriptors, but not for the time intervals required by 16 NYCRR §1001.19(f). Please provide this information. In doing so, the confidence intervals should be recalculated for the range of specified time periods (nighttime, daytime, summer, winter, year) and the statistical samples should be the single L90 sound levels for each daytime period (15-hours) and each nighttime period (9-hours) for each day of the surveys conducted both in summer and in winter, as well as for the two seasons together.

Response: The temporal accuracy and confidence interval calculations have been revised to reflect the updated L90 values discussed in item (a) above. Tables 19.d-1 to 19.d-6, included in Attachment L hereto provide the results of these calculations.

16 NYCRR §1001.19(d)(4): Emergency Generator

As required by Stipulation 19 (d)(4), "[t]he model will also include relevant noise sources from substations, ancillary equipment and emergency generators, if any." The Application must be supplemented to include at a minimum, sound modeling and noise contours for the site area where sound levels from the emergency generator are relevant.

Response: Since the filing of the Article 10 application and the NIA, it has been determined there will not be an emergency generator installed as part of this project.

16 NYCRR §1001.19(d)(7): Corrected and Uncorrected Sound Results:

Stipulation 19(d)(6) states that "ISO-9613 and CONCAWE modeling results will be discussed independently without applying any corrections to match both results. If any corrections are applied, they will be explained and justified and both results with and without corrections will be reported." Uncorrected sound results and specific corrections are not reported. Report all corrections applied to the calculations and all uncorrected results. In doing so, DPS Staff recommends that the Applicant submit the information in tabular format on an hourly basis for the most impacted receptors; include non-participant receptors with ISO-9613-2 "short term" sound levels greater than 40 dBA; and participant receptors exceeding 45-dBA. The Applicant should also discuss CONCAWE modeling results without applying any corrections.

> **Response:** The comment letter heading says 19(d)(7) but should refer to 19(d)(6). Hourly results have been prepared in tabular format for the most impacted receptors. These include all non-participant receptors with ISO 9613-2 short-term sound levels of 40 dBA or greater (42 receptors), and all participant receptors with ISO 9613-2 short-term sound levels of 45 dBA or greater (3 receptors). Two tables are provided—uncorrected CONCAWE hourly results (Attachment O), and hourly results corrected to match the maximum short-term ISO 9613-2 result (Attachment P). Each table is 163 pages long (8760 hourly records) and thus they are provided in electronic format only. The maximum uncorrected CONCAWE result is 1-2 dBA greater than the highest 1-hour ISO 9613-2 result for these 45 receptors.

16 NYCRR §1001.19(e)(2): Tonality

Stipulation 19(e)(2) requires that the Applicant provide, "[i]nformation from the IEC 61400-11 documentation on tonality will be provided for the wind turbine model(s) under consideration." Provide manufacturer specifications including tonality information for each turbine model under consideration.

> **Response:** The manufacturer specifications for both the GE 3.43-137 and GE 2.3-116 LNTE wind turbines is being provided to DPS under trade secret protection as part of this Supplement to the Application (see Attachment N). These files contain the tonality information for each machine.

16 NYCRR §1001.19(e)(3): Wind Speed at Hub Height

Stipulation 19(e)(3) requires that the Applicant provide "[a] summary of formulae, procedures and assumptions will be described." Please provide a description of the procedure followed and the assumptions for extrapolation; an explanation as to whether the extrapolation was based upon a particular roughness value and how that value was determined (e.g. assumed or measured) or if it was based on wind speed readings at two different heights from a particular meteorological tower or from different meteorological towers; and a description of the formulas, procedures and assumptions for determination of wind speed at hub height.

> **Response:** The wind speed at hub height was based on wind speed measurements at one 60-meter on-site meteorological tower with wind sensors at two heights (40m and 58m), plus an on-site SODAR measuring wind speed at two heights (60m and 80m). These data sets allow for the calculation of wind shear (change of wind speed with height) which were then extrapolated

up to hub height (110m). Wind shear is calculated using the power law equation which was discussed in Section 10 of the NIA.

The quality checked, short-term wind speed data were extrapolated to hub height in conjunction with multiple long-term data points from the Modern-Era Retrospective Analysis for Research and Applications (MERRA) data set as compiled by the National Aeronautics and Space Administration (NASA), which are processed using the Enhanced Measure-Correlate-Predict (E-MCP) method. The E-MCP method uses a non-linear multi-parameter regression engine to numerically infer the relationship between the met towers and the MERRA data set to derive a thirty-year time series of wind speed values at an hourly interval.

16 NYCRR §1001.19 (g)(2): Evaluation of conformance with WHO-1999

Stipulation 19(g)(2) requires that the Applicant provide predicted sound levels from the Facility at residential receptors as modeled with the ISO 9613-2 and CONCAWE models to be compared to the WHO Guidelines for Community Noise (1999) and results to be discussed as specified in section (d)(5) and (d)(6) of Stipulation 19. Stipulation 19(d)(6) also requires a discussion of ISO-9613 and CONCAWE modeling results independently without applying any corrections to match both results. As required by Stipulations 19 (g)(2) and 19 (d)(6) compare Leq-8-hour sound levels as obtained with the CONCAWE method, without any corrections, to the WHO-1999 Guidelines.

Response: A review of the uncorrected CONCAWE results provided as part of the response to item 1001.19(d)(7) above shows the following. The two non-participating receptors with the highest sound levels (ID #771 and ID #325) were predicted to have 19 hours of uncorrected CONCAWE results of 46 dBA out of 8760 hours. These few hours were scattered throughout the year thus ensuring an Leq 8-hour nighttime sound level of 45 dBA or less everywhere even with uncorrected CONCAWE results. This meets the WHO 1999 Guideline value of 45 dBA Leq 8-hour. All other non-participant receptors will be even lower.

16 NYCRR §1001.19 (k): Hearing Loss from Impulsive Noise

The Application reports that blasting may be needed for excavation but does not evaluate the potential for hearing loss for impulsive sounds included in the WHO-1999 guidelines as required by Stipulation 19(k)(1). Provide the thresholds and a discussion of potential for hearing loss from impulsive noise for the project.

Response: According to the WHO 1999 Guidelines, the threshold for hearing impairment is 110 dBA (Lmax, fast) or 120/140 dBA (peak at the ear) for children/adults. The FHWA Highway Construction Noise Handbook (FHWA-HEP-06-015; August 2006) estimates construction blasting noise levels to be approximately 82 dBA at 200 feet (Lmax). The closest existing receptor to any wind turbine foundation will be well beyond 200 feet. This would result in an Lmax sound level of less than 82 dBA at any receptor. These sound levels are well below the WHO hearing impairment threshold.

In addition, if any blasting is required, the contractor responsible for blasting will have a Health & Safety Plan approved by Eight Point Wind. This Plan will include the appropriate worker hearing protection and procedures to prevent hearing loss from impulse noise.

16 NYCRR §1001.19: Community Complaint Potential

a. Stipulation 19(d) requires noise modeling with the ISO 9613-2 Standard to be conducted by following the recommendations included in NARUC-2011. Provide an analysis indicating whether or not the sound modeling with ISO 9613-2 is consistent with the recommendations of the NARUC-2011 guideline.

Response: The noise modeling with the ISO 9613-2 Standard was conducted by following the recommendations included in NARUC (2011). The following table summarizes the NARUC recommendations and how Epsilon conducted the modeling for Eight Point Wind.

Table 19.a-1 Summary of Sound Level Modeling Assumptions

ISO 9613-2 Input	NARUC 2011	Eight Point Wind
All turbine locations	Yes	Yes
All potentially sensitive receptors	Yes	Yes
Include topography (elevation data)	Yes	Yes
Modeled height of source	Hub height	Hub height
Source sound data	Maximum octave band sound power levels	Maximum octave band sound power levels
Ground absorption coefficient, G	0.5	0.5
Air temperature; relative humidity	10 deg C/70%	10 deg C/70%
Modeled receptor height	1.5m*	1.5m
Wind turbine uncertainty, K	0 dBA*	2 dBA
Plot sound contours	out to 35 dBA	out to 15 dBA

* = Not explicitly stated in NARUC 2011. Clarified via affidavit for Cassadaga Wind project by David Hessler, September 22, 2017.

b. Stipulation 19(k)(6) requires that the Applicant provide information regarding the masses of rotation for the turbines discussed in the Application. Please provide this information. The inclusion of a comparison table listing relevant parameters on listed references is recommended.

Response: The information from some of the listed references cited in Section 4.7 of the Noise Impact Assessment (NIA) are summarized in the table below. No information is publicly available about the soil type, foundation, or vibration isolation characteristics of the cited examples. As

noted in the NIA, the maximum frequency of rotation for the proposed Eight Point Wind GE 3.4-137 wind turbines is 11.45 rpm, and the GE 2.3-116 wind turbine is 15.7 rpm. With regard to the mass of rotation, a single blade for the GE 3.4-137 weighs 39,240 pounds, and a single blade for the GE 23.-116 weighs 24,250 pounds. Blade weights for the other wind turbines in Table 19.b-1 were not publicly available.

Table 19.b-1 Summary of Ground-Borne Vibration Information

Reference	Power output of WTGs	Distance to vibration measurements	Frequency of rotation
Gastmeier & Howe (2008)	1.8 MW	1,066 feet	17 rpm
MA DEP/Styles et al (2005)	450 kW	328 feet	33 rpm
MA DEP/Schofield (2010)	660 kW	80 feet	29 rpm
Epsilon/NextEra (2009)	1.5 MW	1,000 feet	20 rpm
Epsilon/NextEra (2009)	2.3 MW	1,000 feet	15.4 rpm
LUBW Ministry for Environment	2.4 MW	1,000 feet	13.2 rpm

c. Stipulation 19(k)(7) requires reporting maximum sound levels at the 31.5 and 63 Hz bands as predicted with computer noise modeling (ISO and CONCAWE) for all sound sensitive receptors specified in section (a) of stipulation 19. Currently, the PSLIA doesn't list the sound levels at 31.5 and 63 Hz as obtained with the CONCAWE meteorological correction for any receptors. Provide maximum sound levels at the 31.5 and 63 bands as predicted with the CONCAWE meteorological correction for all sound sensitive receptors specified in Section(a).

Response: The maximum uncorrected sound levels in the 31.5 and 63 Hz octave bands as predicted with the CONCAWE meteorological corrections are shown below in Table 19.c-1. The maximum 31.5 Hz sound level is 64 dB at a participating receptor and 61 dB at a non-participating receptor. The maximum 63 Hz sound level is 63 dB at a participating receptor and 59 dB at a non-participating receptor. These are all below the minimal annoyance level of 65 dB. All other receptors were lower than these values.

Table 19.c-1 Maximum 31.5 and 63 Hz CONCAWE results (uncorrected)

Receptor ID	31.5 Hz	63 Hz	Status
332	64	63	Participating
531	62	60	Participating
758	62	60	Participating
281	62	60	Participating
504	62	59	Participating
516	61	60	Participating

Receptor ID	31.5 Hz	63 Hz	Status
330	61	59	Participating
326	61	59	Participating
328	61	59	Participating
341	61	59	Non-Participating

16 NYCRR §1001.19(k)(8): Potential for Interference with Seismological Stations

Stipulation 19(k)(8) requires a map and a discussion about the potential from operation of the facility to interfere with seismological stations within 50 miles. Section 12.7 "Potential Interference with Technology" does not specify whether there are any USGS seismological stations within 50 miles of the project area. Provide this information.

Response: There are no US Geological Survey (USGS) seismological stations within 50 miles of the site. The nearest USGS stations are Binghamton, NY approximately 88 miles to the east, Erie, PA approximately 119 miles to the west, and Lake Ozonia, NY approximately 236 miles to the northeast.

16 NYCRR §1001.19(n): GIS files

As required by Stipulation 19(n), forward GIS files with turbine locations and ground elevations, other noise sources and heights; evaluated participating and non-participating receptor locations; participant and non-participant boundary lines, grading, and topography to DPS Staff by electronic means.

Response: Comment noted. This information is being provided to DPS as part of this Supplement to the Application (see Attachment Q).

1001.21 - Exhibit 21 Geology, Seismology and Soils

1001.21(i) - The Preliminary Blasting Plan (Appendix 21-3) does not identify the locations where blasting is anticipated and does not provide estimates of amounts of rock to be blasted. Additionally, the Preliminary Blasting Plan does not adequately describe how the Applicant will coordinate blasting operations with local safety officials.

Response: Comment noted. Geotechnical borings were obtained at 22 of the 35 proposed turbine locations. The remaining borings have not been performed to date due to restrictions imposed by tree clearing limitations. Analysis of the geotechnical findings by the Applicant's foundation design consultant revealed that blasting would likely be unnecessary for spreadfoot-type foundations due to the depth of bedrock being below the maximum excavation depth. Below is a summary table of estimated amount of rock to be blasted for installation of the Patrick & Henderson Tensionless Pier (PHTP) type foundations.

Table 21.a Blasting Estimates at Bore Locations (PHTP Type Foundations)

Bore/Tower Location	Blasting Estimate	Cubic Feet
ALT-1	Blasting not required	-
ALT-2	Blasting below 16 feet	3563
T-1	Blasting below 21 feet	2290
T-3	Blasting not required	-
T-4	Blasting below 10 feet	5089
T-5	Blasting not required	-
T-6	Blasting below 13 feet	4453
T-7	Blasting below 12 feet	4580
T-9	Blasting below 12 feet	4580
T-10	Blasting not required	-
T-11	Blasting below 20 feet	2545
T-14	Blasting below 12 feet	4580
T-16	Blasting below 21 feet	2290
T-17	Blasting below 14 feet	4072
T-18	Blasting below 15 feet	3817
T-21	Blasting below 17 feet	3308
T-22	Blasting not required	-
T-23	Blasting below 12 feet	4580
T-24	Blasting below 19 feet	2799
T-26	Blasting not required	-
T-28	Blasting below 27 feet	763
T-30	Blasting below 12 feet	4580
T-31	Blasting below 8 feet	5598
	Total	63490

Only controlled blasting that fractures the rock inside the proposed foundation excavation is required. Blast holes are drilled along the perimeter of the proposed excavation (18 feet diameter). Total depth of the PHTP foundations is assumed to be 30 feet.

The average quantity of estimated rock to be blasted in the above table is 2,760 cubic feet per turbine. Using the total quantity above and applying the average to the remaining unexplored turbine locations yields an estimate of 96,610 cubic feet of rock for the total project. This number is approximate and will be refined in the Compliance Filing after the completion of the geotechnical investigation and consultation with the Applicant's construction contractor.

If blasting is required, the Applicant (along with the Balance of Plant (BOP) contractor) would hire a blasting contractor that is certified and experienced in New York. The blasting contractor will coordinate closely with local safety officials, so that the local officials are made aware of whether blasting will be necessary in certain locations of the Facility Site. If blasting is necessary, the local safety officials will be made aware of when and where the blasting will occur, what (if any) potential safety hazards are present, and how the local officials can assist the construction team to make sure the public is kept safe. Communication with local officials is likely to include a combination of face to face conversations/meetings, emails, and phone calls. Final blasting plans will be provided in the Compliance Filing.

1001.21(k) - The Application does not identify alternatives to blasting for excavation of bedrock and does not identify alternative siting options to avoid turbine locations where blasting would be required.

Response: Comment noted. The use of blasting operations within the Project is intended to be used as the final attempt (or last method employed) in the excavation of encountered bedrock onsite -- only after all other alternatives have been exhausted. As stated within Exhibit 21 of the Application, if rock or bedrock is encountered during excavation, the construction crews first will attempt to extract it using a backhoe or other appropriate heavy equipment (e.g., drills, hydraulic rock breakers, rock hammers, rock saws, etc.). However, if the bedrock cannot be extracted with a backhoe, other means may be used for excavation (e.g., pneumatic jacking and/or hydraulic fracturing). Accordingly, no blasting will be required if the above procedures are found to be successful in removing any impeding bedrock. If the associated bedrock cannot be excavated using the above means, it may be necessary to use a blasting method as the final alternative to remove bedrock/rock laden areas. In these exceptional cases, the blasting plan presented in the Application shall be implemented.

The process of siting the proposed Project turbine locations was iterative in nature, and required a high degree of precision as it considered multiple constraints. Each turbine location is the culmination of mitigating various social, agricultural, and environmental impacts while maintaining productive levels of annual energy generation from available wind resources. The shifting of turbine locations solely on the account of encountered bedrock is not practical due to the potential for increased impacts to the other factors listed above.

As portrayed in Figure 21-3 of the Application, a vast majority of the bedrock within the Project Area is well over 78 inches from the surface. In addition, based on results of test borings performed to date by Kenney Geotechnical Services (at 22 of the proposed wind turbine locations), it appears that the depth to rock, as identified on the available logs, varies across these 22 locations and ranges from one foot below ground surface (bgs) to over 40 feet bgs. The initial boring logs indicate that the majority of bedrock is sandstone, with occasional layers of shale and conglomerate. It is presumed that the potential to encounter bedrock will be relatively minor throughout the turbine locations and associated buried 34.5 kV collection circuit routes as a vast majority of the Facility Impact Area is presumed to reside 40 feet or more over underlying bedrock.

Currently, there are four alternative turbine locations sited for the Project. As a proactive strategy, these alternative turbine locations were proposed along with the anticipated turbine locations. Comparable scrutiny was employed in planning the placement of these four

alternative turbine locations in order to navigate the mentioned assortment of constraints and validate these locations as functional alternatives. Although presumed unlikely, should impassable bedrock be encountered, one of the four alternative turbine locations could be used as an alternative.

1001.21(q) - The Application does not include vertical profiles showing soils, bedrock, water table, seasonal high groundwater, and typical foundation depths on the facility site.

Response: Included within Exhibit 21 of the Application (and associated Appendices) are multiple references to geotechnical boring surveys which were conducted at the proposed turbine locations. The sub-surface characteristics encountered at the specific bore sites were described and depicted graphically. Specific descriptions of each of these strata including encountered depths, their specific soil texture, and general physical nature can be reviewed in greater detail on page 14 of Exhibit 21. The results of these geotechnical borings included in Exhibit 21 and the associated Appendices provide very specific profiles.

Specifically, a summary of the 22 strategically selected boring locations was described within page 13 of Exhibit 21. Within the summary, four primary strata which were encountered as part of the boring survey are described. These strata are as follows:

- Stratum A -- Glaciofluvial Soil
- Stratum B – Glacial Till
- Stratum C – Transition Zone Rock
- Stratum D – Bedrock

Additionally, the entirety of the Preliminary Geotechnical Report prepared by Kenney Geotechnical Services is provided in Appendix 21-2 of the Application. Within the report, boring logs for each of the 22 borings are included. Each boring log depicts lithologic symbols representing the types of subsurface material encountered at specified depths for each boring location. Included lithology are represented by the Unified Soil Classification System and were depicted in vertical profile. Furthermore, each log designated any encountered water level measurements within the bore, indicated standard penetration “N” values where augers could penetrate, assigned rock quality designations, and provided descriptions of any unusual occurrences with remarks from geological expert’s onsite during the boring operations.

Based off the supposition that the soil boring locations were representative of the Facility Site, and in reference to statements made in Exhibit 21(n), it is determined that the majority of bedrock to be encountered on the Project Site is sandstone with occasional layers of shale and conglomerate. The depth to rock, as identified on the logs, varies across the 22 locations and ranges from one foot below ground surface (bgs) to over 40 feet bgs. At most locations where rock was encountered at shallow depths it consisted of Transition Zone Rock, (Stratum C). The majority of the bedrock encountered occurred either directly below glacial till or below this transitory layer. Bedrock, which was encountered at some bore locations, consists primarily of moderately hard fine-grained sandstone with occasional layers of soft red and green shale and moderately hard conglomerate, which was sampled, when encountered, using rock coring

techniques. Based on available information from the test boring logs, the top of the coreable rock surface varies from approximately 6 feet (Test Borings T-16 and T-23) to greater than 40 feet (Test Boring T-22).

As stated in Exhibit 21, test borings preformed to date did not encounter groundwater within overburden soils prior to introducing water for use in rock coring. However, as indicated in Exhibit 21, this could vary seasonally as perched water conditions could potentially develop. Water level measurements when encountered, were included within the bore log graphical depictions as well and can be reviewed in Appendix 21-2 of the Application.

As discussed in the Application, foundation designs are still being evaluated, but they will be finalized after the geotech borings have been completed at all of the turbine locations – with the final design selection per turbine presented in the Compliance Filings. The foundations selected will either be concrete spread foot, or the Patrick & Henderson Tensionless Pier (PHTP) type foundation. Sample design drawings of the two foundation types are included in the Application in Appendices 11-1, 11-2 and 11-3.

1001.22 - Exhibit 22: Terrestrial Ecology and Wetlands

Stipulation 22(b) – No map was provided pursuant to this section. Provide maps at a scale of 1:2,000 or finer depicting areas of invasive species concentrations.

Response: Comment noted. During ecological resource surveys conducted in the fall of 2016 and spring/summer of 2017, field biologists documented observed occurrences of 14 invasive vegetative species that are listed as prohibited on the Prohibited and Regulated Invasive Plants list published by the NYSDEC on September 10, 2014 and also listed as a priority invasive according to the Finger Lakes PRISM within the Project Area. Invasive species were either documented on the USACE wetland delineation data forms, or indicated in field notes as biologists traversed the Project Area. Based on results of the on-site field surveys, the Applicant found invasive species within the Project Area occur at very small population sizes and are very dispersed.

The following invasive plant species were identified in very low densities throughout the Project Area:

- Amur honeysuckle (*Lonicera maackii*)
- Black locust (*Robina pseudoacacia*)
- Canada thistle (*Cirsium arvense*)
- Common buckthorn (*Rhmanus cathartica*)
- Common reed (*Phragmites australis*)
- Cut-leaf teasel (*Dipsacus laciniatus*)
- Garlic mustard (*Alliaria petiolata*)
- Morrow's honeysuckle (*Lonicera morrowii*)
- Tartarian honeysuckle (*Lonicera tartartica*)
- Multiflora rose (*Rosa multiflora*)

- Purple loosestrife (*Lythrum salicara*)
- Ragweed (*Ambrosia spp.*)
- Reed manna grass (*Glyceria maxima*)
- Smooth buckthorn (*Rhamnus frangula*)

The Applicant has provided a map set depicting the approximate locations of the 14 invasive species throughout the Project Area and it is included herein as Attachment R. The map is provided at 1:1,000 scale. Invasive species data points are approximate locations only and do not depict the locations of the invasive species to scale.

Stipulation 22(g) – No curtailment proposal was provided. Provide a proposed curtailment regime. Such a proposal should include data and discussion regarding the issues of the economic impact of any required curtailment and the expected benefit from clearly defined mitigation proposals.

Response: The Applicant has conducted numerous consultations with staff at the NYSDPS and NYSDEC to better understand the basis and need for a bat curtailment plan. The Applicant has conducted extensive field studies and an assessment of bats in the Project Area. In addition, the Applicant has evaluated numerous mitigation opportunities to address the possible take of bats associated with the Project.

Based on these assessments, the Applicant is proposing herein a curtailment regime that includes the following:

> Turbine operations will be curtailed from 30 minutes before sunset to 30 minutes after sunrise, every day during the period from July 1 through October 1; when ambient air temperature is 50 degrees Fahrenheit or greater; and when wind speed is less than 5.0 meters per second (m/s).

In addition to this curtailment regime, multiple measures are also included below to support the creation of a Net Conservation Benefit Plan (the "Plan") for the Northern Long Eared Bat (NLEB), and other bat species in collaboration with the NYSDEC and NYSDPS.

The Applicant supports an appropriate bat curtailment program based on analyses of species risk, renewable energy production losses and economic impacts based on reduced operations. The Applicant has determined that a 6.9 m/s curtailment program would likely cost the Project approximately $21 million over the life of the Project. This financial impact is based on an analysis of the revenue loss that would be incurred from the renewable energy credits and associated megawatt hours of energy that would not be produced based upon the imposition of a curtailment program of 6.9 m/s. Table 22.a below outlines the specific curtailment impacts in increments from 5.0 m/s to 6.9 m/s.

Table 22.a Bat Curtailment Reduced Production and Economic Impacts

Expected Project Impacts:	Curtailment Impacts (Cumulative)				
	5.0 M/S	5.5 M/S	6.0 M/S	6.5 M/S	6.9 M/S
MWh's Curtailed [1]	-40,575	-65,545	-115,484	-184,150	-259,059
Economic Impact ($M) [2,3]	-$3.4	-$5.4	-$9.6	-$15.2	-$21.4

1) MWh impact assumes lost MWh production due to cumulative curtailment levels stated in this table for 35 year life of the project

2) Economic impact assumes lost Energy and Renewable Energy Credit (REC) revenue per MWh not sold due to cumulative curtailment levels stated in this table for 35 year life of the project. Economic impact does not include expected Capacity revenue.

3) Price per MWh assumes total price for Energy and REC's from 2019 through project life of 35 years. Energy price derived from Promod model and assumes OFF-PEAK pricing during proposed curtailment months of July-September [redacted]

It is also important to recognize that the additional curtailment will result in existing fossil generating resources operating more and not being displaced by the Project. The Applicant used the US Environmental Protection Agency Integrated Planning Model version 5.15 for New York generation forecasts to calculate the level of emissions avoided by the Project. As shown on Table 22.b, the increased renewable energy production from the 5.0 m/s curtailment program is forecasted to avoid an additional annual average of 3,526 tons of carbon dioxide and 5.97 tons of nitrous oxides, compared to the 6.9m/s curtailment, from being emitted from NY generating sources for 2020. For more detail on the methods utilized to obtain avoided emissions projection data please refer to Attachment S located herein. In addition, based on US Energy Information Administration energy residential use data for New York, the net gain of an additional 6,242 MWh of production from the 5.0 m/s curtailment regime would electrically power an additional, equivalent 868 residences annually by the Project. The forecasted annual number of equivalent vehicles removed from the road was calculated by dividing the projected total avoided emissions calculated above by the amount attributed to a typical light duty American vehicle.

Table 22.b Wind Speed Bat Curtailment Environmental Results

	5.0M/S	5.5M/S	6.0M/S	6.5M/S	6.9M/S
NYS Emissions Avoided (Tons)					
Carbon Dioxide[1]	185,868	185,465	184,659	183,550	182,342
Nitrogen Dioxide[1]	315	314	313	311	309
NYS Residences Powered by the Project[2]	45,715	45,615	45,417	45,145	44,847
Equivalent Cars Removed from the Road					
Carbon Dioxide[3]	36,405	36,326	36,168	35,951	35,714
Nitrogen Dioxide[4]	16,843	16,806	16,733	16,633	16,523

1) Based on EPA's Integrated Planning Model v.5.15 New York 2020 Forecast; https://www.epa.gov/airmarkets/power-sector-modeling-platform-v515
2) 2015 EIA Customer and Sales Totals
3) Light Duty Vehicle CO2 Equivalent 2015, EIA and DOT
4) 2014 National Emissions Inventory and Office of Highway Information

To offset the proposed NLEB bat "takes" for the Project, which is estimated to be 17.82 NLEB taken for the proposed life of the Project (35 years) at an adopted curtailment regime of 5.0 m/s, mitigation proposals as part of the proposed Plan are provided herein by the Applicant. The mitigation proposals provided herein are intended to offset proposed impacts to local NLEB populations as a result of the Project, increase the productivity, abundance, and available habitat for the species, and also improve public awareness and research to further protect the species from existing threats.

The Net Conservation Benefit Plan include the following mitigation measures:

- The development of a bat conservation habitat area on Applicant-owned land within the Project Area. The specific parcel can be selected in consultation with NYSDEC and NYSDPS Staffs and identified through discovery or in the Compliance Filing. This bat conservation habitat area could be assured for the life of the Project with a 'no tree clearing' conservation easement imposed. The Applicant owns a heavily forested site appropriate for a bat conservation habitat mitigation area, approximately 1.3 miles from a location where a NLEB was captured during the summer 2016 mist-net survey effort for the Project (see Appendix 22-7 of the Application). In addition, the acoustic study also identified NLEBs in proximity of the mitigation area. On this site located just south of Call Hill Road in the Town of Hartsville, NY, the Applicant proposes a total of 25 acres of existing and continuous forestland be available for bat conservation habitat with a "no tree clearing" conservation easement.

- The Applicant proposes to conduct NLEB mist-netting and radio-telemetry tracking operations to assist in the identification of previously unknown maternity roost trees

and/or hibernacula in the vicinity of the Project Area on land which the Applicant owns or to which it has the necessary property rights, approximately 350 acres plus the proposed right of way for the Article VII transmission line. NYSDEC witnesses testified in the Cassadaga Article 10 proceeding that given an average productivity of 0.5 pups (bat offspring) per year, the identification of a new maternity roost tree will better allow the NYSDEC to protect the identified site from disturbance and as such, offset the loss of up to five (5) NLEBs. The Applicant will also apply a credit ratio of five (5) bats per newly identified maternity roost tree and/or hibernacula. The Applicant believes it is reasonable to expect that its tracking operations will identify approximately 5-10 new roosting tree/hibernacula, thereby offsetting the projected take from the Project.

- The physical gating of bat hibernacula is an important measure for protecting against the further spread of White Nose Syndrome (WNS) by public access into non-infected bat hibernacula. The locations of the hibernacula can be discussed with NYSDPS and NYSDEC staff and identified in discovery or in the Compliance Filing. The Applicant proposes to work with New York agencies to financially support physical gating of agreed-upon bat hibernacula in regional Project areas focused on Steuben County, if appropriate. According to the Siting Board in the Cassadaga decision, NYSDEC testified that it would accept a calculated conservation benefit equal to 50% of the estimated number of resident NLEB in that case. We adopt the same assumption here.

- The Applicant is prepared to work with New York State agencies and environmental stakeholders to provide an annual financial contribution to current White Nose Syndrome (WNS) research programs for a period of five years.

- The Applicant could establish a Wildlife Resource Recovery System (WRRS) to maintain continuous mortality monitoring program by wind technician staff for the life of the Project and create annual reports of avian and bat mortality impacts.

- The Applicant could help financially sponsor and support an Annual NYS Bat Symposium, for a period of five years.

- The Applicant could create and implement a free annual bat house program for interested landowners for a period of five years.

- The Applicant could create and circulate annual bat awareness brochures by the Applicant for public education for a period of five years, detailing what the public can do to protect bats and their habitat.

- The Applicant will also continue to be an active member in numerous bat conservation and research efforts, including bat research with Texas Christian University, adherence to Federal Land Based Wind Energy Guidelines and participation in the Avian Power Line Interaction Committee, among others.

The Applicant respectfully submits that the 5.0 m/s curtailment regime proposed herein by the Applicant, in conjunction with the Net Conservation Benefit Plan (to be created through a collaborative process with the NYSDPS and NYSDEC), would sufficiently offset projected takes of

NLEB from the Project, mitigate impacts to all bat species (including the NLEB), preserve and promote bat(including NLEB) habitat, enhance conditions for increased productivity, and reduce threats to the NLEB, while considering other environmental, societal, and economic impacts from the Project.

Section 1001.22 and Stipulation 22(f)(7) and (h)(5) - Provide a mitigation plan pursuant 6 NYCRR Section 182.11 (Part 182), as DEC has verbally indicated to the Applicant that a take of state listed, threatened and endangered species (including bats) is likely.

Response: As stated previously, through verbal consultation with the NYSDPS and NYSDEC, the Applicant is aware that the agencies believe an incidental take permit is required for potential impacts to the NLEB and is proposing the curtailment regime and Net Conservation Benefit Plan described in the prior response above. During correspondence with DEC personnel, there was no mention of other state-listed threatened or endangered species indicated in Exhibit 22 of the Application requiring a take permit. As such, a species- specific mitigation plan does not appear to be required for the other state-listed threatened or endangered species indicated in Exhibit 22 of the Application. If there are other species of concern, the Applicant can develop a species-specific mitigation plan when it is made aware of such a concern.

All other state-listed threatened or endangered species which the Applicant put forth are avian. For reference purposes, these species are as follows: Henslow's sparrow (*Ammodramus henslowii*), bald eagle (*Haliaeetus leucocephalus*), northern harrier (*Circus cyaneus*), and the pied-billed grebe (*Podilymbus podiceps*). These species are all state-listed as threatened in New York State and indicated through inquiry into State databases. Additionally, the golden eagle (*Aquila chrysaetos*), a state-listed endangered raptor, was visually documented on-site by field personnel. The Applicant has indicated in Exhibit 22 of the Application that it is estimated that Project operation may result in the mortality of up to 127 birds annually. Some of those bird species could be the State-listed threatened or endangered species mentioned above. Through cumulative impact analyses on the local and state level, it was concluded in the Application (Exhibit 22, Pg. 44) that this Project would contribute to only 9.24% of the total annual bird mortality of locally proposed and operational wind facilities, and to only 2.8% of the annual mortality of State-wide wind facilities. To date, no significant population level impact to any one species has been documented as a result of mortality from wind projects. This is largely because most of the nocturnal migrant passerines, which are at the greatest risk of collision, are considered to be abundant where they occur (NRC 2007, Johnson et al. 2002, Arnold and Zink 2011). Erickson et al. 2014 used bird fatality data from 116 post-construction fatality studies in the U.S. and Canada to estimate annual fatality rates for 156 small bird species. They determined that wind turbine fatality affected less than 1% of the continent-wide populations of all 156 species annually, and 0.016% or less of the continent-wide populations of USFWS Species of Conservation Concern (2008) annually.

In reference above, the Applicant is aware that no significant population level impact to any one avian species is presumed to occur as a result of mortality from wind projects. However, in an effort to further reduce Project related impacts to birds and bats, a Post-Construction Operations Monitoring program will also be developed to assess and adaptively mitigate the direct and indirect impacts the Project may have on avian species, including state-listed threatened and endangered avian species, and their associated habitats. The post-construction monitoring program will reference the NYSDEC's *Guidelines for Conducting Bird and Bat Studies*

at Commercial Wind Energy Projects (Guidelines) (revised June 2016) and also be developed in consultation with the NYSDEC and USFWS. Exact details of the post-construction monitoring program will be determined through discussions and consultation between NYSDEC, USFWS, and the Applicant based upon site specific analyses and with specific interest and in specific arrestment of state-listed threatened and endangered avian species. For a general discussion on the mitigation protocols to be outlined in the post-construction monitoring plan made in reference to the Guidelines please reference to 22(h) (4) located on page 68 of the Application. Post-construction monitoring protocol will be in place prior to the start of Project operation. Through utilizing an approved monitoring and adaptive management plan which follows agency approved protocols, the Applicant proposes that impacts to avian species, including state-listed threatened and endangered avian species will be minimized or avoided to the maximum extent practicable.

For mitigation planning proposed for the NLEB by the Applicant, please refer to the response noted to Stipulation 22(g) above.

References

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NRC (National Research Council of the National Academies). 2007. Environmental impacts of wind-energy projects. Committee on Environmental Impacts of Wind Energy Projects, Board on Environmental Studies and Toxicology, Division of Earth and Life Studies. National Academies Press, Washington, D.C.

US Fish and Wildlife Service (USFWS). 2008. Birds of Conservation Concern 2008. Arlington, Virginia: Division of Migratory Bird Management. Available: http://www.fws.gov/migratorybirds/NewReportsPublications/SpecialTopics/BCC2008/BCC2008.pdf.

The New York State Department of Environmental Conservation (DEC) advises that Section 1001.22(10) of the Application should provide an invasive species monitoring plan for no less than five years.

Response: The invasive species monitoring plan has been updated per the above comment and Stipulation 1001.22(b)(10) to provide an indication that the post-construction monitoring plan for invasive species will be implemented for a period of no less than five years. The Applicant proposes that the post-construction monitoring of invasive species will be conducted in year one, year three, and year five following completion of construction and restoration. The revised Invasive Species Control Plan is included herein for reference as Attachment T.

DEC also advises that the response to Stipulation 22(d)(2) is deficient because it does not discuss the extent, methodology and results of the ongoing eagle observation surveys.

Response: Exhibit 22 describes the extent, methodology, and results of the 2016 aerial bald eagle nest survey and eagle point count observation surveys conducted between March 2016 and February 2017 at the Project and the following describes the same for the second year (2017-2018) eagle observation surveys. A work plan dated July 13, 2017 was developed by Stantec for a second year of eagle observation surveys at the Project, and was emailed to NYSDEC, NYSDPS, and USFWS on July 14, 2017. Methods for the second year of eagle use surveys are based on 2013 USFWS Eagle Conservation Plan Guidance (ECPG) and the 2016 USFWS final eagle rule 81 FR 91494.

The objective of the survey is to use point count surveys to assess a second year of activity during baseline conditions at the Project for bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*). The survey is currently being conducted at 14 survey plots within the Project Area. Since 2017 − 2018 represents the second year of eagle use surveys, for data replication the same number of plots surveyed in 2016 − 2017 are being surveyed in 2017 − 2018. Additionally, the same plot locations surveyed in 2016 − 2017 were retained for the 2017 − 2018 survey if they were proximal to Project infrastructure (as proposed as of June 30, 2017). Per the ECPG, the number of point count locations was determined in 2016 by calculating an area including a 1-kilometer (km; < 1-mile [mi]) buffer around the proposed turbines, calculating 30% of that area, and dividing by 2 (the 800-meter [m] [2,640-feet [ft]] radius plots occupy an area of 2 km^2 [< 1 mi^2]). The total area of plots for the second year of surveys represents ≥ 30% of the Project Area, consistent with the 2016 − 2017 surveys. Nine of the same 14 plots surveyed in 2016 − 2017 were retained for the 2017 − 2018 survey. Five of the 14 plots surveyed in 2016 – 2017 (plot 17 southwest of the Project Area, and plots 8, 12, 15, and 20 east of the Project Area) were relocated closer to current Project turbine and access road locations.

Per the protocol mandated from *Eagle Take Permits and Fees* (50 CFR part 22 supported by ruling in 81 FR 91494), each plot consists of an 800-m radius and with a height of 203.5 m. Monthly visits will continue for one full calendar year, July 2017 to June 2018. Visits consist of 1-hour (hr) point counts at each plot, resulting in each plot being surveyed for 12 total hours during the 2017 – 2018 survey. Surveys are being conducted during all weather conditions except when visibility is less than a horizontal distance of 800 m and vertical distance of 200 m. Surveys are being conducted during all daylight hours, specifically mid-day, with the start time for each point count varying throughout the 12-month period. In relation to the protocol stipulated above, the percent visible area within each 800-m radius, 203.5 m high plot will be estimated during field visits twice during the survey year, during both leaf-on and leaf-off conditions.

At the start of each point count, weather data including wind direction and speed, cloud cover, precipitation, and temperature will be recorded. For each eagle observed, the following is recorded: the start and end time of the observation, age class (as possible), the horizontal distance of each eagle from the observer, the approximate average flight height, behavior (prevalent behavior during each 1-minute interval of observation), and the duration of flying minutes within plots. Each eagle's flight path will be drawn on a map of the plot. While the survey targets eagles, all raptor species observed and incidental observations of bird species of conservation concern or large groups of birds are recorded.

Based on a preliminary review of second year survey data collected between July 2017 through December 2017 at the Project, seven bald eagles were observed: three observations at survey plot 21 (one on August 23 and two on November 28, 2017) and one observation each at survey plot 18 (October 17, 2017), survey plot 19 (September 19, 2017), and survey plot 24 (October 16, 2017), and the seventh observation is from outside of plot 13 (September 18, 2017) when the observer was driving between survey plots 13 and 14.

After completion of the 2017-2018 survey, data collected will be summarized in a memorandum report. The report will state the proportion of each 3-dimensional survey plot that was visible during leaf-on and leaf-off conditions, the total number and locations of eagle observations, and the total number of eagle exposure minutes, i.e., flight minutes within each plot rounded up to the next whole integer. The report will summarize in tabular format the survey effort and weather conditions during each point count, and for each eagle observation will list the time, survey plot, age (as possible), approximate average flight height, and flight behavior. A map of the survey area will be provided in the report and coordinates in decimal degrees for each survey plot will be available upon request. A list of the species and locations of other raptors observed, and a list of other bird species observed incidental to surveys will be provided as an appendix. The report will be submitted to the NYSDEC, NYSDPS, and to the USFWS based upon the recommendation from the NYSDEC, as part of the Project Compliance Filing.

DEC further advises that the Application does not comply with Stipulation 22(d)(5), which requires the identification, under appropriate seasonal conditions, of any vernal pools that may be impacted by construction or operation of the Facility, and of their functions. Provide a description of where potential or actual vernal pools are located in the project area, what time of year and under what conditions they were identified, whether or not they may be impacted by the construction or operation of the project, and what the potential impacts are to species utilizing the vernal pools.

Response: Stipulation 22(d)(5) provides, in relevant part, that, "*To the extent that vernal pools and their functions (including the surrounding upland habitat) may be impacted by construction or operation of the Facility, those features will be identified under appropriate seasonal conditions and these impacts shall be identified and assessed in the Application. Such impacts may require, in consultation with DEC and DPS staff, the development and implementation of site-specific surveys for reptile and amphibian species under appropriate seasonal conditions in order to quantify the level of impact from the project".* The associated deficiency stated in the January 29, 2018 letter is contradictory in two facets to Stipulation 22(d)(5).

Stipulation 22(d)(5) therefore provides that only vernal pools (including surrounding upland habitat) which are deemed to be impacted by construction or operation of the Facility were to be identified and then assessed in the Application. However, the claimed deficiency requests that a description of where potential or actual vernal pools are located in the *Project Area* is required. It was perceived by the Applicant that in the stipulation, only vernal pools located in the *'Facility Impact Area'* were to be identified and discussed, as they would be the ones impacted by construction or operation of the Facility. However, the deficiency letter requests the documentation and discussion of all potential or actual vernal pools within the 'Project Area.' For purposes of the Project, the Project Area is defined as a 15,295 acre area encompassing both participating land parcels and adjacent non-participating parcels. Due to the size of area and the fact that the Applicant does not have access permission from all of these

landowners, the entire Project Area cannot be accurately surveyed for the presence of potential vernal pools. Instead, the Facility Impact Area was surveyed, which is the portion of the Facility Site where the potential limits for site disturbance exists.

In addition, Stipulation 22(d)(5) states that only vernal pools were to be included, while the deficiency letter states that 'actual and potential' vernal pools were to be addressed. Identifying potential vernal pools is not included in the Stipulation. Moreover, it appears that the measurement of 'actual and potential' vernal pools allows for a probable inaccuracy in data collection efforts as there is no definitive NYDEC guideline on the correct definition and demarcation of vernal pools in the State. As an alternative, and when conducting the surveys, the Applicant utilized definitions and guidance from the New York Natural Heritage Program (NYNHP) and regionally specific survey guides supported by other state agencies including the Maine Association of Wetland Scientists (MAWS) Vernal Pool Technical Committee *Vernal Pool Survey Protocol* (MAWS, 2014). Due to the inconsistency of various state definitions on vernal pools, lack of state vernal pool survey guidelines, and the use of out of state guidelines as a supplement, the Applicant can only accurately assess and classify nominated features as potential vernal pools to the NYSDEC.

Currently the NYSDEC defines vernal pools under the general moniker of 'Woodland Pools.' Woodland Pools are defined by the NYSDEC as "*a type of small, temporary wetland (or vernal pool) found in forested landscapes. They occur in isolated, shallow depressions that typically fill during the spring or fall, but dry by late summer or during droughts. Woodland pools are also found in floodplains, at the headwaters of streams, or in larger wetland complexes such as hardwood swamps, but they're usually not connected to permanent surface water flows. Instead, they fill from rain, snowmelt, or groundwater.*" Similarly, the NYNHP provides a conservation guide describing vernal pools specifically and defines them, in greater detail, as being intermittently to ephemerally ponded, small, shallow depressions usually located within an upland forest. NYNHP further states that vernal pools "…are *normally flooded in the spring or after a heavy rainfall but are usually dry during the summer. Many vernal pools are filled again in autumn. The substrate is dense leaf litter over hydric soils. Vernal pools typically occupy a confined basin (i.e., a standing waterbody without a flowing outlet), but may have an intermittent stream flowing out of it during high water. Since vernal pools cannot support fish populations, there is no threat of fish predation on amphibian eggs or invertebrate larvae*."

Within the NYNHP conservation guide, characteristic animals of vernal pools are also listed and it includes species of amphibians, reptiles, crustaceans, mollusks, annelids, and insects. Specifically, obligate vernal pool species of amphibians listed for the State of New York include the spotted salamander (*Ambystoma maculatum*), blue-spotted salamander (*A. laterale*), Jefferson's salamander (*A. jeffersonianum*), marbled salamander (*A. opacum*), and the wood frog (*Rana sylvatica*). In reference to the Herp Atlas Project list discussed in the Application, amphibian species which were identified as occurring within the Greenwood and Rexville USGS 7.5 minute topographic quadrangles encompassing the Project Area were documented. Of the Herp Atlas generated list, characteristic vernal pool species listed above were also documented as potentially occurring within the Project Site. These were specifically the spotted salamander and wood frog.

Due to the substantial reliance on vernal pools by these two species for survival, their listing further supported the notion to field biologists that potential vernal pools could in fact be found

within the Facility Impact Area. As such, during field survey work conducted in the spring season of 2017, field biologists identified and documented any potential vernal pools located within or adjacent to the Facility Impact Area. Field crews were directed to utilize vernal pool definitions supported by the NYNHP conservation guidance document and the aforementioned out of state guidelines. As a result of this effort, a total of six potential vernal pools were documented as occurring adjacent to, but not within, the Facility Impact Area. Review of the proposed layout and associated Facility Impact Area indicated that potential vernal pools located during the spring field survey were not proposed to be impacted by any infrastructure and so, in reference to Stipulation 22(d)(5), potential vernal pools were not discussed in further detail within the Application.

In order to respond to the interest raised by the NYSDPS within the deficiencies listed in the January 29, 2018 letter (outside of the stated inconsistencies), the Applicant will provide more detail on the locations of the six potential vernal pools in the form of a figure set located in Attachment U, attached hereto. The figure set locates each specific potential vernal pool documented through GPS point location during the spring 2017 survey and depicts its known location in relation to the referenced Facility Impact Area. Likewise, photographs of each potential vernal pool are also provided in Attachment V for agency review.

The six potential vernal pools documented were small (less than 0.5 acre) in size. Most of the potential vernal pools indicated are surrounded by upland forest; however, some are located within forested wetland settings as well. A majority of the potential vernal pools identified have partially decomposed leaf litter substrate, which is known to provide suitable habitat for the aforementioned amphibians at various life stages. Water staining of the leaf litter substrate in these potential vernal pools indicated to field biologists that inundation of these depressions was ephemeral in nature, but may typically occur annually which is an important factor for species dependent on vernal pools cyclic nature. Within one potential vernal pool, field biologists documented the presence of tadpoles of an unidentified frog species. The Applicant presumes that multiple amphibians, reptiles, crustaceans, mollusks, annelids, and insects could use the potential vernal pools documented. However, obligate vernal pool species which could use these potential vernal pools may be reduced to solely the spotted salamander and wood frog within the Facility Impact Area. These species were documented on the Herp Atlas database search but not physically identified within the potential vernal pools identified during the spring survey. No impact to these potential vernal pools or their adjacent uplands will occur as a result of the Project.

References

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New York Natural Heritage Program. 2017. *Conservation Guide for Vernal Pool*(s). Available from: http://www.guides.nynhp.org/guide.php?id=9902. Accessed February 2nd, 2018.

New York State Department of Environmental Conservation. 2018. *Woodland Pool Conservation*. Retrieved from http://www.dec.ny.gov/lands/52325.html.

New York State Department of Environmental Conservation. 2007. Herp Atlas Project. Available at: http://www.dec.ny.gov/animals/7140.html. Accessed April 2017

Lastly, DEC advises that as per Section 1001.22(f)(4), the Application should provide a discussion of the short- and long-term impacts to plants and animals and habitats that may result from the application of biocides, if any.

Response: Comment noted. In review of available public resources from the State of New York, reference and specified definition of the term biocides, is limited. It is presumed that the NYSDEC utilizes the term biocides as an alternative expression to pesticides. Such a comparison is evidenced through reference of the NYSDEC online resource discussing chemical and pollution control measures for cooling tower & pesticide applications (NYSDEC, 2018a). Likewise, the Applicant has presumed that such a definition of biocides also coincides with the definition outlined by the United States Environmental Protection Agency (EPA). The EPA defines biocides as "a diverse group of poisonous substances including preservatives, insecticides, disinfectants, and pesticides used for the control of organisms that are harmful to human or animal health or that cause damage to natural or manufactured products."

For purposes of the Project, the Applicant does not intend to use a vast majority of pesticides. However, the use of herbicides (which are a subset of pesticides) may be utilized, where allowed, and in reference to the vegetation management plan. The NYSDPS states in its Tree Trimming and Vegetation Management section that, "…herbicides provide the most efficient and effective way to remove unwanted plants from the rights-of-way in a manner that is least disruptive to the environment." The Vegetation Operations Manual (Manual) attached to the Application as Appendix 5-10, indicates that the potential use of herbicides will be limited to targeted management areas. For specific descriptions of management methods adopted for the Project vegetation management plan, please refer to the Manual located in Appendix 5-10 of the Application. It should be noted that the use of herbicides, where agency approved, is only one of many management methods to be potentially employed. Discussions of where herbicides can be applied and to what stands (in reference to species compositions) can be developed in consultation with the NYSDEC and the NYSDPS.

The use of herbicides can provide substantial benefits to vegetation management. Compared with other alternative means of vegetation control, such as mechanized clearing or hand clearing, herbicides are less expensive and less labor intensive, often safer to control, faster acting, result in less soil disturbance, and are sometimes more selective of target species through point-source application methods (Briggs, 1992). However, if herbicides are not used properly and management plans are not adhered to, adverse impacts can arise to the surrounding environment. Adverse impacts from herbicide application can occur if too large a dosage is used, the improper herbicide is applied, or if spraying occurs at an improper breadth, time, or climatic condition.

Primary impacts from herbicide application can occur in the form of physical contact and direct toxicity with non-target species (Briggs, 1992). Through strategic design of the vegetation management plan, organization of management areas into units (stands) allows for planning and implanting the best management method per stand. As such, herbicide usage as a management methodology will only occur after careful evaluation of its usage in the stand. Only after concluding that the application of the selected herbicides indicate a net benefit for the Project and local environs and limit the exposure of non-target species, will herbicides then be used. Herbicide usage is proposed to only occur in stands where the impact to target species outweighs the impacts to non-target species. Where feasible, some herbicides can be applied using spot applicators or injectors and in quantities which will minimize the exposure to non-pest plants, animals, and the surrounding locale. The Applicant also proposes to use approved herbicides developed specifically for use in the forestry industry. Such herbicides target specific species which are intended to be managed.

Secondary impacts from the use of herbicides can result from the employment of large scale, consistent, and non-selective sprayings which could expedite large changes in vegetation community structure. Such widespread shifts in community structure could indirectly, and potentially adversely, impact populations of birds, mammals, insects, and other animals. This could occur through physical changes in the nature of their local habitat, ecology, competition regime, and also from removal of specific vegetative species populations which are employed within fauna lifecycles (Pimentel, 2005). The Applicant presumes that per the strategic design of the vegetation management plan, selection of herbicide use as a management protocol will only occur for a select stand and at a frequency which manages the stand effectively. With increased specification on herbicidal application targeting uniform stands, the Applicant presumes that changes in the overarching vegetation community structure would be limited. As mentioned in the Application, vegetation cover type changes will occur in select areas as a result of the construction phase of the Project. However, vegetation management in the operations phase of the Project, and more specifically, the potential use of herbicides, is not likely to dramatically shift the local vegetation communities specific to the Project Area and as defined in Exhibit 22 of the Application. Per the manual, application of herbicides (if selected for a target stand), will not occur on a large enough scale and not target such a wide array of flora to elicit changes to vegetative communities. As such, intermittent and targeted herbicide use would not in turn, create largescale impacts to local ecologies or competition regimes. Adverse impacts to animals which may result in the shift in habitats of some areas will also be minor due to the presence of similar and undisturbed habitats in close proximity to the targeted stand where species could relocate without duress.

The Applicant will use Environmental Protection Agency (EPA) and New York State Department of Environmental Conservation registered and approved herbicides. Application of herbicides must be registered and approved for use in New York State based on the site that is being treated (e.g., forested areas, shrubs, and pasture, etc.). A Commercial Pesticide Use Applicator's License from the NYSDEC will be required for this Project. Personnel holding NYSDEC pesticide licenses are required to maintain their certifications by attending refresher courses that cover herbicide handling, mixing, and application techniques, understanding herbicide labels and

Safety Data Sheets (SDS), plant identification, protection of sensitive areas, and safe work practices.

The following herbicide use procedures will be conducted to ensure natural resource protection.

(1) Implement Technology Based Effluent Limitations: use the lowest effective amount of pesticide/herbicide, application of optimal dose of pesticide herbicide, performance of maintenance activities on application equipment to reduce possibility of leaks or spills, and calibration and cleaning of equipment to ensure effective application. These activities are to minimize the excessive discharge of pesticide/herbicides by controlling the amount applied and avoiding leaks or spills.

(2) Adhere to Monitoring Provisions: visual monitoring of the application area to look for adverse effects to non-target species and disruption to the function of the larger landscape.

(3) Take Corrective Action: if a spill or leak occurs, non-target organisms are impacted; maintenance activities are not being conducted, and if other best management practices are not being met the methods and control measures must be revised.

(4) Adverse Incident Notification: if there is a spill of any liquid at any amount (petroleum included) that if released would be likely to pollute lands or waters of the state than the state must be immediately notified at 1-800-457-7362 (NYS Spill Hotline) (NYSDEC, 2018b).

(5) Record Maintenance: if an adverse incident report is filed or any corrective actions are needed the documentation must be retained.

Labels for all chemicals that are proposed for use shall be documented by the Applicant. A written record of chemical mixes and rates of application will be maintained by the Applicant on a weekly basis for the duration of work assigned. Care must be taken to prevent off-site damage. The Applicant will be responsible for all damage to timber and/or vegetation outside the right-of-way and other Project areas. Restricted use herbicides will be reviewed before use.

The Applicant proposes that in reference to the information given above, the strategic design of the vegetation management plan, the adherence to less toxic herbicides, and herbicide application to only target stands, will mitigate primary and secondary impacts to plants, animals, and their habitats which may result from the application of biocides for the Project.

References

Briggs, S.A. 1992. *Basic Guide to Pesticides: Their Characteristics and Hazards*. Washington, DC: Taylor & Francis.

Freedman, B. *Environmental Ecology*. 1995. 2nd ed. San Diego: Academic Press.

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Hayes, W.J., and E.R. Laws, eds. 1991. H*andbook of Pesticide Toxicology*. San Diego: Academic Press.

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1001.23 - Exhibit 23: Water Resources and Aquatic Ecology

1001.23 (a)(3) - Figure 23-1 should indicate the direction(s) of groundwater flow within the Project Area. Specifically, direction of flow in the shallow aquifer.

Response: Comment noted. An update to Figure 23-1 is included as Attachment W hereto. Arrows were applied to the figure to indicate general groundwater flow within mapped aquifers.

1001.23 (b)(4) - Table 23-2 does not include stream crossing methodologies and protection measures as required per Stipulation 23(b)(4).

Response: Comment noted. Stream crossing methodologies have been added to Table 23-2 which is included in Attachment X, hereto.

Impacts to stream features listed in the updated Table 23-2 have been minimized through the siting of components to avoid stream impacts to the maximum extent practicable. Stream crossings have been placed in locations of existing access ways, or along narrow sections of stream channels to reduce impacts, and in some locations to consolidate impacts to previously disturbed stream reaches.
All crossings will be done in accordance with NYSDEC and USACE regulations and conditions. Best management practices (BMPs) will be developed in consultation with the NYDPS, NYSDEC, and USACE and submitted as part of the Project Compliance Filing. During construction, the contractor will adhere to any special conditions of the 402 general stormwater permit issued by the NYSDEC and USACE, which may include low impact stream crossing techniques, seasonal work restrictions, and/or alternative stream crossing methods. Wetlands temporarily disturbed during construction will be restored to their original grade.

All NYSDEC-protected streams are anticipated to either be crossed overhead or via horizontal directional drill (HDD) at narrow crossing locations, which will reduce impacts to protected

streams and avoid any adverse in-stream work conditions. In stream features not classified as protected NYSDEC streams, open trenching is more likely to occur. When working in streams is required, the use of temporary pump-around techniques or coffer dams will be used. Appropriate sediment and erosion control measures will be installed and maintained according to the NYSDEC-approved final Project SWPPP, to be submitted in the Compliance Filing, which will be confirmed during final engineering and prior to construction. It is proposed that utilizing and/or upgrading existing stream crossings can provide improved water quality, as it will not only provide effective construction access but it will also direct farm equipment (or other vehicles) which use the access ways away from routinely impacting streams. By applying equipment restrictions, chemical use restrictions, and specific erosion and sedimentation control measures, the Applicant will reduce adverse impacts to water quality and any aquatic organisms which rely on these streams.

1001.24 - Exhibit 24: Visual Impacts

1001.24(b)(1) - Viewshed maps depicting areas of project visibility within the facility study area: Paper copies of viewshed maps at 1:24,000 scale are not included in Application documents. Provide copies of full-scale Figures 7 and 8 "1:24,000 Scale Map Blade Tip Viewshed Analysis with Trees, LSZ, & Visual Resources" and "1:24,000 Scale Map Blade Tip Viewshed Analysis with Trees and Visual Resources." Both Maps are labeled "Figure 7" which does not correspond with Ex. 24 at Page 25 which refers to "Figure 8." Provide full scale prints of maps and clarify figure numbering.

Response: Comment noted. The figure numbering within Appendix 24-1, Attachment 1 has been clarified to indicate that “Figure 7” is “1:24,000 Scale Map Blade Tip Viewshed Analysis with Trees, LSZ, & Visual Resources” and “Figure 8” is “1:24,000 Scale Map Blade Tip Viewshed Analysis with Trees and Visual Resources." The viewshed maps have been included in the applicable paper copies in Attachment Y, hereto. Additional paper copies of the viewshed maps can be provided upon request.

1001.26 - Exhibit 26: Effect on Communications

1001.26(b) – The Application must identify all existing underground cable and fiber optic major transmission telecommunication lines, within a two-mile radius of the facility and point of interconnection.

Response: Comment noted. On behalf of the Applicant, Fisher Associates conducted an on-site survey, along with outreach, and identified all existing underground cable and fiber optic major transmission telecommunication lines within a two-mile radius of the Facility Site. Based on the findings of this effort, communication utilities and infrastructure within the search area includes the Steuben Radio Tower, Armstrong Electric, Southern Tier Network, Time Warner Cable, NYSEG, Verizon Wireless, and Steuben Rural Electric Cooperative. The Applicant has obtained the data from Frontier Communications Corporation for the Facility Site, but has not received data for the 2-mile buffer as of submittal of this Supplement to the Application.

No impacts to these communication lines or infrastructure are anticipated. Project infrastructure will be sited above or below the identified communication line routes. Should Project infrastructure or construction equipment come in close proximity to these communication line routes, the Applicant will work directly with the aforementioned companies to mitigate any potential impact and coordinate construction operations with these companies, as necessary. An updated figure depicting communication utilities and infrastructure within the pre-determined search area is provided herein as Attachment Z.

1001.29 – Exhibit 29: Site Restoration and Decommissioning

Provide a detailed estimate to support the proposed decommissioning funding upon the cessation of operation of the Facility based on the expected turbine model(s) to be used and actual decommissioning costs from other similar projects if available.

Response: Comment noted. The Applicant has prepared a Decommissioning Plan (the Plan) that outlines the methodology to decommission the Project at the end of the Project's useful life, which was included in the Application as Appendix 29-1 Decommissioning Plan & Restoration. Section IV of Appendix 29-1 provides detailed information related to the estimated costs of decommissioning the project on a per turbine basis prepared using information from third party contractors, consultants, and engineers. Estimated decommissioning costs for the balance of plant is also provided in Section IV of Appendix 29-1. All information related to the estimated costs of decommissioning can be found in *Table 1. Decommissioning Cost Summary* located in Appendix 29-1.

1001.32 – Exhibit 32: State Laws and Regulations

This section should include Public Service Law Section 68 as a required approval.

Response: Comment noted. Exhibit 32 has been revised to include the NYPSL Section 68 approval, consistent with the Siting Board's interpretation of the scope of the Commission's Section 68 review in the context of a project subject to Article 10, as explained in the Siting Board's Cassadaga Order in Case 14-F-0490, dated January 17, 2018.

1001.35 - Exhibit 35: Electric and Magnetic Fields

1001.35 (b)(5) - The Applicant did not include Station Numbers in order to help identify the locations all structures, as required.

Response: Comment noted. Station Numbers have been added to the drawings included as part of the Electric and Magnetic Field (EMF) Calculation Report. This Report is included as Attachment AA of the Supplement to the Application.

Updated Information

As discussed in the Application, in order to help identify private water well locations, well survey questionnaires were mailed to all landowners of tax parcels within one miles of the Project Area. TRC, as the Applicant's environmental consultant, sent out questionnaires to the owners of 496 different tax parcels. TRC received 197 responses to the surveys, which were included as an Appendix to the Application. Since then, TRC has received three additional responses (completed water well surveys), which are included as Appendix BB of the Supplement to the Application.