

## AMENDMENT 4

**(The existing Local Law shall be amended by the addition of the following;  
the repeal of the identified provision and replacement as follows)**

**A LOCAL LAW TO AMEND  
LOCAL LAW NO. 1 of 2011, entitled  
WIND ENERGY FACILITIES LAW OF THE  
TOWN OF ORLEANS, NEW YORK**

Section 2 Purpose  
... repeal and replace . . .

The Town Board of the Town of Orleans adopts this Local Law to regulate the placement of wind energy conversion systems to protect the public safety health and welfare; to provide a regulatory structure that promotes the protection of Town of Orleans residents; to minimize the adverse impacts on the Town's character and environment and economy and property values; to minimize negative impacts on the unique resources including, but not limited to, the Seaway Trail, the St Lawrence River and adjacent lands and waterways; and the residential and farming communities of the Town.

Section 3 Authority  
... **add** ...

- G. New York Agriculture and Markets Law.
- H. New York Real Property Tax Law.
- I. New York Executive Law.

Section 4 Findings  
... **repeal and replace** ...

1. The Orleans Town Board and the Planning Board have the Responsibility to Protect the Health, Safety and Welfare of ALL Orleans Residents; This includes:
  - People with no Wind Leases; and
  - People with Wind Leases
  - Short-sighted planning can result in creation of problem industries which adversely affect public health and quality of life, can diminish aesthetics and compromise community character.

Commercial Wind Energy Facilities are not exempt from these problems and careful siting and protections are of paramount importance. This Local Law will contribute to this effort. The existence of Article X of the Public Service Law does not negate this responsibility, and in fact recognizes it. This Law is not unduly burdensome to the mandates or the process set forth in Article X, but is rather compatible with them.

2. The findings set forth in this Section are cumulative and interactive, and shall be liberally interpreted in conjunction, with one another.
3. Wind Energy Conversion Systems have increased significantly in number, and can potentially be sited without sufficient regard to their impact on the health, welfare and safety of residents, especially in small rural communities.
4. Wind Energy Conversion Systems should benefit the residents of the local areas where they are sited.
5. Wind Energy Conversion Systems are, by their very nature not aesthetically pleasing, due to their height, disruption of views and skylines, especially in rural level landed communities without many high structures.
6. The Town of Orleans is a rural community devoid of large hills and consists of mostly flat terrain.
7. The Town of Orleans is an agricultural community supporting varied agricultural uses and is in the heart of the St Lawrence River region and Fort Drum.
8. The Town of Orleans provides residences for many Soldiers in the 10th Mountain Division.
9. The Town of Orleans actively supports Fort Drum as the Preferred Site for an East Coast Missile Defense Agency Ground Based Interception site and intends to avoid any interference with Fort Drum and/or that potential expansion.
10. Fort Dum aircraft perform substantial and frequent aviation maneuvers in the area. Wind Energy Facilities at the Western edge of the Wheeler Sack Airfield may have negative operational impacts on the operational effectiveness and efficiency of aviation maneuvers. This might negatively impact National Defense and/or the possibility of Fort Drum closure during any future Department of Defense Base Realignment and

Closure proceedings. The Town intends to continue to support, and protect, Fort Drum.

11. The Town of Orleans has very few tall structures.
12. The Town of Orleans is bounded on the east, south and west by Towns which share Orleans' agricultural and rural residential character, and are similarly low, flat areas.
13. The Town of Orleans is bordered on the north by the Nationally Acclaimed Scenic St Lawrence Seaway that is populated by more than 1000 unique Islands.
14. Commercial/Industrial Wind Energy Facilities represent potential for extreme adverse aesthetic impacts due to their height as well as other effects.
15. The Town of Orleans is located on a major migration route for many species of birds, and is habitat for many species, both year round and seasonal.
16. The bat population in the Town of Orleans is important and in distress.
17. Commercial/Industrial Wind Energy Facilities are known to pose danger to birds and bats, and have been demonstrated to kill numerous members of both.
18. Commercial/Industrial Wind Energy Facilities can cause danger to humans and animals, including livestock resulting from ice throw, collapse, contamination, and annoyance.
19. Geology/Water Contamination

Horse Creek's geology, especially its Karst topography, appears incompatible with industrial development, specifically in regard to industrial wind construction requirements and conditions.

Risks include:

- Aquifer and well water contamination via soil overburden infilling on shallow bedrock in a karst topography-rich environment.

- Sinkhole collapse at turbine bases via increased bedrock erosion and dissolution.
- Moderate regional seismic risk, according to the United States Geological Survey.

In formulation of this Local Law, many studies have been reviewed and taken into consideration. Wind energy laws in other locations have been reviewed and considered; experiences of other areas have been studied.

20. If not properly regulated, installation of Wind Energy Conversion Systems in areas with Karst Geology have the potential to create numerous additional drainage paths which allows contaminated ground water to directly enter directly into the aquifer below. Orleans has many locations in which contaminated groundwater flows first above ground then disappears into to a sink hole that later reappears above water and often repeats. Thus there are often multiple paths that construction wastes can be dissolved by ground water and can contaminate the ground water. For instance construction of miles of wide gravel access roads increases the number of drainage paths for the contaminated water to contaminate the drinking water for Orleans.
21. Wind Energy Conversion Systems, when improperly sited, are known to adversely affect property values, and cause economic hardship to property owners.
22. The Town of Orleans contains numerous rural newly constructed homes and stretches of homes, in and around LaFargeville along Route 180 as well as disbursed residences, which residents have chosen as their homes, often because of a love for rural pastoral lifestyle.
23. Town of Orleans residents and visitors enjoy outdoor activities, including marine (boating, fishing, sailing, swimming, kayaking, etc.) and land (hunting, hiking, cycling, snowmobiling, jogging, etc.)
24. Wind Energy Conversion Systems may be significant sources of noise, including infrasound that, if unregulated, can negatively affect quiet enjoyment of the area, properties, and health and quality of life of residents.

25. Construction of Wind Energy Conversion Systems can create traffic problems and can cause damage to local roads and infrastructure.
26. Wind Energy Conversion Systems have the potential to cause electromagnetic interference with various types of communications, cell phones, radio, TV, etc.
27. Wind Energy Conversion Systems have the potential to adversely interfere with orderly development of the Town of Orleans, including single family residences and small subdivisions by making such development unappealing or impossible.
28. Wind Energy Conversion Systems need to be regulated for removal when no longer utilized.
29. The Town of Orleans has regulated wind energy facilities for the past decade through local laws. This Local Law represents an updating of said local law.

In formulation of this Local Law, many studies have been reviewed and taken into consideration. Wind energy laws in other locations have been reviewed and considered; experiences of other areas have been studied.

In 2008 Orleans appointed a Wind Committee and Published two reports that are available at the Town of Orleans NY WEBSITE. The report results steered many parts of this revision to the 2011 Wind Law.

The Town of Orleans has had its Planning Board and other citizens review the need for this law and to make recommendations; its conclusions and recommendations have been duly considered and given great weight.

When considering large scale construction and maintenance, due weight should be given to the following:

- a) The relative distress caused to a community and its residents;
- b) The actual necessity for such facility given energy production in the area and region, including clean energy production;
- c) Past and present stresses and disruption imposed upon an area due to all types of energy production;

- d) Alternatives to facilities, including location in other areas, location in areas where demand is needed, alternative methods of producing clean energy; and burden on a community and its residents versus reward to community and its residents, with emphasis upon quality of life.

Section 6 Permits Required; Transfer, Modification.

**. . . repeal and replace . . .**

- F. Exemptions. No permit or other approval shall be required under this Local Law for mechanical, non-electrical Wind Energy Conversion Systems (WECS) utilities solely for agricultural operations, commonly referred to as "wind mills."

Section 7 Definitions

**. . . repeal and replace . . .**

RESIDENCE – means any dwelling suitable for habitation existing in the Town of Orleans on the date an application is received. For purpose of this definition, "suitable for habitation" shall mean that its primary purpose is for private occupancy.

**. . . repeal and replace . . .**

SITE – The parcel(s) of land where a Wind Energy Facility is to be placed. The site can be publicly or privately owned by an individual(s) controlling single or adjacent properties. Where multiple lots are in joint ownership, the combined lots shall be considered as one for purpose of applying set back requirements.

**. . . repeal and replace . . .**

WIND ENERGY CONVERSION SYSTEM (WECS) – A machine that converts the kinetic energy in the wind into a usable form (commonly known as "wind turbine" or "wind mill") with a rated capacity of more than 100 kw.

Section 10 Applications for Wind Energy Permits for Wind Energy Conversion Systems (WECS).

**. . . repeal and replace . . .**

- J. Decommissioning Plan: The applicant shall submit a decommissioning plan which shall include the following information at a minimum:
  - 1.) The anticipated life of the WECS;
  - 2.) The estimated decommissioning costs including contingency costs of at least 20% (in current US Dollars) as provided by a fully licensed New York engineer having appropriate and relevant experience;
  - 3.) The basis for the estimates;
  - 4.) The method for ensuring that funds will be available for decommissioning and restoration;

- 5.) The method , such as by annual estimate by a New York licensed Engineer, that decommissioning costs and restoration costs will remain current;
- 6.) The manner in which the WECS will be decommissioned and the sites restored, which shall include at a minimum the removal of all structures, materials, and debris to a depth of three (3) feet, restoration of soil and vegetation compatible with surrounding vegetation;
- 7.) Surety for Removal, when Decommissioned. The applicant shall place with the Town an acceptable letter-of-credit, bond, cash into the Escrow Account or other form of security that is sufficient to cover the cost of removal at the end of each turbine's useful life, as detailed in the decommissioning plan. Such surety shall be at least \$200,000 for each wind turbine. The Town Board may approve a reduced surety amount that is not less than 120% of a cost estimate that is certified by an Engineer, salvage company, or other expert acceptable to the Town Board. This calculation will not take into account any estimated salvage values.

The Town shall use this surety to assure the faithful performance of the decommissioning terms and conditions of the Applicant's approved plan and this law. The full amount of the bond or security shall remain in full force and effect until all necessary site restoration is completed to return the site to a condition comparable to what it was prior to the turbine as determined by the Town Board. The Applicant will be responsible for assuring that any subsequent Assigns of the turbine will provide acceptable surety to the Town, prior to any transfer of ownership.

K. Complaint Resolution Process  
**. . . repeal and replace . . .**

1. The offended party shall first bring their complaint to the Zoning Enforcement Officer. If the Zoning Enforcement Officer finds it to be valid, he, or she, will notify the owner/operator of the WECS of the complaint. The owner/operator shall have the opportunity to resolve the complaint. The time frame of resolution will be dependent on the nature of the complaint. The complaint may include, but will not be limited to: excessive noise, flicker or shadow effect, change in water quantity or quality, loss of or diminished telephone, TV, radio reception, interference with a medical device, changes in value to the residence, new or increased presence of radon gas. Should it be necessary for the validity of the complaint to be verified by an outside consultant, the Town Board will select and employ an individual/entity to perform testing, collect data or whatever else may be

necessary to determine validity. The funds for payment of these services will come from the established escrow account.

2. The Complaint Resolution Process will include, but not be limited to, the following categories:
  - a. Protection of Aquifers, Ground Water and Wells: When a written complaint is received by the Zoning Enforcement Officer from a resident regarding disturbance of an aquifer, ground water or well water, the Town will notify the licensee within 72 hours, if possible. The Zoning Enforcement Officer will determine the validity of the complaint. The Town Board may hire a NYS licensed engineer at the expense of the licensee to verify validity of the complaint. If the complaint is found to be valid, the licensee must make potable water available to the resident(s) immediately and establish a course of action to resolve the complaint. If the complaint is verified and the well is found to contain toxins, the licensee and/or the Town must notify the Department of Environmental Conservation (NYS DEC) of the finding. If the circumstance falls under the jurisdiction of the NYS DEC, the NYS DEC will assume responsibility for corrective actions. If the violation is not corrected, the Town Board may take enforcement as authorized by law.
  - b. Noise/Sleep Interference Complaint Resolution Process: When a written complaint supported by a log listing the times of excessive noise is provided to the Zoning Enforcement Officer from a non-participant alleging noise disturbance from a wind turbine(s), the licensee will be informed of the complaint within 72 hours, if possible, after receipt of the complaint. The validity of the complaint will be determined by the Zoning Enforcement Officer. The Town may retain an independent acoustic consultant paid for with the funds in the escrow account, as necessary. If the licensee is found to be non-compliant with the Town's Wind Energy Facilities Law noise standards, the violation must be corrected. If the violation is not corrected, the Town Board may take enforcement as authorized by law.

If the validity of the complaint requires the services of an acoustical consultant, the procedure described below must be followed:

Violations and enforcement shall be determined by measurement without undue timing constraints. The Town will use the services of an outside contractor, as necessary, to determine the violation and associated enforcement actions. The Town's acoustical consultant

shall be a member of the National Council of Acoustical Consultants (NCAC) with a specialty in environmental noise, and the consultant's project leader shall be a Member, Board Certified of the Institute of Noise Control Engineering of the USA. The protocol described below must generally be followed but may be modified as circumstances require by the acoustical consultant provided that modifications generally conform to the protocol.

- (1) Initially a preliminary study shall be conducted for a period of 30 minutes. During the 30 minute period, the equivalent level (LEQ) generated by the noise shall be measured. The measurement shall be on the complainant's property line nearest the noise source. Measurements shall be entirely within the appropriate time period e.g. during the nighttime for nighttime enforcement and the noise source shall operate continuously (if normal operation) during the 30 minute measurement.
- (2) If the noise source is intermittent or if the noise is not present at the time of the preliminary enforcement survey, a more extensive and detailed survey shall be undertaken to monitor noise levels over a longer period. The licensee shall fully cooperate with Town officials and their agents to ensure accurate measurements, including turning the source on and off as required.
- (3) For both types of surveys, the microphone shall be situated between 4 and 4.5 feet above the ground. Measurements shall be conducted within the general provisions of ANSI S1.13-2005, and using a meter that meets at least the Type 2 requirements of ANSI S1.4 and S1.4A-1985 (R2006). The instrument noise floor shall be at least 10 dB below the lowest level measured.
- (4) A calibrator shall be used as recommended by the manufacturer of the sound- level meter. The fundamental level of the calibrator and the sensitivity of the sound-level meter shall be verified annually by a laboratory using procedures traceable to the National Institute of Standards and Technology.
- (5) A wind screen shall be used as recommended by the sound-level meter manufacturer.

- (6) An anemometer shall be used and shall have a range of at least 5 to 15 miles per hour (2.2 to 6.7 meters per second) and an accuracy of at least  $\pm 2$  miles per hour ( $\pm 0.9$  meters per second).
  - (7) For the detailed, long-term study a compass shall be used to measure wind direction to at least an 8-point resolution: N, NE, E, SE, S, SW, W, NW. Measurements shall be A-weighted, or, alternatively, in one-third-octave bands. For A-weighted measurements, the uncertainty (tolerance) of measurements shall be 1 dB for a type 1 meter and 2 dB for a type 2 meter. For one-third-octave band measurements, the meter shall meet the type 1 requirements of ANSI S12.4 and S12.4a-1985 (R2006), and the uncertainty of measurements shall be 5 dB in each and every one-third-octave band.
  - (8) For all measurements, the surface wind speed, measured at a 1.5 m height, shall be less than 5 m/s.
  - (9) The report shall include a sketch of the site showing distances to the structure(s), to the property line, etc., and several photographs showing the structure(s), the property, and the acoustical instrumentation. All instrumentation shall be listed by manufacture, model, and serial number. This instrumentation listing shall also include the A-weighted and C-weighted noise floor due to weather or other natural phenomena and the one-third-octave band noise floors, if utilized, for each sound-level meter used.
- c. Electromagnetic/Stray Voltage Complaint Resolution Process: Upon receipt of a written complaint from a non-participant alleging violations associated with electromagnetic interference or stray voltage, the Zoning Enforcement Officer will provide a copy of the complaint to the licensee within 72 hours, if possible. The Zoning Enforcement Officer will determine validity of the complaint. The Town may hire, if necessary, a certified electrical engineer consultant to conduct a stray voltage investigation or electromagnetic interference investigation at the cost of the licensee, to assist in determining complaint validity.

If the complaint is determined to be valid, the licensee shall resolve the problem and return the facility to full compliance with the law within a time period determined by the Zoning Enforcement Officer. If the violation is not corrected, the Town Board may take enforcement as authorized by law.

Q.

**. . . repeal and replace . . .**

- (5) **Property Value Analysis:** Property Value Analysis shall be prepared by a New York State Certified General Real Estate Appraiser who is also a current Member of the Appraisal Institute regarding the potential impact of value of real estate in the Town of Orleans. Special emphasis shall consider impacts within a one (1) mile radius from each WECS as of each annual real property valuation date (per NY RPTL) during the life of the WECS, and making use of a highest and best use analysis, as appropriate.
  
- (8) **Ground Water Impacts.** An analysis of impacts on local ground water resources shall be prepared regarding impacts anticipated during construction, reconstruction, modification or operation of a WECS. An assessment of potential immediate and long-term impacts local flora and fauna, micro and macro habitats, and ground and surface water related, but not limited to, excavation, blasting, clear cutting and grinding during the Site preparation phase. A geotechnical report shall include soils engineering and engineering geologic characteristics of the site based on Site sampling and testing, a bedrock profile within one (1) mile of the Site, information on depth of well, average flow rate and with permission by owner, test of water quality for all wells within two (2) miles of the Site, grading criteria for ground preparation, cuts and fills soil compaction, and a slope stability analysis. Residential water quality baseline testing shall analyze for the following: Coliform bacteria, lead Nitrate, Nitrite, Iron, Manganese, Sodium, PH, Hardness, Alkalinity, Turbidity, Methane, and Hydrogen Sulfate and any other analytic deemed necessary by the Planning Board. Samples shall be collected and analyzed by a NYSDOH ELAP certified laboratory and be representative of the potable water supply of the residence/occupant. Baseline samples shall be collected immediately prior to construction activities or sub surface, pre-construction activities, and collected thereafter at a frequency to be determined by the Planning Board.

**. . . add . . .**

Y. A full and complete copy of all information, records, studies, etc. as specified by each of the following Exhibits as set forth in Chapter X Certification of Major Electric Generating Facilities Subchapter A Regulations Implementing Article 10 (sometimes referred to as Article X) of the Public Service Law as enacted by Chapter 388, Section 12 of the Laws of 2011 shall be provided:

## 1001.4 Exhibit 4: Land Use

Exhibit 4 shall contain:

- (a) A map showing existing land uses within the study area at a scale of \_\_\_\_\_.
- (b) A map at a scale of \_\_\_\_\_ of any existing overhead and underground major facilities for electric, gas or telecommunications transmission within the study area.
- (c) A map at a scale of \_\_\_\_\_ of all properties upon which any component of the major electric generating facility or the related facilities would be located, and all properties within 5,000 feet of such properties, that shows the current land use, tax parcel number and owner of record of each property, and any publically known proposed land use plans for any of these parcels.
- (d) A map at a scale of \_\_\_\_\_ of existing zoning districts, and proposed zoning districts within the study area, including a description of the permitted and the prohibited uses within each zone.
- (e) A map at a scale of \_\_\_\_\_ of all publicly known proposed land uses within the study area, from interviews with local planning officials, from the public involvement process, or from other sources.
- (f) Maps at a scale of \_\_\_\_\_ showing designated coastal areas, inland waterways; groundwater management zones; designated agricultural districts; flood-prone areas; and critical environmental areas designated pursuant to the State Environmental Quality Review Act.
- (g) Maps at a scale of \_\_\_\_\_ showing recreational and other land uses within the study area that might be affected by the sight, sound or odor of the construction or operation of the facility, interconnections and related facilities, including Wild, Scenic and Recreational River Corridors, open space, and any known archaeological, geologic, historical or scenic area, park, designated wilderness, forest preserve lands, scenic vistas, and conservation easement lands.
- (h) A qualitative assessment of the compatibility of the facility and any interconnection, including any off-site staging and storage areas, with existing, proposed and allowed land uses, and local and regional land use plans, within a 5 mile radius of the facility site and any interconnection route. The qualitative assessment shall include an evaluation of the short-and long-term effects of facility-generated noise, odor, traffic and visual impacts on the use and enjoyment of those areas for the current and planned uses. The assessment shall identify the nearby land uses of particular concern to the community, and shall address the

land use impacts of the facility on residential areas, schools, civic facilities, recreational facilities, and commercial areas

- (i) Aerial photographs of all properties within the study area of such scale and detail to enable discrimination and identification of all natural and cultural features.
- (j) Overlays on aerial photographs which clearly identify the facility site and any interconnection route, the limits of proposed clearing or other changes to the topography, vegetation or man-made structures, and the location of access and maintenance routes.
- (k) All aerial photographs shall reflect the current situation. All aerial photographs shall indicate the photographer and the date photographs were taken.

### **1001.13 Exhibit 13: Real Property**

Exhibit 13 shall contain:

- (a) A survey at a scale of \_\_\_\_\_ of the facility site showing property boundaries with tax map sheet, block and lot numbers; the owner of record of all parcels Included in the site and for all adjacent properties; easements, grants and related encumbrances on the site parcels; public and private roads on or adjoining or planned for use as access to the site; zoning and related designations applicable to the site and adjoining properties.
- (b) A property/right-of-way map at a scale of \_\_\_\_\_ of all proposed interconnection facilities and off-property/right-of-way access drives and construction lay-down or preparation areas for such interconnections.
- (c) A demonstration that the applicant has obtained title to or a leasehold interest in the facility site, including ingress and egress access to a public street, or is under binding contract or option to obtain such title or leasehold interest, or can obtain such title or leasehold interest.
- (d) A statement that the applicant has obtained, or can obtain, such deeds, easements, leases, licenses, or other real property rights or privileges as are necessary for all interconnections for the facility.

### **1001.15 Exhibit 15: Public Health and Safety**

Exhibit 15 shall contain:

A statement and evaluation that identifies, describes, and discusses all potential significant adverse impacts of the construction and operation of the facility, the

interconnections, and related facilities on the environment, public health, and safety, at a level of detail that reflects the severity of the impacts and the reasonable likelihood of their occurrence, identifies the current applicable statutory and regulatory framework, and also addresses:

- (a) impacts due to blade throw, tower collapse, audible frequency noise, low-frequency noise, ice throw and shadow flicker;
- (b) maps at a scale of \_\_\_\_\_ of the study area and analysis showing relation of the proposed facility site to public water supply resources; community emergency response resources and facilities including police, fire and emergency medical response facilities and plans; emergency communications facilities; hospitals and emergency medical facilities; designated evacuation routes; existing known hazard risks including flood hazard zones, storm surge zones, areas of coastal erosion hazard, landslide hazard areas, areas of geologic, geomorphic or hydrologic hazard; dams, bridges and related infrastructure; explosive or flammable materials transportation or storage facilities; contaminated sites; and other local risk factors;
- (c) any adverse impact on the environment, public health, and safety that cannot be avoided should the proposed facility be constructed and operated, and measures for monitoring and measuring such impacts;
- (d) any irreversible and irretrievable commitment of resources that would be involved in the construction and operation of the facility.

### **1001.18 Exhibit 18: Safety and Security**

Exhibit 18 shall contain:

- (a) A preliminary plan for site security of the proposed facility during construction of such facility, including site plans and descriptions of the following site security features:
  - (1) access controls including fences, gates, bollards and other structural limitations;
  - (2) electronic security and surveillance facilities;
  - (3) security lighting, including specifications for lighting and controls to address work-site safety requirements and to avoid off-site light trespass; and
  - (4) setback considerations for facility components which may present hazards to public safety.
- (5) A preliminary plan for site security of the proposed facility during operation of such facility, including site plans and descriptions of the following site security features:

- (a) access controls including fences, gates, bollards and other structural limitations;
  - (b) electronic security and surveillance facilities;
  - (c) security lighting, including specifications for lighting and controls to address work-site safety requirements and to avoid off-site light trespass;
  - (d) lighting of facility components to ensure aircraft safety;
  - (e) setback considerations for facility components which may present hazards to public safety, and
  - (f) a description of a cyber-security program for the protection of digital computer and communication systems and networks that support: the facility demonstrating compliance with current standards issued by a standards setting body generally recognized in the information technology industry, including, but not limited to, the federal Department of Commerce's National Institute of Standards and Technology, the North American Electric Reliability Corporation, or the International Organization for Standardization, and providing for periodic validation of compliance with the applicable standard by an independent auditor.
- (b) A preliminary safety response plan to ensure the safety and security of the local community, including:
- (1) an identification of contingencies that would constitute a safety or security emergency;
  - (2) emergency response measures by contingency;
  - (3) evacuation control measures by contingency; and
  - (4) community notification procedures by contingency
- (c) A description of all on-site equipment and systems to be provided to prevent or handle fire emergencies and hazardous substance incidents.
- (d) A description of all contingency plans to be implemented in response to the occurrence of a fire emergency or a hazardous substance incident.

### **1001.19 Exhibit 19: Noise and Vibration**

Exhibit 19 shall contain:

A study of the noise impacts of the construction and operation of the facility, related facilities and ancillary equipment. The name and qualifications to perform such analyses of the preparer of the study shall be stated. If the results of the study are certified in any manner by a member of a relevant professional society, the details of such

certification shall be stated. If any noise assessment methodology standards are applied in the preparation of the study, an identification and description of such standards shall be stated. The study shall include:

- (a) A map of the study area showing the location of sensitive sound receptors in relation to the facility, related facilities and ancillary equipment (including any related substations). The sensitive sound receptors shown shall include residences, outdoor public facilities and areas, hospitals, schools and other noise-sensitive receptors.
- (b) An evaluation of ambient pre-construction baseline noise conditions, including A-weighted/dBA sound levels, prominent discrete (pure) tones, at representative potentially impacted noise receptors, using actual measurement data recorded in winter and summer and during day and night as a function of time and frequency using a suitable and suitably calibrated sound level meter (SLM) and octave band frequency spectrum analyzer, or similar equipment. The ambient pre-construction baseline sound level should be filtered to exclude seasonal and intermittent noise.
- (c) An evaluation of future noise levels during construction of the facility and related facilities including predicted A-weighted/dBA sound levels at potentially impacted and representative noise receptors, using computer noise modeling.
- (d) An estimate of the noise level to be produced by operation of the facility, related facilities and ancillary equipment assuming wind-induced background noise or stable atmospheric conditions, as appropriate, and not assuming any attenuation of sound that transiently occurs due to weather or temperature.
- (e) An evaluation of future noise levels during operation of the facility, related facilities and ancillary equipment including predicted A-weighted/dBA sound levels, prominent discrete (pure) tones, and amplitude modulated sound, at potentially impacted and representative noise receptors, using computer noise modeling, and an analysis of whether the facility will produce significant levels of low frequency noise or infrasound.
- (f) A statement in tabular form of the A-weighted/dBA sound levels indicated by measurements and computer noise modeling at the representative external property boundary lines of the facility and related facilities and ancillary equipment sites, and at the representative nearest and average noise receptors, for the following scenarios:
  - (1) Daytime ambient noise level - a single value of sound level equivalent to the level of sound exceeded for 90% of the time during the daytime hours (7 am - 10 pm) of a year (L90).

- (2) Summer nighttime ambient noise level - a single value of sound level equivalent to the level of sound exceeded for 90% of the time during the nighttime hours (10 pm - 7 am) during the summer ( $L_{90}$ ).
  - (3) Winter nighttime ambient noise level - a single value of sound level equivalent to the level of sound exceeded for 90% of the time during the nighttime hours (10 pm - 7 am) during the winter ( $L_{90}$ ).
  - (4) Worst case future noise level during the daytime period - the daytime ambient noise level ( $L_{90}$ ), plus the noise level from the proposed new sources modeled as a single value of sound level equivalent to the level of sound exceeded for 10% of the time by such sources under normal operating conditions by such sources in a year ( $L_n$ ).
  - (5) Worst case future noise level during the summer nighttime period the summer nighttime ambient noise level ( $L_{90}$ ), plus the noise level from the proposed new sources modeled as a single value of sound level equivalent to the level of sound exceeded for 10% of the time by such sources under normal operating conditions by such sources in a year ( $L_n$ ).
  - (6) Worst case future noise level during the winter nighttime period the winter nighttime ambient noise level ( $L_{90}$ ), plus the noise level from the proposed new sources modeled as a single value of sound level equivalent to the level of sound exceeded for 10% of the time by such sources under normal operating conditions by such sources in a year ( $L_n$ ).
  - (7) Daytime ambient average noise level - a single value of sound level equivalent to the energy-average ambient sound levels ( $L_{eq}$ ) during daytime hours (7 am -10 pm); and
  - (8) Typical facility noise levels - the noise level from the proposed new sources modeled as a single value of sound level equivalent to the level of the sound exceeded 50% of the time by such sources under normal operating conditions by such sources in a year ( $L_{50}$ ).
  - (9) Typical future noise level during the daytime period - the energy-average ambient sound level during daytime hours ( $L_{eq}$ ), plus the noise level from the proposed new sources modeled as a single value of sound level equivalent to the level of the sound exceeded 50% of the time by such sources under normal operating conditions by such sources in a year ( $L_{50}$ ).
- (g) A description of the noise standards applicable to the facility, including any local requirements, and noise design goals for the facility at representative potentially impacted noise receptors, including residences, outdoor public facilities and areas, schools, other noise-sensitive receptors, and at representative external property boundary lines of the facility and related facilities and ancillary equipment sites.
- (h) A tabular comparison of the noise standards applicable to the facility, including any local requirements, and noise design goals for the facility, and the degree of compliance indicated by computer noise modeling at the representative external

property boundary lines of the facility and related facilities and ancillary equipment sites, and at the representative nearest and average noise receptors.

- (i) An identification and evaluation of reasonable noise abatement measures for construction activities, including a description of a complaint-handling procedure that shall be provided during the construction period.
- (j) An identification and evaluation of reasonable noise abatement measures for the final design and operation of the facility including the use of alternative technologies, alternative designs, and alternative facility arrangements.
- (k) An evaluation of the following potential community noise impacts: hearing damage (as addressed by applicable Occupational Safety and Health Administration standards); indoor and outdoor speech interference; interference in the use of outdoor public facilities and areas; community complaint potential; the potential for structural damage; and the potential for interference with technological, industrial or medical activities that are sensitive to vibration or infrasound.
- (l) A description of post-construction noise evaluation studies that shall be performed to establish conformance with operational noise design goals.
- (m) An identification of practicable post-construction operational controls and other mitigation measures that will be available to address reasonable complaints, including a description of a complaint-handling procedure that shall be provided during periods of operation.
- (n) The computer noise modeling values used for the major noise-producing components of the facility shall fairly match the unique operational noise characteristics of the particular equipment models and configurations proposed for the facility. The software input parameters, assumptions, and associated data used for the computer modeling shall be provided.

### **1001.21 Exhibit 21: Geology, Seismology and Soils**

Exhibit 21 shall contain:

A study of the geology, seismology, and soils impacts of the facility consisting of the identification and mapping of existing conditions, an impact analysis, and proposed impact avoidance and mitigation measures, including:

- (a) a map on a scale of \_\_\_\_\_ delineating existing slopes (0-3%, 3-8%, 8-15%, 15-25%, 25-35%, 35% and over) on and within the drainage area potentially influenced by the facility site and interconnections;

- (b) a proposed site plan showing existing and proposed contours at two-foot intervals, for the facility site and interconnections, at a scale sufficient to show all proposed buildings, structures, paved and vegetative areas, and construction areas;
- (c) a description and preliminary calculation of the quantity of cut and fill necessary to construct the facility, including separate calculations for topsoil, sub-soil and rock, and including a plan to identify the presence of invasive species in spoil material and to prevent the introduction and/or spread of invasive species by the transport of fill material to or from the site of the facility or interconnections;
- (d) a description and preliminary calculation of the amount of fill, gravel, asphalt, and surface treatment material to be brought in to the facility site and interconnections;
- (e) a description and preliminary calculation of the proposed type and amount of cut material or spoil to be removed from the facility site and interconnections;
- (f) a description of excavation techniques to be employed;
- (g) a delineation of temporary cut or fill storage areas to be employed;
- (h) a description of the characteristics and suitability for construction purposes of the material excavated for the facility and of the deposits found at foundation level, including factors such as soil corrosivity, bedrock competence, and subsurface hydrologic characteristics;
- (i) a preliminary plan describing all blasting operations including location, minimum blasting contractor qualifications, hours of blasting operations, estimates of amounts of rock to be blasted, warning measures, measures to ensure safe transportation, storage and handling of explosives, use of blasting mats, conduct of a pro-blasting condition survey of nearby buildings and improvements, and coordination with local safety officials;
- (j) an assessment of potential impacts of blasting to environmental features, above-ground structures and below-ground structures such as pipelines and wells;
- (k) an identification and evaluation of reasonable mitigation measures regarding blasting impacts, including the use of alternative technologies and/or location of structures, and including a plan for securing compensation for damages that may occur due to blasting;
- (l) a description of the regional geology, tectonic setting and seismology of the facility vicinity;

- (m) an analysis of the expected impacts of construction and operation of the facility with respect to regional geology, if such can be determined;
- (n) an analysis of the impacts of typical seismic activity experienced in the facility area based on current seismic hazards maps, on the location and operation of the facility identifying potential receptors in the event of failure, and if the facility is proposed to be located near a young fault or a fault that has had displacement in Holocene time, demonstration of a suitable setback from such fault;
- (o) a map at a scale of \_\_\_\_\_ delineating soil types on the facility and interconnections sites;
- (p) a description of the characteristics and suitability for construction purposes of each soil type identified above, including a description of the soil structure, texture, percentage of organic matter, and recharge/infiltration capacity of each soil type and a discussion of any de-watering that may be necessary during construction and whether the facility shall contain any facilities below grade that would require continuous de-watering;
- (q) maps at a scale of \_\_\_\_\_, figures, and analyses delineating depth to bedrock and underlying bedrock types, including vertical profiles showing soils, bedrock, water table, seasonal high groundwater, and typical foundation depths on the facility site, and any area to be disturbed for roadways to be constructed and all off-site interconnections required to serve the facility, including an evaluation for potential impacts due to facility construction and operation, including any on-site wastewater disposal system, based on information to be obtained from available published maps and scientific literature, review of technical studies conducted on and in the vicinity of the facility, and on-site field observations, test pits and/or borings as available;
- (r) an evaluation to determine suitable building and equipment foundations, including:
  - (1) a preliminary engineering assessment to determine the types and locations of foundations to be employed. The assessment shall investigate the suitability of such foundation types as spread footings, caissons, or piles, including a statement that all such techniques conform to applicable building codes or industry standards;
  - (2) if piles are to be used, a description and preliminary calculation of the number and length of piles to be driven, the daily and overall total number of hours of pile driving work to be undertaken to construct the facility, and an assessment of pile driving impacts on surrounding properties and structures due to vibration; and
  - (3) identification of mitigation measures regarding pile driving impacts, if applicable, including a plan for securing compensation for damages that may occur due to pile driving; and

- (s) an evaluation of the vulnerability of the facility site and the operation of the facility to an earthquake event.

### **1001.22 Exhibit 22: Terrestrial Ecology and Wetlands**

Exhibit 22 shall contain:

- (a) An identification and description of the type of plant communities present on the facility site, the interconnections, and adjacent properties based upon field observations and data collection consistent with the nature of the site and access availability to adjacent properties.
- (b) An analysis of the temporary and permanent impact of the construction and operation of the facility and the interconnections on the vegetation identified, including a mapped depiction of the vegetation areas showing the areas to be removed or disturbed, and including a plan to identify the presence of invasive species and to prevent the introduction and/or spread of invasive species.
- (c) An identification and evaluation of reasonable avoidance measures or, where impacts are unavoidable, mitigation measures, including the use of alternative technologies, regarding vegetation impacts identified.
- (d) A characterization of the facility site and any areas to be disturbed for interconnections as to the vegetation, wildlife (including mammals, birds, amphibians, terrestrial invertebrates, and reptiles) and wildlife habitats, that occur in, on, or in the vicinity, based on reconnaissance or multi-season surveys and data collection appropriate to the nature of the site, supplemented by available data from the New York Natural Heritage Program, New York State (NYS) Amphibian and Reptile Atlas Project, the NYS Breeding Bird Atlas and range maps, Breeding Bird Survey Routes, Christmas Bird Counts and other similar reference sources, including an identification and depiction of any Significant Coastal Fish and Wildlife Habitat Areas designated by DOS/DEC and any unusual habitats or significant natural communities that could support state or federally listed endangered or threatened species or species of special concern.
- (e) A list of the species of mammals, birds, amphibians, terrestrial invertebrates, and reptiles reasonably likely to occur on, or in the vicinity of the facility site and areas to be disturbed for interconnections based on site observations and supplemented by publicly available sources.
- (f) An analysis of the impact of the construction and operation of the facility and interconnections on vegetation, wildlife, wildlife habitats, and wildlife travel corridors, including a detailed assessment of direct and indirect impacts and

identification and evaluation of the expected environmental impacts of the facility on declining species, Species of Greatest Conservation Need (SGCN), and species protected by State and Federal law and the habitats of such species. Given the provisions of §3-0301(2)(r) of the Environmental Conservation Law and §15 of the Public Service Law, information that identifies the locations of habitats of such species or any other species or unique combination of species of flora or fauna where the destruction of such habitat or the removal of such species there from would impair their ability to survive, shall not be disclosed to the public, and shall only be disclosed to the parties to a proceeding pursuant to an appropriate protective order.

- (g) An identification and evaluation of reasonable avoidance measures or, where impacts are unavoidable, mitigation measures, including the use of alternative technologies, regarding impacts to vegetation, wildlife and wildlife habitat.
- (h) For proposed wind-powered facilities:
  - (1) an identification and evaluation of the expected environmental impacts of the facility on avian and bat species and the habitats that support them based on information gathered during pre-construction studies conducted at the proposed site and other nearby sites, analysis of known or predicted species and species migration corridors present on site, and including a description of the extent, methodology and results of all such pre-construction studies;
  - (2) an identification and description of a period of post-construction operations monitoring for potential direct and indirect impacts to avian and bat species and habitats, including a description of the extent, methodology and timing of such post-construction operations monitoring; and
  - (3) a plan to avoid or, where unavoidable, minimize and mitigate any such impacts during construction and operation of the facility based on existing information, the results of pre- and post-construction monitoring, and any known post-construction impacts that may occur.
- (i) A map at a scale of \_\_\_\_\_ showing delineated boundaries based on on-site identification of all federal, state and locally regulated wetlands present on the facility site and within 500 feet of areas to be disturbed by construction, including the interconnections; and predicted presence and extent of wetlands on the remainder of site properties and adjacent properties within 5000 feet of areas to be disturbed by construction. For adjacent properties without accessibility, initial surveys may be based on remote-sensing data, interpretation of published wetlands and soils mapping and aerial photography.
- (j) A description of the characteristics of all federal, state and locally regulated wetlands delineated as above, including the Cowardin classification, and a

description of the vegetation, soils, and hydrology data collected for each of wetland sites identified, based on actual on-site wetland observations.

- (k) A qualitative and descriptive wetland functional assessment, including seasonal variations, for all wetlands delineated as above for groundwater recharge/discharge, floodflow alteration, fish and shellfish habitat, sediment/toxicant retention, nutrient removal, sediment/shoreline stabilization, wildlife habitat, recreation, uniqueness/heritage, visual quality/aesthetics, and protected species habitat.
- (l) An analysis of all off-site wetlands that may be hydrologically or ecologically influenced by development of the facility site and the wetlands identified above, observed in the field where accessible to determine their general characteristics and relationship, if any, to wetlands delineated as above
- (m) An identification of all temporary and permanent impacts on the wetlands or their regulated adjacent areas.
- (n) An identification and evaluation of reasonable avoidance measures or, where impacts are unavoidable, mitigation measures to be employed regarding the wetlands and adjacent areas impacts, including the use of alternative technologies and control of potential phosphorus and nitrogen sources.
- (o) An identification of state and federal endangered or threatened species on the facility site or that could be subject to impacts from facility construction, operation, or maintenance, including incidental takings, and an endangered or threatened species mitigation plan.
- (p) An invasive species prevention and management plan indicating the presence of invasive species and measures that will be implemented to minimize the introduction of new invasive species and spread of existing invasive species during soil disturbance, vegetation management, transport of materials, and landscaping/revegetation.
- (q) An analysis of the temporary and permanent impacts of the construction and operation of the facility and the interconnections on agricultural resources, including the acres of agricultural land temporarily impacted, the number of acres of agricultural land that will be permanently converted to nonagricultural use, and mitigation measures to minimize the impact to agricultural resources. The facility Where appropriate, mitigation shall include plans for compensatory mitigation. Such plans shall contain sections on grading, planting, and monitoring for success.
- (r) An identification of state and federal endangered or threatened species on the facility site or that could be subject to impacts from facility construction, operation,

or maintenance, including incidental takings, and an endangered or threatened species mitigation plan.

- (s) An invasive species prevention and management plan indicating the presence of invasive species and measures that will be implemented to minimize the introduction of new invasive species and spread of existing invasive species during soil disturbance, vegetation management, transport of materials, and landscaping/revegetation.
- (t) An analysis of the temporary and permanent impacts of the construction and operation of the facility and the interconnections on agricultural resources, including the acres of agricultural land temporarily impacted, the number of acres of agricultural land that will be permanently converted to nonagricultural use, and mitigation measures to minimize the impact to agricultural resources.

### **1001.23 Exhibit 23: Water Resources and Aquatic Ecology**

Exhibit 23 shall contain the following with regard to:

- (a) Groundwater:
  - (1) Hydrologic information reporting depths to high groundwater and bedrock, including a site map showing depth to high groundwater and bedrock in increments appropriate for the facility site.
  - (2) A map at a scale of \_\_\_\_\_ based on publicly available information showing all areas within the study area delineating all groundwater aquifers and groundwater recharge areas, and identifying groundwater flow direction, groundwater quality, and the location, depth, yield and use of all public and private groundwater wells or other points of extraction of groundwater, and including delineation of well head and aquifer protection zones.
  - (3) An analysis and evaluation of potential impacts (during normal and drought conditions) from the construction and/or operation of the facility on drinking water supplies, groundwater quality and quantity in the facility area, including potential impacts on public and private water supplies, including private wells within a three mile radius of the facility site, and wellhead and aquifer protection zones.
- (b) Surface Water:
  - (1) A map at a scale of \_\_\_\_\_ and identification of all surface waters, including intermittent streams, within the study area.
  - (2) A description of the New York State listed Water Classification and Standards physical water quality parameters, flow, biological aquatic resource characteristics (including species, habitat, and presence of aquatic invasive species) and other characteristics of such surface waters, including intermittent streams, within the study area.

- (3) An identification of any downstream surface water drinking-water supply intakes within one mile, or if none within one mile, an identification of the nearest one (giving location of the intakes by longitude and latitude) that could potentially be affected by the facility or interconnections, including characterization of the type, nature, and extent of service provided from the identified source.
  - (4) An analysis of the impact of the construction and operation of the facility and interconnections on such surface waters, including impacts to drinking water supplies, and an identification and evaluation of reasonable avoidance measures and, where impacts are unavoidable, mitigation measures regarding impacts on such surface waters, including the precautions that will be taken to avoid or minimize dredging.
  - (5) An identification and evaluation of reasonable avoidance measures, and where impacts are unavoidable, mitigation measures, including the use of water storage, stormwater reuse, and offsetting water conservation, regarding groundwater impacts.
- (c) Stormwater:
- (1) A Stormwater Pollution Prevention Plan (SWPPP) for the collection and management of stormwater discharges from the project prepared in accordance with the applicable SPDES General Permit for Stormwater Discharges from Construction Activity (SPDES General Permit) and the most current version of the New York State Standards and Specifications for Erosion and Sediment Control. If the project is not eligible for coverage under the SPDES General Permit, a completed application for a State Pollutant Discharge Elimination System (SPDES) Permit for the collection and management of stormwater discharges from the project.
  - (2) To the extent not covered in paragraph (1) above, a preliminary plan, prepared in accordance with the most current version of the New York State Standards and Specifications for Erosion and Sediment Control, that identifies the post construction erosion and sediment practices that will be used to manage stormwater runoff from the developed project site. This can include runoff reduction/green infrastructure practices, water quality treatment practices, and practices that control the volume and rate of runoff.
- (d) Spill Prevention
- (1) A description of the spill prevention and control measures to be in place for fuel oil storage, wastewater storage, and other chemical, petroleum or hazardous substances stored on site, including an evaluation of alternatives and mitigation measures.
- (e) Aquatic Species and Invasive Species:
- (1) An analysis of the impact of the construction and operation of the facility on biological aquatic resources, including species listed as endangered,

- threatened, or species of special concern in 6 NYCRR Part 182, and including the potential for introducing and/or spreading invasive species.
- (2) An identification and evaluation of reasonable avoidance measures and, where impacts are unavoidable, mitigation measures regarding impacts on such biological aquatic resources, including species and invasive species impacts (if any) and assure compliance with applicable water quality standards (6 NYCRR Part 703).

#### **1001.24 Exhibit 24: Visual Impacts**

Exhibit 24 shall contain:

- (a) A visual impact assessment (VIA) to determine the extent and assess the significance of facility visibility. The components of the VIA shall include identification of visually sensitive resources, viewshed mapping, confirmatory visual assessment fieldwork, visual simulations (photographic overlays), cumulative visual impact analysis, and proposed visual impact mitigation. The VIA shall address the following issues:
  - (1) the character and visual quality of the existing landscape;
  - (2) visibility of all above-ground interconnections and roadways to be constructed within the facility study area as determined by the viewshed analysis;
  - (3) appearance of the facility upon completion, including building/structure size, architectural design, facade colors and texture, and site lighting;
  - (4) lighting (including lumens, location and direction of lights for facility area and/or task use, and safety including worker safety and tall structure marking requirements) and similar features;
  - (5) representative views (photographic overlays) of the facility, including front, side and rear views, indicating approximate elevations;
  - (6) nature and degree of visual change resulting from construction of the facility and above-ground interconnections;
  - (7) nature and degree of visual change resulting from operation of the facility;
  - (8) analysis and description of related operational effects of the facility such as visible plumes, shading, glare, and shadow flicker;
  - (9) proposed mitigation and mitigation alternatives based on an assessment of mitigation strategies, including screening (landscaping), architectural design, visual offsets, relocation or rearranging facility components, reduction of facility component profiles, alternative technologies, facility color and design, lighting options for work areas and safety requirements, and lighting options for stack lighting if required by the Federal Aviation Administration; and
  - (10) a description of all visual resources that would be affected by the facility.
- (b) The viewshed analysis component of the VIA shall be conducted as follows:

- (1) Viewshed maps depicting areas of project visibility within the facility study area shall be prepared and presented on a 1:2400 scale recent edition topographic base map. A line of sight profile shall also be done for resources of town concern located within the VIA study area. The viewshed maps shall provide an indication of areas of potential visibility based on topography and vegetation and the highest elevation of facility structures. The potential screening effects of vegetation shall also be shown. The map(s) shall be divided into foreground, midground and background areas based on visibility distinction and distance zone criteria. Visually-sensitive sites, cultural and historical resources, representative viewpoints, photograph locations, and public vantage points within the viewshed study area shall be included on the map(s) or an overlay. An overlay indicating landscape similarity zones shall be included.
- (2) The VIA shall include a detailed description of the methodology used to develop the viewshed maps, including software, baseline information, and sources of data.
- (3) The viewshed mapping shall be used to determine the sensitive viewing areas and locations of viewer groups in the facility vicinity. These shall include mostly residences, and historic sites (listed or eligible for listing on the State or National Register of Historic Places), and travelers on NYS RTE 180 and NYS RTE 12
- (4) The applicant shall confer with the Towns' planning representatives, in its selection of important or representative viewpoints. Viewpoint selection is based upon the following criteria:
  - (i) representative or typical views from unobstructed or direct line-of-sight views;
  - (ii) significance of viewpoints, designated scenic resources, areas or features (which features typically include, but are not limited to: landmark landscapes; wild, scenic or recreational rivers, conservation easement ,Scenic districts and scenic roads.
  - (iii) level of viewer exposure, i.e., frequency of viewers or relative numbers, including residential areas, or high volume roadways;
  - (iv) proposed land uses;
  - (v) input from local public sources; and
  - (vi) building/Structure and land use type data collected for each potentially eligible property prepared in a spreadsheet from highest usage type to lowest with a summary of totals of all current use types
- (5) Photographic simulations of the facility and interconnections shall be prepared from the representative viewpoints to demonstrate the post-construction appearance of the facility. Where vegetation screening is relied on for project mitigation, leaf-off and leaf-on simulation shall be provided. Representative viewpoints shall be established in consultation with planning board where appropriate.

- (6) Additional revised simulations illustrating mitigation shall be prepared for those observation points for which mitigation is proposed in the application.
- (7) Each set of existing and simulated views of the facility shall be compared and rated and the results of the visual impact assessment shall be summarized. Documentation of the steps followed in the rating and assessment methodology shall be provided including results of rating impact panels and a description of the qualifications of the individuals serving on the panels. Orleans Town and Planning Boards Members must be invited to participate. Where visual impacts from the proposed facility are identified, potential mitigation measures shall be outlined, and the extent to which they effectively minimize such impact shall be discussed.

As applicable to the proposed facility technology, the analysis shall include analyses of overall appearance and operational characteristics of the facility and related facilities, including visibility, shading, glare, shadow flicker, or related visible effects of facility operation, including an assessment of the predicted extent, frequency, and duration of any such visible effects created by the facility.

#### **1001.26 Exhibit 26: Effect on Communications**

Exhibit 26 shall contain:

- (a) An identification of all existing broadcast communication sources within a 5-mile radius of the facility and the electric interconnection between the facility and the point of interconnection, unless otherwise noted, including:
  - (1) AM radio;
  - (2) FM radio;
  - (3) Television;
  - (4) telephone;
  - (5) microwave transmission (all affected sources, not limited to a five-mile radius);
  - (6) emergency services;
  - (7) municipal/school district services;
  - (8) public utility services;
  - (9) Doppler/weather radar (all affected sources, not limited to a five-mile radius);
  - (10) air traffic control (all affected sources, not limited to a five-mile radius);
  - (11) armed forces (all affected sources, not limited to a five-mile radius);
  - (12) GPS;
  - (13) LORAN (all affected sources, not limited to a five-mile radius); and
  - (14) amateur radio licenses registered to users.

- (b) An identification of all existing underground cable and fiber optic major transmission telecommunication lines within a five-mile radius of the facility and the electric interconnection between the facility and the point of interconnection.
- (c) A statement describing the anticipated effects of the proposed facility and the electric interconnection between the facility and the point of interconnection on the communications systems required to be identified pursuant to subdivision (a) and (b) of this section, including the potential for:
  - (1) structures to interfere with broadcast patterns by re-radiating the broadcasts in other directions;
  - (2) structures to block necessary lines-of-sight; physical disturbance by construction activities;
  - (3) adverse impacts to co-located lines due to unintended bonding; and
  - (4) any other potential for interference.
- (d) An evaluation of the design configuration of the proposed facility and electric interconnection between the facility and the point of interconnection demonstrating that there shall be no adverse effects on the communications systems required to be identified pursuant to subdivision (a) and (b) of this section.
- (e) A description of post-construction activities that shall be undertaken to identify and mitigate any adverse effects on the communications systems required to be identified pursuant to subdivision (a) and (b) of this section that occur despite the design configuration of the proposed facility and electric interconnection between the facility and the point of interconnection.
- (f) An evaluation of the design configuration of the proposed facility and electric interconnection between the facility and the point of interconnection demonstrating that there shall be no adverse effects on or interference with radar or instrument systems used for air traffic control, guidance, weather, or military operations including training.

### **1001.27 Exhibit 27: Socioeconomic Effect**

Exhibit 27 shall contain:

An estimate of the average construction work force, by discipline, for each quarter, during the period of construction; and an estimate of the peak construction employment level.

- (a) An estimate of the annual construction payroll, by trade, for each year of construction and an estimate of annual direct non-payroll expenditures likely to be made in the vicinity of the facility (materials, services, rentals, and similar categories) during the period of construction.
- (b) An estimate of the annual secondary employment and economic activity likely to be generated in the vicinity of the facility by the construction of the plant. This

analysis shall state the basis of any economic multiplier factor or other assumption used.

- (c) An estimate of the number of jobs and the on-site payroll, by discipline, during a typical year once the plant is in operation, and an estimate of other expenditures likely to be made in the vicinity of the facility during a typical year of operation.
- (d) An estimate of the annual secondary employment and economic activity likely to be generated in the vicinity of the facility by its operation.
- (e) An estimate of incremental school district operating and infrastructure costs due to the construction and operation of the facility, this estimate to be made after consultation with the affected school districts.
- (f) An estimate of incremental municipal, public authority, or utility operating and infrastructure costs that will be incurred for police, fire, emergency, water, sewer, solid waste disposal, highway maintenance and other municipal, public authority, or utility services during the construction and operation phases of the facility (this estimate to be made after consultation with the affected municipalities, public authorities, and utilities).
- (g) An identification of all jurisdictions (including benefit assessment districts and user fee jurisdictions) that levy real property taxes or benefit assessments or user fees upon the facility site, its improvements and appurtenances and any entity from which payments in lieu of taxes will or may be negotiated.
- (h) For each jurisdiction, an estimate of the incremental amount of annual taxes (and payments in lieu of taxes, benefit charges and user charges) and a schedule for the conduct of decommissioning and site restoration activities.
- (i) For wind-powered generation facilities and other facilities to be located on lands owned by another, a description of all site restoration, decommissioning and guaranty/security agreements between the applicant and landowner, municipality, or other entity, including provisions for turbines, foundations, and electrical collection, transmission, and interconnection facilities.
- (j) For each jurisdiction, a comparison of the fiscal costs to the jurisdiction that are expected to result from the construction and operation of the facility to the expected tax revenues (and payments in lieu of taxes, benefit charge revenues and user charge revenues) generated by the facility.
  - (1) An analysis of whether all contingency plans to be implemented in response to the occurrence of a fire emergency or a hazardous substance incident can be fulfilled by existing local emergency response capacity, and in that regard identifying any specific equipment or training deficiencies in local emergency response capacity (this analysis to be made after consultation with the affected local emergency response organizations).
  - (2) A detailed statement indicating how the proposed facility has achieved SOCIAL LICENSE (Refers to a local community's acceptance or approval of a company's project or ongoing presence in an area. It is increasingly recognized by various stakeholders and communities as a prerequisite to development).

## **1001.29 Exhibit 29: Site Restoration and Decommissioning**

Exhibit 29 shall contain:

- (a) A statement of the performance criteria proposed for site restoration in the event the facility cannot be completed and for decommissioning of the facility, including a discussion of why the performance criteria are appropriate. Among other things, the statement shall address:
  - (1) safety and the removal of hazardous conditions; environmental impacts;
  - (2) aesthetics;
  - (3) salvage and recycling;
  - (4) potential future uses for the site; and the useful life of the facility
  - (5) environmental impacts;
  - (6) aesthetics;
  - (7) salvage and recycling;
  - (8) potential future uses for the site; and the useful life of the facility.
- (b) A plan for the decommissioning and restoration of the facility site including how such decommissioning and restoration shall be funded and a schedule for the conduct of decommissioning and site restoration activities funded and a schedule for the conduct of decommissioning and site restoration activities.
- (c) For wind-powered generation facilities and other facilities to be located on lands owned by another, a description of all site restoration, decommissioning and guaranty/security agreements between the applicant and landowner, municipality, or other entity, including provisions for turbines, foundations, and electrical collection, transmission, and interconnection facilities.
- (d) For wind-powered generation facilities and other facilities to be located on lands owned by another, a description of all site restoration, decommissioning and guaranty/security agreements between the applicant and landowner, municipality, or other entity, including provisions for turbines, foundations, and electrical collection, transmission, and interconnection facilities.

## **1001.34 Exhibit 34: Electric Interconnection**

Exhibit 34 shall contain:

A detailed description of the proposed electric interconnection including:

- (a) the design voltage and voltage of initial operation;
- (b) the type, size, number and materials of conductors;
- (c) the insulator design;
- (d) the length of the transmission line;
- (e) the typical dimensions and construction materials of the towers;

- (f) the design standards for each type of tower and tower foundation;
- (g) for underground construction, the type of cable system to be used and the design standards for that system;
- (h) for underground construction, indicate on a profile of the line the depth of the cable and the location of any oil pumping stations and manholes;
- (i) equipment to be installed in any proposed switching station or substation including an explanation of the necessity for any such switching station or substation;
- (j) any terminal facility; and the need for cathodic protection measures.

### **1001.35 Exhibit 35: Electric and Magnetic Fields**

Exhibit 35 shall contain:

- (a) For the entire right-of-way of the proposed power line providing the electrical interconnection between the proposed facility and the existing electric transmission and distribution system, identify every right-of-way segment having unique electric and magnetic field (EMF) characteristics due to structure types and average heights, rights-of-way widths, and co-location of other transmission facilities in the right-of-way.
- (b) For each identified right-of-way segment, provide both "base case" and "proposed" cross-sections to scale showing:
  - (1) all overhead electric transmission, sub-transmission and distribution facilities including the proposed facility showing structural details and dimensions and identifying phase spacing, phasing, and any other characteristics affecting EMF emissions;
  - (2) all underground electric transmission, sub-transmission and distribution facilities;
  - (3) all underground gas transmission facilities;
  - (4) all right-of-way boundaries; and
  - (5) structural details and dimensions for all structures (dimensions, phase spacing, phasing, and similar categories) and include a Station number identifying the location.
- (c) A set of the aerial photos/drawings enhanced by showing the exact location of each:
  - (1) identified right-of-way segment;
  - (2) cross-section; and
  - (3) nearest residence or occupied non-residential building in each identified right-of-way segment with a stated measurement of the distance between the edge of right-of-way and the nearest edge of the residence or building.

- (d) An EMF study with calculation tables and field strength graphs for each identified right-of-way segment cross-section, as follows:
- (1) the study must be signed and stamped/sealed by a licensed professional engineer registered and in good standing in the State of New York;
  - (2) provide the name of the computer software program used to model the facilities and make the calculations;
  - (3) regarding electric fields, model the circuits at rated voltage and provide electric field calculation tables and field strength graphs calculated at one meter above ground level with 5 foot measurement intervals depicting the width of the entire right-of-way and out to 500 feet from the edge of the right-of-way on both sides, including digital copies of all input assumptions and outputs for the calculations;
  - (4) regarding magnetic fields, model the circuit phase currents equal to the summer normal, summer short term emergency (STE Sum), winter-normal, and winter short term emergency (STE Win) loading conditions and provide magnetic field calculation tables and field strength graphs calculated at one meter above ground level with 5 foot measurement intervals depicting the width of the entire right-of-way and out to 500 feet from the edge of the right-of-way on both sides, including digital copies of all input assumptions and outputs for the calculations;
  - (5) regarding magnetic fields, also model the circuit phase currents equal to the maximum average annual load estimated to be occurring on the power lines within ten years after the proposed Facility is put in operation and provide magnetic field calculation tables and field strength graphs calculated at one meter above ground level with 5 foot measurement intervals depicting the width of the entire right-of-way and out to 500 feet from the edge of the right-of-way on both sides, including digital copies of all input assumptions and outputs for the calculations; and
  - (6) regarding magnetic fields, also model a "base case" with the circuit phase currents equal to the maximum average annual load currently estimated to be occurring on the existing power lines within the right-of-way (without construction or operation of the proposed Facility) and provide magnetic field calculation tables and field strength graphs calculated at one meter above ground level with 5 foot measurement intervals depicting the width of the entire right-of-way and out to 500 feet from the edge of the right-of-way on both sides, including digital copies of all input assumptions and outputs for the calculations.

## Section 11 Application Review Process

### **... repeal and replace ...**

- F. The Planning board shall hold at least one (1) public hearing on the Application. Notice shall be provided by First Class mail to property owners, and occupants, within 2250 feet measured from the base of a proposed WECS mailed at least 10

days before any hearing, and published in the Town's Official Newspaper, no less than 10 and not more than 20 days before any hearing. The applicant shall prepare and mail the Notice of Public hearing and shall submit an Affidavit of Service to the Planning Board. The assessment roll of the Town shall be used to determine mailing addresses.

Section 12 Standards for WECS  
**. . . repeal and replace . . .**

The following standards shall apply to all WECS:

Setbacks: No Wind Energy Conversion Systems shall be allowed within the following setbacks. If more than one setback applies, the most restrictive setback shall prevail.

a) From restricted areas:

A Minimum Distance of 5 times the Rotor Diameter from any Residential District boundary line.

b) From structures:

A Minimum Distance of 5 times the Rotor Diameter from any building

c) From property lines:

A minimum of 5 times the Rotor Diameter from any property line excluding adjoining lot lines of the project participants.

d) From public road and highways:

A Minimum Distance of 5 times the Rotor Diameter, from any public road and highway.

e) A minimum of 5 times the Rotor Diameter from any above-ground transmission line greater than 12 kilovolts.

f) From the boundary of the Hamlet of LaFargeville:

A Minimum Distance of 5 times the Rotor Diameter

g) From another Commercial/Industrial WECS turbine:

A Minimum Distance of 5 times the Rotor Diameter.

All power transmission lines from the tower to any building or other structure shall be located underground.

Section 15 Setbacks and Noise Standards for Wind Energy Conversion Systems  
**. . . repealed and replace . . .**

A. COMMERCIAL AND INDUSTRIAL NOISE

1. PURPOSE: This law is enacted to preserve quality of life, peace and tranquility, and protect the natural environment. This law establishes the acoustic baseline, background sound levels for project design purposes, and limits the maximum noise level emissions for commercial and industrial developments. Residents shall be protected from exposure to excessive noise emitted from commercial and industrial development by regulating noise levels and sound quality.
2. APPLICABILITY AND LIMITATIONS:
  - a. All commercial and industrial development noise(s) generated by operating equipment and devices that can be detected by the human ear on another property. Commercial and industrial development includes all facilities used for: commerce, manufacturing of goods, transportation of goods or materials (including all means of transportation), office use, generation and bulk transmission of energy resources and provision of services.
  - b. The following noise sources are specifically excluded from this law.
    - Residential properties including a home business on the residential property
    - Agricultural use
    - Forestry use
    - Vehicle backup alarms & safety alarms, emergency equipment
    - Short term incidental noise (e.g. lawn mowing or snow removal)
    - Excavation or mining at lawful gravel pits
    - Residential construction (when constructed at the permanent site of the residence)
3. METHOD: This ordinance adopts International Standards Organizational (ISO 1996-1:2003) as summarized in Table 1. This standard estimates community response by the increase in the dBA noise level. This law also applies dBA response corrections for objectionable frequency content (sound quality).

**Table 1 – ISO 1996-1:2003**

dBA  Above Noise Level Criterion	Estimated Community Response	
	Category (ISO) 1	Description (EPA) 2
0	None	No Observed Reaction
5	Little	Sporadic Complaints
10	Medium	Widespread Complaints
15	Strong	Threats of Community Action
20	Very Strong	Vigorous Community Action

1 ISO 1996-1:2003, Acoustics -- Description, measurement and assessment of environmental noise -- Part 1: Basic quantities and assessment procedures

2 United States Environmental Protection Agency's document "Information On Levels Of Environmental Noise Requisite To Protect Public Health And Welfare With An Adequate Margin of Safety", 550/9-74-004, March 1974

4. BACKGROUND BASELINE:

The Town is situated in a rural area and is therefore a quiet community, which has defined the acoustic baseline as follows.

**Table 2 –**

**Town of Orleans Background Sound Levels Criterion**

Zoning District	Day (from 7:00 AM to 7:00 PM)	Night (from 7:00 PM to 7:00 AM)
Rural	35 dBA (10-min L90)	25 dBA (10-min L90)

Note: L90 is sound level exceeded 90% of the time

5. NOISE LIMITS:

All Commercial and industrial noise emissions shall not exceed the noise limits in Table 3 anywhere at any time on another property

**Table 3 – Operational Noise Limits**

Zoning District	Maximum Noise Limit Day (from 7:00 AM to 7:00 PM)	Maximum Noise Limit Night (from 7:00 PM to 7:00 AM)

<b>Rural</b>	45 dBA (10-min L10)	35 dBA (10-min L10)
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Note: L10 is sound level exceeded 10% of the time

6. SOUND QUALITY CORRECTIONS:

When objectionable sound quality is present, a penalty of 5 dB shall be deducted from the maximum noise level limits on Table 3A when the noise emissions meet one (-5 dB) or two (-10 dB) of following conditions (a, b & c). These penalties are cumulative up to a maximum of -10 dB.

**Table 4– Town of Orleans Sound Quality Corrections**

Penalty	Description	Method	Correction
<b>a</b>	<b>Tone(s)</b>	1 Steady Tone	-5 dBA
		Fluctuating	
		Multiple Tones	
<b>b</b>	<b>Low</b>	20 Hz to 10000	dBC minus dBA >15 dB-5 dBA
<b>c</b>	<b>Infrasound</b>	≤1.0 Hz to 20	dBL minus dBC >15 dB-5 dBA

[I] e.g. Wind Turbine

7. PLANNING BOARD RESPONSIBILITY: The maximum noise level (L10) increase is 10 dB based on the zoning district baseline background L90. The Planning Board shall have discretion to reduce the 10 dB increase to 7 dB when there is potential for project future expansion or for another nearby development.

8. NOISE COMPLIANCE: Compliance noise measurements are the financial responsibility of the owner of the facility and shall be independently performed by a qualified professional approved by the Town Board or their designated agent. Compliance noise measurements shall not exceed the stipulated noise limits and shall include Project Sound Quality Corrections when warranted.

9. NOISE MEASUREMENTS

a. All noise measurements shall (must) exclude contributions from wind on microphone, tree/leaf rustle, flowing water, and natural sounds such as tree frogs and insects. The latter two can be excluded by calculating the dBA by excluding octave band measurements above the 1000 Hz band.

- b. All acoustic terminology, noise predictions and sound measurements shall comply with recognized international standards (ANSI, IEC & ISO).

**B. LARGE WIND ENERGY SYSTEMS (LWES)**

- 1. PURPOSE: The purpose of this subsection is to provide a regulatory framework for the construction and operation of Large Wind Energy Systems (LWES) in the Town of Orleans, subject to reasonable restrictions that will:
  - a. preserve and protect the public health, safety and welfare and the character of the Town;
  - b. allow renewable energy in a manner consistent with the vision and goals of the Orleans Master Plan;
  - c. minimize the visual Impact of a LWES;
  - d. protect individual residents and the Natural Environment from any adverse conditions caused by the LWES and from any potential injury or damage from hazards associated with failure of LWES components and/or Debris Hazards;
  - e. ensure the financial security necessary for the operation, decommissioning, and removal of these systems;
  - f. ensure the compatibility of any LWES with other land uses within the Town; and
  - g. protect property values.
- 2. DEFINITIONS: The following terms shall have the meanings indicated:

ADVERSE NOISE IMPACTS – Disturbances that interfere with: normal speech and communications both indoors and outdoors, talking, telephone conversations, reading, tasks requiring concentration, listening to music or television, and sleep.

ANNOYANCE – One of the primary effects of aircraft noise on exposed communities is long-term annoyance. Noise annoyance has been defined by the Environmental Protection Agency (EPA) as any negative subjective reaction on the part of an individual or group. The scientific community adopted the use of long-term annoyance as a primary indicator of community response because it attempts to account for all negative

aspects of effects from noise, e.g., increased annoyance due to being awakened the previous night by aircraft, and interference with everyday conversation.

AMPLITUDE MODULATION – Wind turbine noise (measured in 125-millisecond intervals at any location 3.5 to 25 meters outside a dwelling) is defined as exhibiting amplitude modulation (also referred to by AM or impulsive) when and if the A-weighted sound pressure level rises or falls by more than 3 dB within any 2-second period more than five times in any 1-minute period with an average sound level of 28 dBA or more, six or more times in any hour.

A-WEIGHTED (dBA) – The unit of measure for the human response to noise using an electronic filter as specified by ANSI approximating the frequency response of the human ear from 20 Hz to 20 kHz.

BACKGROUND NOISE – The noise level represented without the wind turbines operating and when man-made and natural intrusive sounds are at a minimum. The intent of this definition is to exclude noise level contributions from intermittent noises such as traffic and emergency vehicles, and from seasonal natural sounds such as tree frogs and crickets that are not present year-round.

BLADE GLINT - The intermittent reflection of the sun off the surface of the blades of a single or multiple wind turbines.

CNR (COMMUNITY NOISE RESPONSE) – United States Environmental Protection Agency methodology to predict the community noise reaction to a new sound source introduced into the environment.

C-WEIGHTED (dBC) – An electronic filter with a band-pass frequency response 20Hz to 20kHz.

DAYTIME – Hours from 7:00 AM to 7:00 PM.

DEBRIS HAZARD – Hazard owing to the possibility that the parts of a LWES, or material (ice or other debris) accumulated on its rotating elements, could be dislodged and fall or be thrown some distance onto surrounding property.

EXCESSIVE NOISE – Any noise that causes a nuisance or disturbance or degrades health or well-being.

FAA - The Federal Aviation Administration.

FREQUENCY – The number of occurrences of a repeating event per unit time; in cycles per second, expressed in Hz (Hertz).

HEALTH – State of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.

HERTZ (Hz) – A unit of frequency equal to one cycle per second.

HUB HEIGHT - The distance to the center of the turbine hub as measured from ground level to the center of the Wind Turbine hub.

IMPACT(S) – Any effect on the environment, including sound and visual impacts such as changes in sound pressure, noise, and light in the environment.

IMPULSIVE SOUND – Single or multiple noise events lasting one second or less; measured with the un-weighted peak sound pressure level and “Impulse” (35msec) or “Fast” (125 msec) meter response.

INFRASOUND – Sound energy below 20 Hz.

LARGE WIND ENERGY SYSTEM (LWES)” - An electricity generating facility, with a generating capacity of over 100 kilowatts and less than 30 megawatts, consisting of one or more Wind Turbines, including any substations, Met Towers, cables/wires and other buildings accessory to such facility.

LDN – The day/night level is the 24 hour average of continuous “A-weighted” sound energy having a 10 decibel penalty added to the nighttime hours of 10 p.m. to 7 a.m.

Leq – The equivalent continuous sound level that has the same acoustic energy for a constant sound level as for a fluctuating or intermittent level in the same period of time.

LOAEL – The “Lowest Observed Adverse Effect Level”; 40 dBA, WHO 2009.

NIGHTTIME – Hours from 7:00 PM to 7:00 AM.

NOEL – The “No Observed Effect Level”; 30 dBA, WHO 2009.

NOISE – Unwanted or any sound that is not part of the natural environment.

NOISE EMITTER – Any man-made piece of LWES equipment that is audible beyond the property line of a Participating Landowner.

NOISE LEVEL – Energy-equivalent sound pressure level (Leq) over a minimum of a ten-minute interval.

OCTAVE BAND – A band of sound covering a range of frequencies such that the highest is twice the lowest, as defined in ANSI Standard S1.11.

ONE-THIRD OCTAVE BAND – A band of sound covering a range of frequencies such that the highest frequency is the cube root of two times the lowest, as defined in ANSI Standard S1.11.

PROJECT BOUNDARY- A continuous line, which encompasses all Wind Turbines and related equipment to be used in association with a Large Wind Energy System.

PURE TONE – Sinusoidal sound energy for a single frequency or pitch.

SOUND LEVEL – The weighted sound pressure level obtained by the use of a sound level meter and frequency weighting network, such as A, B, or C as specified in ANSI specifications for sound level meters (ANSI SI.4-1971, or the latest revision).

SOUND POWER LEVEL – Lw. Ten times the logarithm to the base ten of the ratio of the sound power radiated by the source to a reference sound power, expressed in decibels (dBo). The reference sound power is 1 picowatt (pW).

SOUND PRESSURE LEVEL – Lp. Twenty times the logarithm to the base ten of the ratio of a given sound pressure to a reference sound pressure of 20 microPascals (uPa), expressed in decibels (dB).

UN-WEIGHTED (dBL) – A sound pressure level obtained without a weighting filter.

USEFUL LIFE- The LWES or individual Wind Turbine(s) will be presumed to be at the end.

WELFARE – A state of well-being.

WELL-BEING – A good or satisfactory condition of existence; a state characterized by health, happiness, and prosperity.

WIND SHEAR – The difference in atmospheric wind speed and direction occurring over relatively small increases in altitude (wind gradient).

## **NOISE LEVEL LIMITS AND MEASUREMENT.**

The intent of this section is to preserve the quiet rural environment of Orleans and to provide protection from Excessive Noise levels that cause adverse Impacts to public Health, Welfare, and Well-being. The existing Background Noise Levels in Orleans are less than 30 dBA. Annoyance due to Noise, as measured by community surveys, is the consequence of activity interference. Noise Level limits are based on the recommended guidelines found in the United States Environmental Protection Agency's document *Information On Levels Of Environmental Noise Requisite To Protect Public Health And Welfare With An Adequate Margin of Safety, 550/9-74-004, March 1974* and include levels requisite to protect against activity interference. These Noise Level Limits are consistent with the World Health Organization (WHO) night noise guidelines for exposure to noise during sleep found in the following documents: *Night Noise Guidelines (NNLG) for Europe, 2007* and *ISBN 978 92 890 4173 7, 2009*.

Noise Levels produced by the LWES shall not exceed 33 dBA (Leq 10 minute) anywhere at any time on a Non-Participating Landowner's property.

LWES Noise Levels shall not exceed a Community Noise Response (CNR) of "sporadic complaints" as shown on the following table based on the United States Environmental Protection Agency Document titled "Information On Levels Of Environmental Noise Requisite To Protect Public Health And Welfare With An Adequate Margin of Safety, 550/9-74-004, March 1974."

Community Noise Reaction (CNR)	Leq
Vigorous Action	50 – 58
Appeals to Stop the Noise	44 – 49
Widespread Complaints	34 – 43
Sporadic Complaints	30 – 33
No Reaction	24 – 29

Chart based on EPA Case Studies normalized to Leq in rural areas [Leq (-6dB), quiet rural community (-10dB), no prior exposure to intruding noise (-5dB), pure tone or impulsive noise character (-5dB)]

- Any model used to predict Wind Turbine Noise shall use the following parameters:
- Each Wind Turbine shall be considered as an individual and unique noise emitter;
- The prediction model shall use a wind shear (wind profile power law exponent, alpha) of no less than 0.50, where wind shear is defined as the

difference in atmospheric wind speed and direction occurring over relatively small increases in altitude;

- No attenuation (zero) for ground cover since a Wind Turbine is an elevated noise emitter;
- No attenuation (zero) for foliage since trees have no leaves from November to April;
- Add a plus 5 dB design margin to the predicted Noise Levels to account for variations in atmospheric propagation due to refraction (the bending of sound waves in the atmosphere due to changes in air temperature or wind gradient).

### **Noise Compliance Report.**

Within four (4) months of the first Wind Turbine becoming operational and again within two (2) months after all Wind Turbines have become operational and at anytime the Planning Board deems it necessary due to the number of complaints received, the Applicant/Owner/Operator shall submit to the Planning Board a noise compliance report certifying compliance with the noise regulations set forth herein. The report shall be prepared by a professional acoustical engineer, approved by the Planning Board, who is a Full Member of the Institute of Noise Control Engineering (INCE), or who possesses some comparable qualification. The report shall comply with the following:

- a. Except as specifically noted otherwise, sound measurements shall be conducted in compliance with the latest version of the American National Standards Institute (ANSI) Standard S12.18-1994 "Outdoor Measurements of Sound Pressure."
- b. Sound level meters and calibration equipment shall comply with the latest version of ANSI Standard S1.4 "Specifications for General Purpose Sound Level Meters," and shall have current calibration traceable to the National Institute of Standards and Testing (NIST).
- c. Noise measurements shall be taken at locations and times when the Wind Turbine is clearly audible and dominating the acoustical environment. All unattended measurements shall consider the Wind Turbine as dominating the acoustical environment.
- d. Noise measurements shall be taken with the turbines on and off to determine any Background Noise to be accounted for. The Applicant/Owner/Operator shall cooperate by shutting turbines off and

turning them on during acoustic testing at times required by the acoustic monitoring personnel.

- e. The acoustic monitoring personnel shall determine if extraneous sounds such as insects, frogs, or other sounds are contributing to the measured Leq noise level and remove their contributions either by relocating the measurement microphone to a spot not affected by such sounds or conducting testing at dates and times when such sounds are not present. The acoustic monitoring personnel may correct the Leq noise level using full or 1/3 octave band analysis to subtract Turbine Off levels from Turbine On levels, and by removing data in 1/3 octave bands from the Leq computation that are contaminated by extraneous sounds.
- f. The wind velocity at the sound measurement microphone shall not exceed 2 m/s (4.5 mph) during measurements of Background Noise, and the maximum wind speed at the microphone for noise measurements during turbine operation should not exceed 4 m/s (9 mph).
- g. During Wind Turbine testing the atmospheric profile shall be Pasquill Stability Class E or F preferred, Class D as alternate. Wind Turbine acoustic testing shall be conducted with wind speeds at Hub Height at 8 m/s or greater.
- h. The Wind Turbine shall be fully engaged blades-to-generator and running the standard power output program and producing the maximum power output for the incoming wind speed at Hub Height. Feathering or other blade angle manipulations that are not part of the normal Wind Turbine program to obtain maximum power output shall be prohibited during acoustic testing unless the Wind Turbine must be feathered due to a high wind condition for safety purposes, in which case the testing shall be rescheduled.
- I. Wind Turbine power output and wind speed data at Hub Height at 10-minute or shorter intervals shall be provided to the acoustic monitoring personnel by the Applicant/Owner/Operator for the entire sound measurement period.

### 3. PUBLIC INQUIRIES AND COMPLAINTS:

The LWES Applicant/Owner/Operator shall maintain a phone number and identify a responsible person for the public to contact with inquiries and complaints throughout the life of the project, including the decommissioning phase. The Complaint Resolution Process submitted with the Site Plan Review application shall be used to resolve complaints. However, this process shall not preclude the local

government from acting on a complaint and local provisions for complaint resolution shall prevail and supersede all Applicant/Owner/Operator complaint resolution processes.

- Any individual, group of individuals or reasonably identifiable entity may file a signed and dated written complaint with the Applicant/Owner/Operator of the LWES. If any complaints are received by phone, the Applicant/Owner/Operator shall inform the complainant that complaints must be submitted in writing. Any complaints received directly by the Board of Selectmen or the Planning Board shall be referred to the Applicant/Owner/Operator.
- The Applicant/Owner/Operator of the LWES shall report to the Planning Board all complaints received concerning any aspect of the LWES construction, operation, or decommissioning as follows:
- Complaints received by the Applicant/Owner/Operator shall be reported to the Planning Board or its designee within five (5) business days, except that complaints regarding unsafe or serious violations of this Article shall be reported to the Planning Board or its designee the following business day.

The Applicant/Owner/Operator shall document each complaint by maintaining a record including at least the following information:

- Name of the LWES and the Applicant/Owner/Operator
- Name of complainant, address, phone number
- A copy of the written complaint
- Specific property description (if applicable) affected by complaint
- Nature of complaint (including weather conditions if germane)
- Name of person receiving complaint, date received
- Date reported to the Planning Board or its designee
- Initial response, final resolution, and date of resolution

The Applicant/Owner/Operator shall maintain a chronological log of complaints received, summarizing the above information. A copy of this log, and a summary of the log by type of complaint, shall be sent on or before January 15, March 15, July 15, and October 15 to the Planning Board, covering the previous calendar quarter. An annual summary shall accompany the January 15 submission.

The Planning Board shall forward copies of any health related complaints to the State Board of Health.

All complaints regarding unsafe and serious violations as defined herein shall be investigated on site. The complainant and a Planning Board designee shall be invited to the investigatory meeting(s).

The Planning Board may designate a person to seek a complaint resolution that is acceptable to the complainant, the Planning Board and the Applicant/Owner/Operator. If such a resolution cannot be obtained, the Town Board may take action as authorized by the enforcement section herein.

The Town Board may at any time determine that a complaint shall be subject to enforcement and penalties as defined herein.

### **ADMINISTRATION AND ASSOCIATED COSTS:**

This Article shall be administered by the Planning Board. Violations found by the Planning Board upon examination of required reports, or from other sources, shall be forwarded to the Town Board for enforcement action. This does not foreclose any legitimate legal action by the Planning Board.

As a condition of approval, the Applicant/Owner/Operator shall deposit into an escrow account the amount of \$25,000.

The purpose of this joint escrow account is:

To reimburse the Town for the costs incurred to hire consultants and experts as the Town, at its sole discretion, deems desirable to examine, evaluate, and verify the data and statements presented by the Applicant/Owner/Operator.

The escrow account shall be managed as follows:

- i. Funds may be withdrawn from this account only by the Town Board.
- ii. If at any time the balance of this account shall fall below \$15,000, the Applicant/Owner/Operator shall deposit an amount sufficient to bring the account to a minimum value of \$25,000.
- iii. If at any time the balance of this fund shall fall below \$15,000 for a continuous period of thirty (30) days, the application shall be considered to have been withdrawn, or the approval for the LWES may be revoked.
- iv. The Town Board or its designee shall be charged with monitoring the escrow account and giving quarterly reports to the Planning Board.
- v. After the wind energy system has been removed and site restoration has been completed, as defined in this law, any balance remaining in this account shall be returned to the Applicant/Owner/Operator.

Section 16 Noise and Setback Easements  
**... repealed and reserved ...**

Section 18 Decommissioning  
**... repeal and replace ...**

- A. If any WECS remains non-functional or inoperative for a continuous period of six (6) months, the applicant agrees that, without any further action by the Town Board, it shall remove said system at its own expense as per paragraph C below. This provision shall not apply if the applicant demonstrates to the Town Board that it has been making good faith efforts to restore the WECS to an operable condition, but nothing in this provision shall limit the Town Board's ability to order a remedial action plan.

**... repeal and replace ...**

- C. Decommissioning and Site Restoration Plan and Requirements. An application for a WECS permit shall include a decommissioning and site restoration plan (the "Plan") containing the information and meeting the requirements in this section, and Section 10(J).
  - 1. The Plan shall provide for the removal from the Project Parcels, and lawful disposal or disposition of all Wind Turbines and other structures, hazardous materials, electrical facilities, and all foundations to a depth of not less than 36 inches below grade. The Plan shall provide for the removal of all access roads that the owner of the Project Parcels wants removed. The Plan shall provide for the restoration of the Project Parcels to farmland of similar condition to that which existed before construction of the WECS.
  - 2. The Plan shall provide for the decommissioning of the Site upon the expiration of the WECS permit or upon the abandonment of the WECS. The WECS shall be deemed abandoned if its operation has ceased for six (6) consecutive months.
  - 4. The Plan shall include provisions for financial security to secure completion of decommissioning (removal of non-functional towers and appurtenant facilities) and site restoration. The applicant, or successors, shall continuously maintain a fund payable to the Town of Orleans, in a form approved by the Town Attorney, and in an amount to be determined by the Town Board for the period of the life of the facility. This fund shall be no less than 120% of the cost of full decommissioning (excluding salvage value) and restoration in the form of cash on deposit with the Town or cash held in escrow in a New York licensed-financial institution, pursuant to an

agreement acceptable to the Town Board. All decommissioning funding requirements shall be met prior to commencement of construction.

Section 22 – Application for Wind Measurement Towers.

**... add ...**

- F. If a Wind Measurement Tower is a part of, or is related to, a potential project for a Wind Energy Conversion System, as defined in the Wind Energy Facilities Law of the town of Orleans, New York (the "Project"), and regardless of whether an application for the Project will be processed before the State of New York, or any of its agencies, or the Town of Orleans, or any of its agencies, the applicant shall provide all information as required by Article II hereof, in regard to the Project, unless specifically waived by the Town Board.