

Local Law No. __ of _____

Wind Energy Facilities

Be it hereby enacted by the Town Board of the Town of Warren as follows:

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ARTICLE I – INTRODUCTION

§1. TITLE

This Local Law may be cited as the "Wind Energy Facilities Local Law" of the Town of Warren, New York.

§2. PURPOSE

The Town Board of the Town of Warren adopts this Wind Energy Facilities Local Law to promote the effective and efficient use of the town's wind energy resource through wind energy conversion systems (WECS), without harming public health and safety, and to avoid jeopardizing the welfare of the residents.

§3. AUTHORITY

The Town Board of the Town of Warren enacts this Wind Energy Facilities Local Law under the authority granted by:

1. Article IX of the New York State Constitution, § 2 (c)(6) and (10) pg. 4
2. New York Statute of Local Governments, § 10 (1) and (7).
3. New York Municipal Home Rule Law, § 10 (1)(i) and (ii) and § 10(1)(a)(6), (11), (12), and (14), § 10(2)(d)(3).
4. New York Town Law §130(1) (Building Code), (3) (Electrical Code), (5) (Fire Prevention), (7) (Use of Streets and Highways), (7-a) (Location of Driveways), (11) (Peace, Good Order and Safety), (15) (Promotion of Public Welfare), (15-a) (Excavated Lands), (16) (Unsafe Buildings), (19) (Trespass), and (25) (Building Lines).
5. New York Town Law §64(17-a) (Protection of Aesthetic Interests), (23) (General Powers).
6. New York Real Property Tax Law § 487.

§4. FINDINGS

The Town Board of the Town of Warren finds and declares that:

1. While wind energy is a renewable energy resource, there are significant impacts including noise, shadow flicker, vibration, air turbulence, electromagnetic interference, television reception interference, ice and other weather created hazards, aesthetic and physical hazards such that the potential benefits must be balanced against potential impacts.
2. The generation of electricity from properly sited small wind turbines can be a mechanism for reducing on-site electric costs, with a minimum of environmental impacts.
3. Regulation of the siting and installation of wind energy facilities is necessary for protecting the health, safety, and welfare of neighboring property owners and the general public.

4. Utility-scale wind energy facilities represent significant potential aesthetic impacts; because of their large size, noise, lighting, and shadow flicker effects.
5. The high elevation of the Town of Warren and the lack of street lights results in clear, dark night skies as compared to the lower elevation metropolitan areas. The relatively dark skies offer opportunities for astronomy, astrophotography and casual stargazing. The presence of flashing lights, strobe lights or rotating blades from utility-scale wind energy facilities will impair the enjoyment of this resource.
6. Installation of utility-scale wind energy facilities can create drainage problems through erosion and lack of sediment control for facility and access road sites, and harm farmlands through improper construction methods.
7. The Town of Warren does not have the low density of residences typically found in wind farm host communities where wind energy facilities have found their greatest acceptance and the wind resource is strongest. Residential density is spread out evenly along a few key roads. The pattern of residentially used land creates a pattern with residential properties intermingled with agricultural properties.
8. There are significant historic and recreational resources in the Town of Warren and in adjoining towns that would be harmed by the construction of utility-scale wind energy facilities in the town, including parks, golf courses, trails, hunting grounds and historic properties. There would be a negative impact on these resources by the inclusion of one or more utility-scale wind energy facilities across the landscape of the town.
9. Utility-scale wind energy facilities may present risks to the property values of adjoining property owners.
10. Utility-scale wind energy facilities may be significant sources of noise, which, if not properly and adequately regulated, can negatively impact adjoining properties, particularly in areas of low background noise levels.
11. Numerous residents of the nearby Town of Fairfield have complained about high sound levels from operation of large industrial wind energy facilities installed near homes. These complaints have occurred despite the fact that pre-construction analytical predictions concluded that sound levels would be within acceptable limits. This leads to the conclusion that pre-construction analytical predictions of sound must comply with appropriate standards and be independently verified. Minimum setbacks from residences are necessary to mitigate noise impacts due to the uncertainty of these models.
12. While mechanical sounds of wind turbines have been reduced by modern designs, aerodynamic sounds by air turbulence around the turbine blades have increased with increasing turbine size.
13. The closer people live to wind energy facilities the more likely they will experience noise annoyance or develop adverse health effects from noise. However, it is common for those located very close to a wind energy facility or facilities to hear less noise than those farther away, due to the formation of a "shadow zone" upwind of the turbine. This has been demonstrated by the on-going problems reported by residents in the Town of

Fairfield in which industrial wind energy facilities have become operational recently. This has also been demonstrated by continuing reports of problems related to noise at other recent wind energy projects throughout the United States. Further, the degree of difficulties resulting from the sound of wind energy facilities seems clearly related to the distance from the turbines, though the literature has studied a variety of turbine sizes in a variety of locations. A setback of 2,460 feet from residences would eliminate most noise complaints. Research conducted by Bajdek (2007) showed that at approximately 0.8 km (½ mile) from wind turbines, 44% of the population would be highly annoyed by wind turbine noise. At a distance of approximately 1.62 km (1 mile) from wind turbines, the percent of highly annoyed people is expected to drop to 4%. Kamperman and James reviewed several studies to determine the impact of wind turbine noise on nearby residents. Their review showed that some residents living as far as two miles from wind turbines complained of sleep disturbance from turbine noise and many residents living 1,000 feet from wind turbines experienced major sleep disruption and other health problems from nighttime turbine noise. Van den Berg (2006) studied a wind farm in northwestern Germany and discovered that residents living 500 meters (1,640 feet) from the wind turbines reacted strongly to wind turbine noise and residents up to 1,900 meters (1.18 miles) from the wind turbines expressed annoyance. A survey conducted by Pedersen and Wayne (2008) found that less than 10% of the respondents experienced sleep disturbance at distances of 1,984 feet to 3,325 feet and found that the sound from wind turbines was of greater concern in rural environments because of the lower ambient noise. Wind project developer North Wind and Power LLC (November 23, 2009) has stated in its marketing literature that the "Minimum Distance from residences owned by non-participating landowners: 2,500 ft".

14. Several studies recommend wind turbines be located between ½ mile to over 1 mile from residences. To avoid adverse noise impacts, the Western Australia Planning Commission Bulletin recommends that wind energy systems include sufficient buffers or setbacks to residences of 1 km (0.62 mile). The National Wind Collaborating Committee states that an appropriate setback distance may be up to ½ mile. The National Research Council states that noise produced by wind turbines generally is not a major concern for humans beyond one mile or so. The Wisconsin Towns of Woodville, Clay Banks, Magnolia, Wilton and Ridgeville recently adopted large wind turbine ordinances with setbacks of ½ mile from residences. The French National Academy of Medicine and the UK Noise Association suggest a 1.5 km (approximately 1 mile) distance between large wind turbines and residences. See Gueniot (2006), Dr. Amanda Harry (2007), Dr. Nina Pierpont (2006), and Frey and Hadden (2007) recommend a setback greater than 1 mile.

15. It is noted that the Wind Turbine Handbook (Burton, 2001, January 2008 Printing) notes that a ten-rotor diameter setback is likely necessary to protect from the impact of noise, shadow flicker and visual domination. The Department of the Environment, Northern Ireland (2009), establishes a best practice guideline of a separation distance between a WECS and occupied property of 10 times the rotor diameter.

16. Background sound levels in rural residential areas in New York are commonly in the range of 20 dBA to 30 dBA at night. See Kamperman and James (2008), pg. 2

17. A C-weighted sound determination dB(C) is needed to minimize adverse health effects from low frequency noise. A dB(C) requirement will likely result in setbacks between large wind turbines and nearby residences of 1 km, (0.62 miles) or greater for 1.5 to 3 MW wind turbines if wind turbines are located in rural areas where L90A background levels are close to 30 dB(A). (See Kamperman & James; WHO 1999; Bajdek Noise-Con 2007; Pedersen and Waye 2008).
18. Wind turbines may present a risk to bird and bat populations if not properly sited.
19. Utility-scale wind energy facilities have a life of approximately 20 years and can potentially operate 21 hours a day. It is expected that over 20 years land use patterns will change with the long term trend being increase in residential use as compared to agricultural use. Thus, prediction of sound impact should consider property lines at locations authorized for residential purposes rather than pre-existing residences.
20. Construction of utility-scale wind energy facilities can create traffic problems and damage local roads.
21. Many seasonal and year-round residents rely on wireless telephone service for both routine and emergency communications. Similarly, many residents rely on broadcast data and television. If improperly sited, utility-scale wind energy facilities can interfere with these or other types of communications. It is difficult to analytically predict the impact on radio communications from utility-scale wind energy facilities yet the potential impairment of access to emergency services is an unacceptable risk.
22. The Town of Warren has many snowmobile trails transecting many of its open areas and hill tops. Wind turbines accumulate and shed ice, 60% of which has been shown to be thrown beyond the rotor radius (see Cattin, et. al., 2007). This phenomenon creates a potential hazard to riders.
23. A utility-scale wind energy facility is typically hundreds of feet tall. Decommissioning of such a structure is complex, dangerous work. Material scrap values vary greatly on daily to yearly time scales. Thus, it is inappropriate to accept scrap values as security for decommissioning.
24. Adverse health effects from wind turbine noise can be exacerbated by the rotating blades and shadows from the wind turbines. As wind turbine blades rotate in front of a rising or setting sun, they cast a strobe-like flicker that cannot be avoided by occupants. Shadow flicker can cause some people to become dizzy, nauseated or lose their balance when they see the movement of the shadow. Shadow flicker from wind turbines at greater than 3 Hz poses a potential risk of inducing photosensitive seizures. While turbines are generally designed to avoid shadow flicker of this frequency, higher frequencies can be generated if the shadow from two or more turbines are combined. Recent research has indicated that the risk of seizures does not decrease appreciably until the viewing distance exceeds 100 times the height of the hub, a distance typically more than 4 km. (See Harding, et. al. (2008)). Smedley, et al. (2010) however concluded that the risk of seizures diminished when the observer was greater than 1.2 times the turbine height and looking directly into the sun but noted that eye closure is a natural immediate protective action when exposed to flicker, and so has the unfortunate consequence of exacerbating its adverse effect in this context. Considering that an

observer might close the eyes, Smedley ,et al. found that "For the scenarios considered, we find the risk is negligible at a distance more than about nine times the maximum height reached by the turbine blade, a distance similar to that in guidance from the United Kingdom planning authorities." Further, the National Wind Coordinating Committee (1998) recommends a setback of 10 rotor diameters to avoid shadow flicker on occupied structures. (See also: Cummings (2008); Burton et al. (2001); UK Noise Association (2006); and Pierpont (2006a and 2006b)). The Town of Warren concludes that wind turbines should be sited such that shadows from wind turbine blades do not fall upon the windows of nearby residences or within 100 feet of residences for any considerable period.

25. If placed too close to a road, the movement of the wind turbine blades and resulting shadow flicker can distract drivers and lead to accidents. (See National Research Council (2007), pg. 161).

26. Since the State of New York has enacted "Executive Law Chapter 18, Article 6, Section 94-c" which could potentially allow for construction of a utility scale energy facilities, it is necessary to provide reasonable substantive standards.

§5. DEFINITIONS

As used in this Wind Energy Facilities Local Law, the following terms shall have the meanings indicated:

ACCESSORY USE- A use customarily incidental and subordinate to the principal use or building, located on the same lot or premises as the principal use or building.

AGRICULTURAL OR FARM OPERATIONS - Agricultural or Farm Operations are the land and on-farm buildings, equipment, manure processing and handling facilities, and practices which contribute to the production, preparation and marketing of crops, livestock and livestock products as a commercial enterprise, including a commercial horse boarding operation and "timber processing". Such farm operation may consist of one or more parcels of owned or rented land, which parcels may be contiguous or noncontiguous to each other.

AMBIENT SOUND -Ambient sound encompasses all sound present in a given environment, being usually a composite of sounds from many sources near and far. It includes intermittent Noise events, such as, from aircraft flying over, dogs barking, wind gusts, mobile farm or construction machinery, and the occasional vehicle traveling along a nearby road. The ambient also includes insect and other nearby sounds from birds and animals or people. The near-by and transient events are part of the Ambient Sound environment but are not to be considered part of the long-term Background Sound.

ANSI - The AMERICAN NATIONAL STANDARDS INSTITUTE.

APPLICANT - An Applicant is the individual or business entity that seeks a permit under this section of the Town municipal code.

BACKGROUND SOUND - Background Sound is the "residual sound" heard during lulls in the Ambient Sound environment as defined by ANSI Standard 12.9, Part 2, and represents the quietest 10% of the time, during any given hour.

BUILDABLE LOT -A property which meets the requirements for issuance of a building permit as set forth in the local building code. However, for a property which is used for Agricultural and Farm Operations and which is not subdivided into lots for purposes of residential construction; only that portion of the property abutting a public highway and extending not more than 500 feet there from which meets the minimum road frontage requirements for issuance of a building permit shall be considered a Buildable Lot for purposes of this Local Law.

CEO (Code Enforcement Officer) - The Code Enforcement Officer appointed by the Town Board of the Town of Warren.

dBA - A-Weighted Sound Pressure Level in Decibels. A measure of over-all Sound Pressure Level designed to reflect the response of the human ear, which does not respond equally to all frequencies. It is used to describe sound in a manner representative of the human ear's response. It reduces the effects of low frequencies and emphasizes frequencies centered around 1000 Hz. The resultant sound level is said to be "Weighted" and the units are "dBA". Sound level meters have an A-weighting network for measuring A-weighted sound levels (dBA) meeting the characteristics and weighting specified in ANSI Specifications for Integrating Averaging Sound Level Meters, 51.43-1997 for Type 1 instruments. In this law dBA means LAeq unless specified otherwise.

dBC - C-Weighted Sound Pressure Level in Decibels. Similar in concept to the A-Weighted sound Level (dBA) but C-weighting emphasizes sound frequencies between 20 and 200 Hz. does not de-emphasize the frequencies below 200 Hz as A-weighting does. dBC is used for measurements that must include the contribution of low frequencies in a single number representing the entire Frequency spectrum. Sound level meters have a C-weighting network for measuring C-weighted sound levels (dBC) meeting the characteristics and weighting specified in ANSI SI.43-1997 Specifications for Integrating Averaging Sound Level Meters for Type 1 instruments. In this law dBC means Leq unless specified otherwise.

DECIBEL - A dimensionless unit describing the amplitude of sound and denoting the ratio between two quantities that are proportional to power, energy, or intensity. One of these quantities is equal to 20 times the logarithm to the base 10 of the ratio of the measured pressure to the reference pressure, which is 20 micro Pascals.

EAF - Full Environmental Assessment Form used in the implementation of the SEQRA as that term is defined in Part 617 of Title 6 of the New York Codes, Rules and Regulations.

FREQUENCY - The number of oscillations or cycles per unit of time. Acoustical Frequency is usually expressed in units of Hertz (Hz) where one Hz is equal to one cycle per second.

HEIGHT -The total distance measured from the grade of the property as existed prior to the construction of the wind energy system, facility, Tower, turbine, or related facility at the base to its highest point. Height shall include the blade extended in a fully vertical position.

HERTZ (Hz) - Frequency of sound expressed by cycles per second.

HISTORICALLY SIGNIFICANT STRUCTURE - A structure is presumed to be historically significant to the Town of Warren if it is located within the Town limits and was built prior to 1900 or if located outside of the Town of Warren and was built prior to the Town's founding in 1796. Structures that are associated with important historical figures or events may also be historically

significant regardless of when constructed. All structures listed on the New York State or Federal Registers of Historic Places are considered significant.

HOCCPP – Herkimer-Oneida County Comprehensive Planning Program

INFRA -SOUND - Sound with energy in the Frequency range of 0-20 Hz is considered to be infra-sound. It is normally considered to not be audible for most people unless in relatively high amplitude. However, there is a wide range between the most sensitive and least sensitive people to perception of sound and perception is not limited to stimulus of the auditory senses. The most significant exterior Noise induced vibration in Residences occurs in the Frequency range between 5 Hz and 50 Hz. Levels below the threshold of audibility can cause measurable vibrations within Residence interiors. Conditions that support or magnify such vibrations may also exist in human body cavities and organs under certain conditions. See low-Frequency Noise (LFN) for more information.

ISO - International Standards Organization

LARGE WIND ENERGY CONVERSION SYSTEM or Large WECS - A Wind Energy Facility consisting of a wind turbine(s), tower(s) and associated control or conversion electronics, which has a Name Plate Rating of more than 50kW

LEQ - The equivalent steady-state sound level which contains the same acoustic energy as the time varying sound level during a one-hour period. It is not necessary that the measurements be taken over a full one-hour time interval, but sufficient measurements must be available to allow a valid extrapolation to a one-hour time interval. [taken verbatim from NYSDEC landfill regulations, 6 NYCRR § 260.1.14(p)]

LEQ must be reported as an A-weighted or C-weighted sound level, as appropriate, i.e., LAeq or Lceq. For more information, see "Sound Pressure Level," below. Leq is also considered the average sound level during an hour.

LOCAL LAW - The Wind Energy Facilities Local Law of the Town of Warren.

LOW FREQUENCY NOISE (LFN) - Sounds with energy in the lower Frequency range of 20 to 200 Hz. LFN is deemed to be excessive when the difference between a C-weighted sound level and an A-weighted sound level is greater than 20 Decibels at any Measurement Point outside a Residence or other occupied structure.

MEASUREMENT POINT (MP) - The location where sound measurements are taken such that no significant obstruction blocks sound from the Site. The Measurement Point should be located so as to not be near large objects such as buildings and in the line-of-sight to the nearest turbines. Proximity to large buildings or other structures should be twice the largest dimension of the structure, if possible. Measurement Points should be at quiet locations remote from street lights, transformers, street traffic, flowing water and other intermittent Noise sources.

MEASUREMENT WIND SPEED - For measurements conducted to establish the background Noise levels (LA90 10 min , LC90 10 min , etc.) the maximum wind speed, sampled within 5 meters (m) of the microphone and at its height, shall be less than 2 meters per second (m/s) (4.5 mph) for valid background measurements. The wind speed at the WECS blade height shall be at or above the nominal rated wind speed and operating in its highest sound output mode. For purposes of enforcement, the wind speed and direction at the WECS blade height shall be

selected to reproduce the conditions leading to the enforcement action while also restricting maximum wind speeds at the microphone to less than 4 m/s (9 mph). For purposes of models used to predict the sound levels and Sound Pressure Levels of the WECS to be submitted with the Application, the wind speed shall be the speed that will result in the worst-case LAeq and LCeq sound levels at the nearest non-participating properties to the WECS. If there may be more than one set of nearby Sensitive Receptors, models for each such condition shall be evaluated and the results shall be included in the Application.

NAME PLATE RATING - The maximum rated electrical output of a WECS.

NOISE -means any unwanted sound. Not all Noise needs to be excessively loud to represent an annoyance or intrusion, thereby becoming unwanted.

NON-PARTICIPATING LANDOWNER – Landowner that is not under contract with energy development company to receive compensation from energy development.

PARTICIPATING LANDOWNER – Land owner that is under contract with the energy development company to receive compensation from energy development.

PERMIT HOLDER- The individual or business that currently holds a valid permit issued under this section of the Town municipal code.

PLANNING BOARD – The Town of Warren Planning Board

PROJECT BOUNDARY - The external property boundaries of parcels owned by or leased by the WECS developers. It is represented on a plot plan view by a continuous line encompassing all WECS(s) and related equipment associated with the WECS project.

PROPERTY LINE - The recognized and mapped property parcel boundary line.

PROPERTY OWNER - The owner of a parcel within the Project Boundary.

PROTECTED HISTORIC STRUCTURE - A Historical Structure is protected under this Local Law if it is listed on the New York State or Federal Registers of Historic Places or if it predates the Town's founding in 1796, whether or not located in the Town of Warren.

RESIDENCE - Any Residence for habitation, either seasonally or permanently by one or more persons. A Residence may be part of a multi-Residence or multipurpose building, and shall include buildings such as hotels, hospitals, motels, dormitories, sanitariums, nursing homes, schools or other buildings used for educational purposes, or correctional institutions. In addition to existing Residences, properties with a validly issued building permit for a residential structure shall also be deemed to be Residences for purposes of this Local Law.

ROTOR DIAMETER - The swept diameter of the rotating blades of a WECS.

SENSITIVE RECEPTOR - A place or property intended for human habitation, whether inhabited or not, including but not limited to public parks, state and federal wildlife areas, the manicured areas of recreational establishments designed for public use, including but not limited to golf courses, camp grounds and other nonagricultural state or federal licensed businesses, hunting grounds, whether private or public, schools, daycare centers, elder care facilities, hospitals, places of seated assemblage, non-agricultural businesses and Residences. These areas are more likely to be sensitive to the exposure of the Noise, shadow or flicker, etc. generated by a

Wind Energy Facility. SEQRA - The New York State Environmental Quality Review Act and its implementing regulations in Title 6 of the New York Codes, Rules and Regulations, Part 617.

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 or a group of individuals controlling single or adjacent properties. Where multiple lots are in joint ownership, the combined lots shall be considered as one for purposes of applying setback requirements. Any property which has a Wind Energy Facility or has entered into an agreement for said Facility or a setback agreement shall be considered a Site.

SMALL WIND ENERGY CONVERSION SYSTEM or Small WECS - A wind energy facility consisting of a wind turbine(s) tower(s), and associated control or conversion electronics, which has a Name Plate Rating of less than 50kW.

STRATEGIC VANTAGE POINT - A vantage point is a location from which to assess the visual impact of a Wind Energy Facility. A vantage point is considered strategic if the public can be expected to congregate there for educational or civic purposes; religious observance; enjoyment of historic or cultural resources; or for recreation whereby the enjoyment of the natural environment is a key aspect of the recreational activity. Strategic Vantage Points include both public and private venues. Some examples include: Schools, Golf Courses, Churches, Public buildings, Historically Significant Structures, Parks, Museums and Cemeteries. Additionally, roads and highways are considered Strategic Vantage Points.

SOUND PRESSURE LEVEL - The level, expressed in Decibels, which is equaled or exceeded a stated percentage of time. Sound Pressure Level is spectrally weighted to correspond to a Frequency spectrum of interest. For example, the A-weighted Decibel scale (dBA) represents those frequencies most readily audible to the human ear. The C-weighted Decibel scale (dBC) approximates response of the human ear to low-Frequency sounds. The G-weighted Decibel scale (dBG) is designed to measure infrasound.

TOWER - The structural mast on which a turbine is mounted.

TOWN - The Town of Warren

TOWN BOARD - The Town Board of the Town of Warren

TURBINE HEIGHT - The height of the WECS to its furthest vertical extension above ground level.

WIND ENERGY CONVERSION SYSTEM or WECS) – A complex system of interconnected components that together convert the kinetic energy of the wind into mechanical energy and subsequently into electrical energy with aid of generators. Excludes Wind Measurement Towers.

WIND ENERGY FACILITY - Any Wind Energy Conversion System or Wind Measurement Tower including all related infrastructure, electrical lines and equipment, access roads and accessory structures and facilities.

WIND ENERGY PERMIT - A permit issued by the Planning Board for a Wind Energy Facility, other than a Wind Measurement Tower pursuant to this Local Law

WIND MEASUREMENT TOWER or WMT- A Tower used for the measurement of meteorological data such as temperature, wind speed and wind direction.

WIND MEASUREMENT TOWER PERMIT - A permit issued for a Wind Measurement Tower pursuant to this Local Law.

§6. APPLICABILITY

A. The requirements of this Wind Energy Facilities Local Law shall apply to all Wind Energy Facilities proposed, operated, modified, or constructed in the Town of Warren after the effective date of this Wind Energy Facilities Local Law.

B. Wind Energy Facilities for which a required permit has been properly issued and upon which construction has commenced prior to the effective date of this Local Law, shall not be required to meet the requirements of this Local Law; provided, however, that

1. Any such preexisting Wind Energy Facility which does not provide energy for a continuous period of twelve (12) months shall meet the requirements of Local Law prior to recommencing production of energy.
2. No modification or alteration to an existing Wind Energy Facility shall be allowed except as detailed under this Local Law.

ARTICLE II SMALL WECS (<50kW)

§7. PURPOSE AND INTENT

The purpose of this Article is to provide standards for Small WECS. The intent of this Article is to encourage the development of Small WECS and to protect the public health, safety, and community welfare.

§8. PERMITS

A. This Local Law shall apply to all areas of the Town of Warren. No WECS is to be constructed without a Wind Energy Permit issued by the Planning Board and a Building Permit issued by the Code Enforcement Officer..

B. Notwithstanding the requirements of this Section, replacement in kind or modification of a permitted WECS may occur without Planning Board approval when there will be (1) no increase in Turbine Height; (2) no change in the location of the WECS; (3) no additional lighting or change in facility color; and (4) no increase in Noise produced by the WECS.

§9. APPLICATIONS & REVIEW

A. Application Contents. Applications for a Wind Energy Permit shall include:

1. Name, address, telephone number of the Applicant. If the Applicant will be represented by an agent, the name, address and telephone number of the agent, as well

as an original signature of the Applicant authorizing the agent to represent the Applicant is required.

2. Name, address, telephone number of the Property Owner. If the Property Owner is not the Applicant, the application shall include a letter or other written permission signed by the Property Owner (i) confirming that the Property Owner is familiar with the proposed applications and (ii) authorizing the submission of the application.

3. Address of each proposed WECS Site, including Tax Map section, block and lot number.

4. Evidence that the proposed Turbine Height does not exceed the height recommended by the manufacturer or distributor of the WECS.

5. A line drawing of the electrical components of the WECS in sufficient detail to allow for a determination that the manner of installation conforms to the Electric Code.

6. Sufficient information demonstrating compliance with the Standards for Small WECS

7. A visual analysis of the Small WECS as installed, which may include a computerized photographic simulation, demonstrating the visual impacts from nearby Strategic Vantage Points. The visual analysis shall also indicate the color treatment of the system's components and any visual screening incorporated into the project that is intended to lessen the system's visual prominence.

8. Such other information as the Planning Board may reasonably require.

B. Documented verification that the electric utility service provider that serves the proposed Site has been informed of the Applicant's intent to install an interconnected customer-owned electricity generator, unless the Applicant does not plan, and so states so in the application, to connect the system to the electricity grid.

C. Escrow agreement. The Town shall require the Applicant to fund an escrow agreement to cover the amount of the Town's cost to review the applicant's application(s) that exceeds the application fees paid by the applicant.

D. Pre-application meeting required. Applicants must request a pre-application meeting with the Planning Board at a regularly scheduled meeting.

E Application submittal. Eight(8)printed copies of the application plus an electronic(.pdf format) file of each document shall be submitted to the Planning Board.

F. Application sufficiency review. Planning Board shall within 30 days of receipt, or such longer time if agreed to by the applicant, determine if all information required by 6 NYCRR 617.3 and all financial agreements required under this Article are included in the application.

1. Unless the Planning Board waives any application requirement, no application shall be considered until deemed sufficiently complete.

2. If the application is deemed insufficient, the Planning Board shall provide the applicant with a written statement listing the missing information. No refund of application fees shall be made, but no additional fees shall be required upon submittal of the additional information, unless the number of Small WECS proposed is increased.

G. Public Hearing. When the application is determined to be complete The Planning Board shall hold at least one public hearing on the application.

1. The applicant shall provide notice of the public hearing by registered mail, return receipt to property owners parcels located wholly or partially within ½ mile radius of the proposed Small WECS Site, and shall publish a notice in the Town's official newspaper, no less than ten nor more than twenty days before any hearing, but, where any hearing is adjourned by the Planning Board to hear additional comments, no further publication or mailing shall be required. The applicant shall prepare, publish and mail the Notice of Public Hearing prepared by the Town, and shall submit an affidavit of service. The assessment roll of the Town shall be used to determine mailing addresses.

2. The public hearing may be combined with public hearings on any Environmental Impact Statement or requested waivers.

H. Herkimer Oneida County Comprehensive Planning Program. A full statement of the proposed action for the project shall also be given to HOCCPP per General Municipal law §§239-l and 239- m.

I. No Segmentation. The applicant shall disclose the full scope of planned numbers of Wind Energy Conversion Systems and shall not segment the application for purposes of reducing the apparent significance of proposed plans. Where the lead agency has reason to believe that the ultimate scope of the project might exceed that which is actually proposed by an applicant at one time, it shall conduct its review and base its findings on the larger potential scope.

J. Application Decision. Upon receipt of the recommendation of HOCCPP, the completion of the SEQRA process and the holding of the public hearing, the Town Planning Board may, within 62 days of the closing of the public hearing, approve, approve with conditions, or deny the application. The initial permit is valid for 5 years from the date of issue of the Wind Energy Permit.

K. Application Renewal. A Wind Energy Permit may be renewed for an additional period(s) of not more than 5 years upon satisfaction of the following conditions:

1. The Applicant submits an application for renewal of a Wind Energy Permit to the Planning Board not less than 90 days prior to expiration of any previous permit. Such application stays the expiration of the previous permit until the Town Planning Board decision.

2. Payment of a fee set by the Town Board

3. Decommissioning cost estimates are updated to reflect current costs and the financial security vehicle is adjusted accordingly.

4. The Applicant shall provide written notice of intent to renew the Wind Energy Permit via Registered Mail, Return Receipt to the owners of all parcels located wholly or partially within a radius of ½ mile of any Small WECS and shall publish notice of intent in the Town's Official Newspaper.

5. Following receipt of a sufficient application for Wind Energy Permit renewal, the Planning Board shall schedule a public hearing. The Applicant shall provide notice of the

public hearing by registered mail, return receipt to property owners within ½ mile of the Small WECS Site, and shall publish a notice in the Town's official newspaper, no less than ten nor more than twenty days before any hearing, but, where any hearing is adjourned by the Town Planning Board to hear additional comments, no further publication or mailing shall be required. The applicant shall prepare, publish and mail the Notice of Public Hearing prepared by the Town, and shall submit an affidavit of service. The assessment roll of the Town shall be used to determine mailing addresses.

6 A public hearing is held.

7. The Planning Board Decision. If after careful consideration of the application and the compliance or non-compliance of the Applicant with the terms of the Wind Energy Permit, the Town Planning Board may elect to renew, not renew or renew with conditions the Wind Energy Permit for a period of not more than 5 years. Should the applicant disagree with the decision of the Town Planning Board, the Applicant may petition the Town Planning Board within 30 days of its decision, and upon request shall be entitled to a Hearing before the Town Planning Board to be heard and present any evidence or witnesses as the Applicant may desire. Following the Hearing, the Town Planning Board may reconsider the application within 62 days and if the Permit is not renewed or renewed with conditions, shall provide a written rationale for its decision. Should the Wind Energy Permit not be renewed, the Wind Energy Facility shall be decommissioned following the requirements of this Local Law.

§10. DEVELOPMENT STANDARDS

All Small WECS shall comply with the following standards.

A. A Small WECS shall be located on a lot a minimum of two acres in size.

B. Only one Small WECS (plus, where authorized, a temporary Wind Measurement Tower) per legal lot shall be allowed. Where there are multiple Applicants, their joint lots shall be treated as one lot for purposes of this limitation.

C. Small WECS shall be used primarily to reduce the on-site consumption of utility-provided electricity.

D. Turbine Heights shall be limited as follows:

1. 85 feet or less on parcels between two and five acres.

2. 120 feet or less on parcels of five or more acres.

E. The allowed height shall be reduced if necessary to comply with all applicable Federal Aviation Requirements, including Subpart B (commencing with Section 77.11) of Part 77 of Title 14 of the Code of Federal Regulations.

F. The maximum allowable Name Plate Rating is less than 50kW

G. The WECS shall be painted a non-reflective, unobtrusive color that blends the WECS and its components into the surrounding landscape to the greatest extent possible and incorporate non-reflective surfaces to minimize any visual disruption.

H. The WECS shall be designed and located in such a manner to minimize adverse visual impacts from Strategic Vantage Points.

I. Exterior lighting on any structure associated with the WECS shall not be allowed except that which is specifically required by the Federal Aviation Administration.

J. All On-Site electrical wires associated with the Small WECS shall be installed underground, to the extent feasible, except for "tie- ins" to a public utility company and public utility company transmission poles, Towers and lines. This standard may be modified by the Planning Board if the project terrain is determined to be unsuitable due to reasons of excessive grading, biological impacts, or similar factors.

K. The WECS shall be operated such that no disruptive electromagnetic interference is caused. If it has been demonstrated that a Small WECS is causing harmful interference, the Small WECS operator shall promptly mitigate the harmful interference or cease operation of the Small WECS.

L. At least one sign shall be posted on the Small WECS at a height of five feet warning of electrical shock or high voltage and harm from revolving machinery. No brand names, logo or advertising shall be placed or painted anywhere on the Small WECS except that a manufacturer's logo may be in an unobtrusive manner

M. Towers shall be constructed to provide one of the following means of access control, or other appropriate method of access:

1. Tower-climbing apparatus located no closer than 12 feet from the ground.
2. A locked anti-climb device installed on the Tower.
- 3 A locked, protective fence at least six feet in height that encloses the Tower.

N. Anchor points for any guy wires for a Tower shall be located within the Site that the Small WECS is located on and not on or across any above-ground electric transmission or distribution lines. The point of attachment for the guy wires shall be enclosed by a fence six feet high or sheathed in bright orange or yellow covering from three to eight feet above the ground.

O. Construction of on-site access roadways shall be minimized. Temporary access roads utilized for initial installation shall be re-graded and re-vegetated to the pre-existing natural condition after completion of installation.

P. To prevent harmful wind turbulence from existing structures, the minimum height of the lowest part of any horizontal axis wind turbine blade shall be at least 30 feet above the highest structure or tree within a 250 foot radius. Modification of this standard may be made when the Applicant demonstrates that a lower height will not jeopardize the safety of the wind turbine structure.

Q. All Small WECS shall be designed and constructed to be in compliance with pertinent provisions of the Uniform Fire Protection and Building Code and National Electric Code.

R. All Small WECS shall be equipped with manual and automatic over-speed controls. The conformance of rotor and over-speed control design and fabrication with good engineering practices shall be certified by the manufacture.

S. No Small WECS shall be placed so as to:

1. Restrict solar access on an adjoining property
2. To not be in harmony with the orderly development of the Town
3. Imperil the public health and safety
4. Induce vibrations or Infra-Sound
- 5 Discourage the development and use of adjacent land and buildings or impair their value.

§11. SOUND and SETBACKS

A Small WECS shall comply with the following standards:

1. Setback requirements. A Small WECS shall not be located closer to a Property Line than one and a half times the Turbine Height of the WECS or ten times the Rotor Diameter, whichever is greater.
- B. WECS shall be designed, installed, and operated so that the Sound Pressure Level (Leq) generated by a Small WECS shall not exceed 45 dBA in daytime hours nor 35 dBA at night as measured at the nearest off-Site Residence existing at the time of approval (including structure under construction at said time), nor more than 6 dBA greater than either the nighttime or daytime pre-application Background Sound level measured in leaf-off conditions for a period of no less than 24 hours. Measurement of Background Sound may also be performed with the turbine turned off and with its blades trimmed to minimize Noise from aerodynamic effects.

§12. ENFORCEMENT and ABATEMENT

- A. All WECS shall be maintained in good condition and in accordance with all requirements of this section.
- B. Removal. A WECS which is not used for a continuous period of one (1) year shall be deemed abandoned and shall be dismantled and removed from the property at the expense of the Permit Holder. Failure to abide by and faithfully comply with this section or with any and all conditions that may be attached to the granting of any building permit shall constitute grounds for the revocation of the permit.

ARTICLE III LARGE WIND ENERGY CONVERSION SYSTEMS >50kW

§15. PURPOSE and INTENT

The purpose of this Article is to provide substantive standards for Large WECS in the event an application is made to the Public Service Commission under Article X of the Public Service Law or Executive Law Chapter 18, Article 6, Section 94-c or any other subsequent procedure enacted through New York State law or regulation, for the construction and operation of Large WECS in the Town of Warren.

§16. PERMITS

No WECS or Wind Energy Facility comprising a WECS shall be constructed, reconstructed, modified, or operated in the Town of Warren without a Wind Energy Permit issued by the Planning Board and a Building Permit issued by the CEO.

A. This Local Law shall apply to all areas of the Town of Warren.

B. Notwithstanding the requirements of this Section, replacement in kind or modification of a permitted WECS may occur without Planning Board approval when there will be (1) no increase in Turbine Height; (2) no change in the location of the WECS; (3) no additional lighting or change in facility color; and (4) no increase in Noise produced by the WECS.

§17. APPLICATIONS and REVIEW

A. Large WECS applications shall be deemed Type I actions requiring coordinated review under SEQRA.

B. Application Contents. Applications for a Wind Energy Permit shall include:

1. Name, address, telephone number of the Applicant. If the Applicant will be represented by an agent, the name, address and telephone number of the agent, as well as an original signature of the Applicant authorizing the agent to represent the Applicant is required.
2. Name, address, telephone number of the Property Owner. If the Property Owner is not the Applicant, the application shall include a letter or other written permission signed by the Property Owner confirming that the Property Owner is familiar with the proposed applications and authorizing the submission of the application.
3. Address of each proposed WECS Site, including Tax Map section, block and lot number.
4. Evidence that the proposed Turbine Height does not exceed the height recommended by the manufacturer or distributor of the WECS.
5. A line drawing of the electrical components of the WECS in sufficient detail to allow for a determination that the manner of installation conforms to the Electric Code.
6. Sufficient information demonstrating compliance with the Standards for WECS

7. A visual analysis of the WECS as installed, which may include a computerized photographic simulation, demonstrating the visual impacts from nearby Strategic Vantage Points. The visual analysis shall also indicate the color treatment of the system's components and any visual screening incorporated into the project that is intended to lessen the system's visual prominence.

8. A full EAF.

9. Written evidence that the electric utility service provider that serves the proposed Site has been informed of the Applicant's intent to install an interconnected customer-owned electricity generator, unless the Applicant does not plan, and so states so in the application, to connect the system to the electricity grid.

10. General Municipal Law Section 809 disclosure form.

11. Such other information as the Planning Board may reasonably require.

D. Pre-application meeting required. Applicants will request a pre-application meeting with the Planning Board for application review at a regularly scheduled meeting.

E. Escrow agreement. The Town shall require the Applicant to fund an escrow agreement to cover the amount of the Town's cost to review the applicant's application(s) that exceeds the application fees paid by the applicant.

F. Application submittal. Eight (8) copies of the application shall be submitted to the Planning Board. In addition, an electronic copy (.pdf format) of each document in the application is required by the Planning Board.

G. Application sufficiency review. Planning Board shall within 30 days of receipt, or such longer time if agreed to by the applicant, determine if all information required by NYCRR 617.3 and all financial agreements required under this Article are included in the application.

1. Unless the Planning Board waives any application requirement, no application shall be considered until deemed sufficiently complete.

2. If the application is deemed insufficient, the Planning Board or its designated reviewer shall provide the applicant with a written statement listing the missing information. No refund of application fees shall be made, but no additional fees shall be required upon submittal of the additional information, unless the number of WECS proposed is increased.

H. Public Hearing. When the application is determined to be complete The Planning Board shall hold at least one public hearing on the application.

1. The applicant shall provide notice of the public hearing by registered mail, return receipt to property owners parcels located wholly or partially within ½ mile radius of the proposed WECS Site, and shall publish a notice in the Town's official newspaper, no less than ten nor more than twenty days before any hearing, but, where any hearing is adjourned by the Planning Board to hear additional comments, no further publication or mailing shall be required. The applicant shall prepare, publish and mail the Notice of Public Hearing prepared

by the Town, and shall submit an affidavit of service. The assessment roll of the Town shall be used to determine mailing addresses.

I. Herkimer Oneida County Comprehensive Planning Program notice. A full statement of the proposed action for the project shall also be given to the HOCCPP per General Municipal law §§239-I and 239- m.

J. No Segmentation. The applicant shall disclose the full scope of planned numbers of WECS and shall not segment the application for purposes of reducing the apparent significance of proposed plans. Where the lead agency has reason to believe that the ultimate scope of the project might exceed that which is actually proposed by an applicant at one time, it shall conduct its review and base its findings on the larger potential scope.

K. Application Decision. Upon receipt of the recommendation of the HOCCPP, the holding of the public hearing, and the completion of the SEQRA process, the Town Planning Board may, within 62 days approve, approve with conditions, or deny the application. The initial Wind Energy Permit is valid for five (5) years from the date of issue.

L. Application Renewal. A Wind Energy Permit may be renewed for an additional period(s) of not more than 5 years upon satisfaction of the following conditions:

1. The Applicant submits an application for renewal of a Wind Energy Permit to the Planning Board prior to expiration of any previous permit. Such application stays the expiration of the previous permit until the Town Planning Board decision.

2. Payment of a fee

3. Decommissioning cost estimates are updated to reflect changes in the Producer Price Index and the financial security vehicle is adjusted accordingly.

4. The Applicant shall provide written notice of intent to renew the Wind Energy Permit via Registered Mail, Return Receipt to the owners of all parcels located wholly or partially within a radius of ½ mile of any WECS and shall publish notice of intent in the Town's Official Newspaper.

5. Following receipt of a sufficient application for Wind Energy Permit renewal, the Planning Board shall schedule a public hearing. The Applicant shall provide notice of the public hearing by registered mail, return receipt to property owners within ½ mile of the WECS Site, and shall publish a notice in the Town's official newspaper, no less than ten nor more than twenty days before any hearing, but, where any hearing is adjourned by the Town Planning Board to hear additional comments, no further publication or mailing shall be required. The applicant shall prepare, publish and mail the Notice of Public Hearing prepared by the Town, and shall submit an affidavit of service. The assessment roll of the Town shall be used to determine mailing addresses.

- 6 A public hearing is held.

7. The Planning Board Decision. If after careful consideration of the application and the compliance or non-compliance of the Applicant with the terms of the Wind Energy Permit, the Town Planning Board may elect to renew, not renew or renew with conditions the Wind Energy Permit for a period of not more than 5 years. Should the applicant disagree with the

decision of the Town Planning Board, the Applicant may petition the Town Planning Board within 30 days of its decision, and upon request shall be entitled to a Hearing before the Town Planning Board to be heard and present any evidence or witnesses as the Applicant may desire. Following the Hearing, the Town Planning Board may reconsider the application within 30 days and if the Permit is not renewed or renewed with conditions, shall provide a written rationale for its decision. Should the Wind Energy Permit not be renewed, the Wind Energy Facility shall be decommissioned following the requirements of this Local Law.

§18. DEVELOPMENT STANDARDS

The following substantive standards shall apply to all Large WECS in the Town of Warren in the event an application to construct and operate Large WECS in the Town of Warren is made to the New York Public Service Commission pursuant to Article 10 of the Public Service Law or Executive Law Chapter 18, Article 6, Section 94-c or any subsequent procedure enacted through New York State law or regulation.

- A. Transmission Lines. All power transmission lines from the Tower to any building or other structure shall be located underground to the maximum extent practicable.
- B. WECS height. The maximum Turbine Height of any Large WECS shall be 420 feet.
- C. Antennae Co-Location. No television, radio or other communications antennas may be affixed or otherwise made part of any WECS.
- D. Advertising. No commercial advertising signs are allowed on any part of the Wind Energy Facility, including fencing and support structures.
- E. WECS Lighting. No WECS shall have external lighting except to comply with government agency requirements. All such required lighting should restrict glare visible from ground level to the maximum extent possible and not be lit except to comply with FAA requirements.
- F. Visual Impact Mitigation. Applicants shall use measures to reduce the visual impact of WECS to the extent possible.
 - 1. WECS shall use tubular Towers.
 - 2 WECS shall be finished in a single, non-reflective matte finished color.
 - 3 WECS within a multiple WECS project shall be constructed using WECS whose appearance, with respect to one another, is similar within and throughout the project, to provide reasonable uniformity in overall size, geometry, and rotational speeds.
 - 4 No WECS shall be Sited such that it may appear to rise from or hover over a public highway when viewed by the driver of a vehicle looking in the direction of travel.
 - 5. No WECS shall be placed so as to have a negative impact on a Protected Historic Structure.
- G. Guy Wires. The use of guy wires for WECS is disfavored. A WECS using guy wires for Tower support shall incorporate appropriate measures to protect the guy wires from damage which could cause Tower failure.

H. Microwave Links. No WECS shall be installed in any location along the major axis of an existing FCC- licensed microwave communications link where its operation is likely to interfere in the link's operation. If it is determined that a WECS is interfering with a microwave path, the WECS operator shall take the necessary corrective action to eliminate this interference including relocation or removal of the facilities, or resolution of the issue with the impacted parties. Failure to remedy interference with existing microwave links is grounds for revocation of the Wind Energy Permit for the specific WECS causing the interference.

I. Waste Removal. Solid waste, hazardous waste and construction debris shall be removed from the Site and managed in a manner consistent with all appropriate rules and regulations.

J. Clearing. Wind Energy Facilities shall be designed to minimize the impacts of land clearing and the loss of open space areas. Land protected by conservation easements shall be avoided when feasible. The use of previously developed areas will be given priority wherever possible.

K. Wildlife. WECS shall be located in a manner that minimizes significant negative impacts on animal species in the vicinity, particularly bird and bat species.

L. Wetlands. Wind Energy Facilities shall be located in a manner consistent with all applicable state and federal wetlands laws and regulations.

M. Stormwater. Stormwater run-off and erosion control shall be managed in a manner consistent with all applicable state and federal laws and regulations.

N. Construction Times. Construction of the Wind Energy Facilities shall be limited to the hours of 7 a.m. to 7 p.m. except for certain activities that require cooler temperatures than possible during the day, subject to approval from the Town.

O. Water Supply. Construction of Wind Energy Facilities shall be managed in a manner that minimizes the impact upon private and public, if any, water supplies.

P. No Large WECS shall be placed so as to:

- 1 Restrict solar access on an adjoining property
- 2 Not be in harmony with the orderly development of the Town
- 3 Imperil the public health and safety
- 4 Induce vibrations or Infra-Sound
- 5 Discourage the development and use of adjacent land and buildings or impair their value.

Q. Controls-Each WECS shall be equipped with both manual and automatic controls to limit the rotational speed of the rotor blade so it does not exceed the design limits of the rotor.

R. Minimum blade height. The minimum distance between the ground and any part of the rotor or blade system shall be thirty (30) feet.

S. Signs. Appropriate warning signs shall be posted. At least one sign shall be posted at the base of the Tower warning of electrical shock or high voltage. The Town Board may require additional signs based on safety needs.

T. Climbing Pegs. No climbing pegs or Tower ladders shall be located closer than twelve (12) feet to the ground level at the base of the Tower.

U. Access Control. WECS shall be designed to prevent unauthorized external access to electrical and mechanical components and shall have access doors that are kept securely locked at all times.

§19. SOUND LEVELS

A. The equivalent level (LEQ) generated by a WECS shall not exceed the limits listed in Table 1 when measured at the nearest off-Site Residence or Non-participating land owners lot line. If the A-weighted Background Sound pressure level, without the WECS, is within 5 dB of some or all of the limits in Table 1 or exceeds some or all of the limits in Table 1, then the A-weighted criterion to be applied to the WECS application for those affected limits shall be the A-weighted background level + 5 dB. The remaining limits that are more than 5 dB above the A-weighted background shall remain as given in Table 1.

Note: For example, during daytime, if the background is less than or equal to 40 dB, then the limit is 45 dB. However, if the background is greater than 40 dB, say 44 dB, then the applicable WECS limit is the background level plus 5 dB which calculates to 49 dB for this example.

B. In all cases, the corresponding C-weighted limit shall be the operable A-weighted limit (from Table I or based on the A-weighted background, as appropriate) plus 18 dB. The application shall include certification by an independent acoustical engineer as to the predicted A- and C-weighted WECS sound levels at potentially impacted residential Sites. The engineer, or the firm with which the engineer is associated shall be a member of the National Council of Acoustical Consultants (NCAC) with a specialty in environmental Noise, and shall be a Member, Board Certified of the Institute of Noise Control Engineering of the USA. The background shall be measured and predicted in accordance with clause C below.

Table I WECS Noise limits at residential receivers

	Daytime 7 AM to 7 PM	Evening 7 PM to 10 PM	Nighttime 10 PM to 7 AM
A-weighted level (dB)	45	40	35
C-weighted level (dB)	63	58	53

C. A-weighted background sound levels shall be based on measured hourly L90 levels gathered over a sufficient time to characterize each of the following three time periods, respectively. The day shall be divided into three time periods: (1) daytime, the hours from 7 AM to 7 PM, (2) evening, the hours from 7 PM to 10 PM, and (3) nighttime, the hours from 10 PM to 7 AM. If insect Noise possibly can dominate some of the hourly L90 measurements, then Ai weighted (see Schomer, Paul D. et al., "Proposed 'Ai' - Weighting: a weighting to remove insect Noise from A-weighted field measurements," InterNoise 2010, Lisbon Portugal, 13-16 June 2010) shall be used in lieu of the Standard A-weighting, or measurements shall not be made when insect Noise possibly can dominate some of the hourly L90 measurements. The background shall be reported by time period, and computed as follows. The minimum hourly L90 shall be tabulated by time period and by day, and the arithmetic average of these measurements by time period

over all the days of measurement shall be computed. These three averages of daily minima shall be reported as that Site's daytime, evening, and night time A-weighted background levels, respectively.

Note: In relatively quiet areas insect Noise, especially during summer months, can easily dominate the A-weighted Ambient Sound level. This occurs partly because the primary frequencies or tones of many, if not most, insect Noises are in the range of frequencies where the A-weighting is a maximum, whereas, most mechanical and WECS Noises primarily occur at the lower frequencies where the A-weighting significantly attenuates the sound. Also, insect noises and bird songs do not mask WECS Noise at all because of the large differences in frequencies or tones between them.

1. Parcels 3 acres or smaller

The A-weighted background measurements shall be made along the line from the nearest proposed WECS to the Residence in question. If the parcel of land has no Residence, then the line shall terminate within 25 ft of the center of the parcel. The actual position of the microphone shall be within the property in question and should be within 25 feet to either side of the line, no closer than 50 feet from the property boundary, and no closer than 25 feet from the house or any other structures. If positioning within this "measurement box" is not possible because of unique Site conditions such as the position being underwater or the property being too small, then the unique conditions shall be fully documented and an alternate position selected and justified.

2. Parcels larger than 3 acres

The A-weighted background measurements shall be made along the line from the nearest proposed WECS to the Residence in question. If the parcel of land has no Residence then the line shall terminate within 50 feet of the center of the parcel. The actual position of the microphone shall be within the property in question, shall be within 50 to 500 feet of the Residence or within 0-500 feet of the parcel center, as applicable, should be within 50 feet to either side of the line, shall be no closer than 50 feet from the house or any other structure, and shall be no closer than 50 feet from the property boundary. If positioning within this "measurement box" is not possible because of unique Site conditions such as the position being underwater or the property being too small, then the unique conditions shall be fully documented and an alternate position selected and justified. The microphone shall be no closer than 50 feet from the house or any other structures.

3. Measurement requirements

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 meter Noise floor shall be 20 dB(A) or lower. The report shall include each hourly measured A-weighted L90 level, the tabulated daily minima by time period, and the three time period averages. The report also 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 manufacturer, model, and serial number. This instrumentation listing also shall include the A-weighted Noise floor and the one third octave band Noise floors, if utilized, for each meter used.

4. Background measurements shall be conducted throughout the area using sufficient Sites to generally characterize the background sound levels. It is anticipated that Background Sound measurements will be performed at 9 to 12 locations. The Town shall contract for the background measurements and determination of background levels for general areas of the Town such that every parcel is assigned a background level for daytime, evening, and nighttime. The contractor 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 WECS Applicant shall pay for the contract to measure and determine background levels. This payment shall include the cost of the contract, the cost of letting the contract, and the cost of supervising the contractor. The number of measurement Sites and study plan shall be developed jointly between the Town and the contractor with input from the public and from the Applicant.

D. The starting point for predicting WECS A- and C-weighted levels at potentially impacted residential parcels shall be the manufacturer-supplied octave band sound power levels as measured by the manufacturer in accordance with International Standard for Acoustic Noise Measurement Techniques for Wind Generators (IEC 61400-11). At a minimum, the octave band data shall include the 10 octave bands with nominal center frequencies ranging from 16 Hz to 8000 Hz (see ANSI S1.6-1984), and the sound power levels for these bands shall be tabulated in the report. Any data not available from the manufacturer shall be estimated from field measurements on like wind turbines already in use. Any such field measurements shall be described fully and documented in the report. In order to model the worst case condition, the Noise level corresponding to the maximum power setting shall be used assuming stable atmospheric conditions. Modeling shall not assume or otherwise take into account wind-induced sound at near-ground elevations.

For Sites at which A-weighted background measurements were performed, the A- and C-weighted WECS sound level predictions shall be made at the same point and for the nearest WECS (if more than one). For all other Sites, a prediction point shall be selected that is as close as possible to the nearest WECS while being within the "measurement box" delineated above. The octave band Sound Pressure Levels shall be predicted at the prediction point for at least each of the four nearest proposed WECS (if more than four are proposed) using sound propagation algorithms given by ISO 9613-2, with G and Gm in Table 3 of ISO 9613-2 set to 0.0. That is, the coefficients for delineating between an acoustically hard and an acoustically soft surface are each set to 0.0 for the source, middle, and receiver regions (see Kaliski, Kenneth and Duncan, Eddie, "Propagation Modeling Parameters for Wind Power Projects", Sound & Vibration, pp. 12-15, December 2008). Calculations for the 16 and 31.5 octave bands shall use the 63 Hz octave band algorithms contained in ISO 9613-2 with no factor for air absorption. No sound barrier shall be included in the calculations. For each such prediction, the A- and C-weighted level shall be calculated by applying the A- and C- weighting values from ANSI S1.4, then by adding the weighted mean square pressures, and finally by converting back to Decibels. The overall predicted A- and C- weighted levels shall be the sum of the individual levels added on the basis of the mean square pressures.

E. Any Noise level falling between two whole Decibels shall be rounded to the nearest whole Decibel.

F. The Applicant shall provide all calculations, data and assumptions in electronic format to verify compliance with this section; if computer modeling is utilized to predict project sound levels, the raw input data to the model shall be provided and sufficient additional data to allow the model runs on which the Applicant relies to be reproduced.

Enforcement shall be by measurement. The Town shall be responsible for and shall contract for any enforcement measurements. The contractor 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 duration of any WECS measurement shall be 30 minutes. During the 30-minute period, the equivalent level (LEQ) generated by the WECS shall be measured. The measurement location shall be at any residential property as given in § 19(a), and at any point on this residential property at which the background sound level may be measured per § 19(c). Measurements shall be entirely within the appropriate time period, e.g., during nighttime for nighttime enforcement, and the WECS shall operate continuously during the 30-minute measurement.

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 shall be at least 10 dB below the lowest level measured.

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.

A wind screen shall be used as recommended by the sound level meter manufacturer.

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 ± 2 miles per hour (± 0.9 meters per second).

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.

For all measurements, the surface wind speed, measured at a 1.5 meter height, shall be less than 5 meters per second.

All measurements shall be corrected for the background on the basis of mean square pressures. For one-third-octave-band measurements, each one-third-octave band shall be individually corrected for the background in that band. That is, both the sound level of the WECS (which always includes the background) and the Background Sound level alone shall be

measured in each one-third-octave band. For either A-weighted data or one-third-octave-band data, the background shall be measured during a like period when the WECS is not operating, and Table II shall be used to correct for the background, by band in the case of one-third-octave-band data. A like period means the same or like location, like surface wind speed and direction, like time of day and day-of-the-week (e.g., Monday-Thursday night, Friday or Saturday night, or Sunday night), etc.

After correction, when using data measured in one-third-octave bands, all remaining bands, excluding bands set equal to zero, shall be converted to A-weighted bands and then shall be summed on a mean square pressure basis to establish the WECS background-corrected A-weighted sound level.

Table II Correction in dB that shall be subtracted from the WECS sound level measurement (which always includes the Background Sound level) because of the Background Sound so that the result is just the sound level of the WECS alone (See Note 1 below)

Δ , difference	<3	3-4	5-6	7-10	>10
K, correction (dB)	Notes 2, 3	3	2	1	0

Notes: This table provides a simple correction to measurements of WECS sound in the presence of the background. For example, the sound of a WECS (along with the Background Sound which is always present) is measured as 40 dB(A), and the Background Sound level alone (without the WECS) is measured as 34 dB(A). Then Δ , the difference in Decibels is 6 dB (first row, third column), and the corresponding correction shall be 2 dB (second row, third column). That is, 2 dB shall be subtracted from the measured 40 dB(A) level, and it is adjusted to and reported as 38 dB(A). The same procedure is followed in each band for one-third-octave-band data.

A. When using directly measured A-weighted levels, if the difference between the WECS sound level (plus Background Sound level) and the Background Sound level alone is less than 3 dB, then it shall not constitute a violation of this chapter.

B. When using measured one-third-octave-band data, if the difference between the WECS Sound Pressure Level (plus Background Sound pressure level) and the Background Sound pressure level alone, each in the same one-third-octave band, is less than 3 dB, then the WECS level for that one-third-octave band shall be set to zero.

The report shall include a sketch of the Site showing distance to the structure(s), to the Property Line, etc., and several photographs showing the structure(s), property, and the acoustical instrumentation. All instrumentation shall be listed by manufacturer, model, and serial number. This instrumentation listing shall include the A-weighted Noise floor and the one third octave band Noise floors, if utilized, for each sound level meter used.

§20. SETBACKS

Each WECS shall be located with the following minimum setbacks, as measured from the center of the WECS:

A. Ten (10) Rotor Diameters from the property line of non-participating landowners.

- B. Four (4) Turbine Heights from the nearest participating landowner residence.
- C. 100 feet or the rotor radius, whichever is more from state-identified wetlands, except where permits for other setbacks have been received from the New York State Department of Environmental Conservation, or federal wetland permits issued by the US Army Corps of Engineers.
- D. 1.5 times the sum of the hub height plus Rotor Diameter from a public highway.

§21. ENFORCEMENT AND ABATEMENT

A. All WECS shall be maintained in good condition and in accordance with all requirements of this section.

B. Removal. A WECS which is not used for a continuous period of one (1) year shall be deemed abandoned and shall be dismantled and removed from the property at the expense of the Permit Holder. Failure to abide by and faithfully comply with this section or with any and all conditions that may be attached to the granting of any building permit shall constitute grounds for the revocation of the permit.

§22. ROAD and TRAFFIC

A. Traffic Routes. Construction and delivery vehicles for WECS and Wind Energy Facilities shall use traffic routes established as part of the application review process. Factors in establishing such corridors shall include (i) minimizing traffic impacts from construction and delivery vehicles; (ii) minimizing WECS related traffic during times of school bus activity; (iii) minimizing wear and tear on local roads (if use of such roads is permitted under this Local Law); and (iv) minimizing impacts on local business operations. Wind Energy Permit conditions may limit WECS-related traffic to specified routes, and include a plan for disseminating traffic route information to the public.

B. Road Remediation. If any load exceeds the limits of Section 385 of the New York State Vehicle and Traffic Law, the Applicant shall be responsible for remediation of damaged roads upon completion of the installation of the WECS. A public improvement bond shall be posted prior to the issuance of any building permit in an amount, determined by the Town Board, sufficient to compensate the Town for any damage to local roads, if such use is authorized under this Local Law, that is not corrected by the Applicant. An Applicant shall submit an estimate of costs for restoration to the pre-construction quality and character of local roads for the Town's approval prior to construction, and this estimate shall be the basis for the bond.

§23. GENERAL

A. Operation. A WECS shall be maintained in operational condition at all times, subject to reasonable maintenance and repair outages. Operational condition includes meeting all Noise requirements and other permit conditions.

B. Violations of Permit Conditions. A WECS is non-compliant and must be shut down immediately if it exceeds any of the limits in Section 19 of this Wind Energy Facilities Local Law.

C. Inoperative WECS. If any WECS remains non-functional or inoperative for the continuous period of one (1) year, WECS shall be decommissioned.

D. WECS Removal and Remediation. WECS removal shall include removal of all aboveground equipment, removal of foundations to a depth of three (3.0) feet below grade, restoration of soil conditions, and restoration of vegetation to be consistent and compatible with surrounding vegetation.

E. Decommissioning Fund. The Permit Holder, or successors, shall continuously maintain a financial assurance mechanism for the costs of decommissioning and removal of all WECSs on Site and the remediation of all disturbed areas of land sufficient to assure no discharge of sediments or other pollutants following decommissioning (decommissioning, removal and remediation) in a form approved by the Town, for the period of the life of the facility. The financial assurance mechanisms must ensure that funds will be available in a timely fashion when needed and shall not include the future value, if any, of scrap. If a bond is posted to meet this requirement, the bond issuing company must have a current A.M. Best rating of A- or higher. All decommissioning, removal and remediation fund requirements shall be fully funded before a building permit is issued.

ARTICLE IV – WIND MEASUREMENT TOWERS

§24. WIND SITE ASSESSMENT

The Planning Board acknowledges that prior to construction of a WECS, a wind Site assessment may be conducted to determine the wind speeds and the feasibility of using particular Sites. Installation of Wind Measurement Towers, shall be permitted upon issuance of a Wind Measurement Tower Permit

No Wind Measurement Tower shall be constructed, reconstructed, modified, or operated in the Town of Warren except in connection with an application for a WECS, and pursuant to and in compliance with a Wind Measurement Tower Permit issued pursuant to this Local Law.

§25. APPLICATIONS FOR TOWER PERMIT

A. An application for a Wind Measurement Tower Permit shall include the following:

1. Applicant Information. Name, address, telephone number of the Applicant. If the Applicant is represented by an agent, the application shall include the name, address and telephone number of the agent as well as an original signature of the Applicant authorizing the representation.

2 Property Owner Information and Authorization. Name, address, telephone number of the Property Owner. If the Property Owner is not the Applicant, the application shall include a letter or other written permission signed by the Property Owner confirming that the Property Owner is familiar with the proposed applications and authorizing the submission of the application.

3. Site Information. Address of each proposed WMT location, including tax map section, block and lot number.

4.A map showing proposed location of the WMT and any roads, parcel boundaries or structures within 10X the height of the WMT.

5.Drawings or specifications for the proposed Wind Measurement Tower.

6.Required EAF form

7.General Municipal Law Section 809 disclosure form

8.Such other information as the Planning Board may reasonably require

B. Application submittal. Eight (8) copies of the application shall be submitted to the Planning Board along with a .pdf format electronic file of each document.

C. Application sufficiency review. The Planning Board shall, within 30 days of receipt, or such longer time if agreed to by the Applicant, determine if all information are included in the application.

1.If the application is deemed insufficient, the Town Planning Board or its designated reviewer shall provide the applicant with a written statement listing the missing information. No refund of application fees shall be made, but no additional fees shall be required upon submittal of the additional information, unless the number of WMT proposed is increased.

D. Unless the Town Planning Board waives any application requirement, no application shall be considered until deemed sufficiently complete.

E. Public Hearing. When the application is determined to be sufficient, The Planning Board shall hold at least one public hearing on the application.

F. The applicant shall provide notice of the public hearing by registered mail, return receipt to property owners of parcels located wholly or partially within a radius of ½ mile of the proposed WMT Site, and shall publish a notice in the Town's official newspaper, no less than ten nor more than twenty days before any hearing, but, where any hearing is adjourned by the Town Planning Board to hear additional comments, no further publication or mailing shall be required. The applicant shall prepare, publish and mail the Notice of Public Hearing prepared by the Town, and shall submit an affidavit of service. The assessment roll of the Town shall be used to determine mailing addresses.

G. Application Decision. Upon the closing of the public hearing, the Town Planning Board may, within 62 days approve, approve with conditions, or deny the application.

§26. STANDARDS FOR TOWERS

A. Setback. The distance between a Wind Measurement Tower and the nearest Property Line shall be at least 1.5 times the height of the Wind Measurement Tower. Sites for a Wind Measurement Tower can include more than one piece of property and the requirement shall apply to the combined properties. Exceptions for neighboring property are also allowed with the consent of those Property Owners.

B. Height. The maximum height of a Wind Measurement Tower shall less than 100 feet (<100')

C. Permit Duration. Wind Energy Permits for Wind Measurement Towers may be issued for a period of up to two years. Permits shall be renewable upon application to the Planning Board using the procedures set forth in Section §24 of this Wind Energy Facilities Local Law.

D. Any Wind Measurement Tower existing on the effective date of this Local Law shall be removed no later than twenty-four (24) months after said effective date, unless a Wind Energy Permit for said Wind Energy Facility is obtained.

§27. ABATEMENT

A. Operation. All WMT shall be maintained in good condition and in accordance with all requirements of this section.

B. Removal. WMT which are is not used for a continuous period of one (1) year shall be deemed abandoned and shall be dismantled and removed from the property at the expense of the Property Owner. Failure to abide by and faithfully comply with this section or with any and all conditions that may be attached to the granting of any building permit shall constitute grounds for the revocation of the permit.

ARTICLE V - MISCELLANEOUS

§28. FEES

Permit fees, host community payments, and escrow payments are in addition to application fees.

A. Wind Energy Permits. Non-refundable application fees shall be as set by the Town Board.

B. Building Permits. The Town believes the review of building and electrical permits for Wind Energy Facilities requires specific expertise for those facilities. Accordingly, the permit fees for such facilities shall be \$250 per permit request for administrative costs, plus the amount charged to the Town by the outside consultant hired by the Town to review the plans and inspect the work. The Town and the Applicant will agree to a fee arrangement and escrow agreement to pay for the costs of the review of the plans.

C. Host Community Agreements. Nothing in this Local Law shall be read as limiting the ability of the Town to enter into host community agreements with any Applicant.

D. Escrow Agreement. The agreement required under Section §17-E of this Article must be executed and funded before any application is deemed complete.

§29. ENFORCEMENT and PENALTIES

A. The Town Board shall appoint such Town staff or outside consultants as it sees fit to enforce this Local Law.

B. Any person owning, controlling or managing any building, structure or land who shall construct or operate a Wind Energy Facility in violation of this Local Law or in noncompliance with the terms and conditions of any permit issued pursuant to this Local Law, or any order of the Code Enforcement Officer, and any person who shall assist in so doing, shall be guilty of an offense and subject to a fine of not more than \$350 or to imprisonment for a period of not more than six months. Every such person shall be deemed guilty of a separate offense for each week

such violation shall continue. The Town may institute a civil proceeding to collect civil penalties in the amount of \$350 for each violation and each week said violation continues shall be deemed a separate violation.

C. In case of any violation or threatened violation of any of the provisions of this Local Law, including the terms and conditions imposed by any permit issued pursuant to this Local Law, in addition to other remedies and penalties herein provided, the Town may institute any appropriate action or proceeding to prevent such unlawful erection, structural alteration, reconstruction, moving and/or use, and to restrain, correct or abate such violation, to prevent the illegal act.

§30. SEVERABILITY

Should any other section of this Local Law be declared by the courts to be unconstitutional or invalid, such decision shall not affect the validity of this Local Law as a whole or any part thereof other than that specific part so decided to be unconstitutional or invalid.

§31. EFFECTIVE DATE

This Local Law shall be effective upon its filing with the Secretary of State in accordance with the Municipal Home Rule Law.