

EVERGREEN TOWNSHIP
MONTCALM COUNTY, MICHIGAN
(Ordinance No. 2021 - 1

THE WIND ENERGY CONVERSION SYSTEMS ORDINANCE

At a Regular meeting of the Township Board for Evergreen Township held at the Township Hall on Nov 2, 2021 at 7:30p.m., the following Ordinance was offered for adoption by Township Board Member Baker and was seconded by Township Board Member Heintzelman

THE TOWNSHIP OF EVERGREEN (the "TOWNSHIP") ORDAINS:

Section 1. Intent and Purpose

- (a) The most common and prevalent land use in Evergreen Township is agricultural, and its preservation has been an ongoing goal within the community for many years. This Ordinance is intended to protect the health, safety and welfare of the residents of the Township and to encourage the safe, effective, efficient and orderly development and operation of wind energy resources within the Township while preserving and protecting the character and the stability of residential, agricultural, recreational, commercial and other areas and uses within the Township.

- (b) With advances in technology of "wind energy development" in general, specific locations within the Township may support the implementation of utility grid wind energy systems. To prepare for potential "wind development projects" within the Township, this Ordinance will require such developments to obtain a permit from the Township Board to ensure that wind development sites are appropriately located and utilized so as to protect the character and stability of the Township's residential, agricultural, recreational, commercial and/or industrial areas and character while simultaneously preserving and protecting the Township's important and sensitive environmental and ecological assets and areas, open space, viewscapes and aesthetics, wetlands, and other ecological and environmentally sensitive areas. Accordingly, regulations are necessary to further the above goals and, equally important, to minimize the potential adverse effects of this emerging land use on adjacent and nearby properties.

Section 2. Findings

- (a) This Ordinance has been developed with the intention of striking an appropriate

balance between the desire for renewable energy resources and the need to protect the public health, safety, and welfare of the community and the character and stability of the Township's residential, agricultural, recreational, commercial and/or industrial areas and preserving and protecting the Township's important and sensitive environmental and ecological assets and areas, open space, viewscapes and aesthetics, wetlands, and other ecological and environmentally sensitive areas.

- (b) Based on evidence presented in this State and others concerning the adverse secondary effects of wind energy systems on communities, including, but not limited to, findings from the Wind Turbine Health Impact Study: Report of Independent Expert Panel, prepared for the Massachusetts Department of Environmental Protection (2012); Strategic Health Impact Assessment on Wind Energy Development in Oregon, prepared for the State of Oregon (2012); Potential impact on the Public's Health from Sound Associated with Wind Turbine Facilities, prepared for the State of Vermont's Department of Health (2010); Analysis of the Research on the Health Effects from Wind Turbines, Including Effects From Noise, prepared for the Maine Department of Health and Human Services (2012); Jeffrey et al, "Adverse Health Effects of Industrial Wind Turbines," 59 Can Fam Physician 473-475 (2013); Salt, A., and Kaltenbach, J, Infrasound From Wind Turbines Could Affect Humans, 31(4) Bulletin Science, Technology and Society, 296-302 (2011), the following are among the potential harmful secondary effects of wind energy systems:
- (i) Falling ice or "ice throws" is physically harmful and measures should be taken to protect the public from the risk of "ice throws."
 - (ii) Nighttime wind turbine noise can cause sleep disturbance. Generally, sleep disturbance can adversely affect mood, cognitive functioning and one's overall sense of health and well-being. Chronic stress and sleep disturbance could increase the risk for cardiovascular disease, decreased immune function, endocrine disorders, and mental illness. In addition, possible health effects include increased heart rate, insomnia, fatigue, accidents, irritation, reduction in performance and depression.
 - (iii) Sound from wind energy facilities could potentially impact people's health and well-being if it increases background sound levels by more than 10 dB(A) or results in long-term outdoor community sound levels above 55 dB(A).
 - (iv) There is evidence that wind turbine sound is more noticeable, annoying and disturbing than other community industrial sounds at the same level of loudness.
 - (v) People who live near wind turbines are more likely to be impacted by wind turbines than would those far away.

- (vi) Alternating changes in light intensity caused by the moving blades of wind turbines on the ground and stationary objects, also known as shadow flicker, can cause health issues.
- (vii) The Township desires to protect ecological and environmentally sensitive areas in the Township, including, but not limited to, habitats for endangered species or heavily used migration routes for species of waterfowl and other migratory birds (some of which are protected species). Thus, the Township has determined that wind development sites can adversely impact wildlife and their habitats and makes evaluation of proposed wind development sites essential. The Township finds that any wind development sites should have the lowest potential for negative impacts on wildlife resources and avoid locations with higher concentrations of migratory birds. Further, any wind development sites that would fragment sensitive habitat areas, like rivers, streams, and wetlands, should be avoided.
- (c) The general welfare, health, and safety of the citizens of the Township will be promoted by the enactment and enforcement of this Ordinance.

Section 3. Definitions

- (a) **Participating Landowner:** A real property owner who has leased land (or the equivalent) to the WECS Applicant, received financial remuneration from the WECS Applicant and has a contract or agreement with the WECS Applicant. A Participating Landowner may also be called a WECS contract leaseholder. A Participating Landowner may or may not have turbines or infrastructure located on their property.
- (b) **Non-Participating Landowner:** A landowner who has not signed a contract or any legal document with the WECS Applicant and has not given up rights to their owned land to the WECS Applicant.
- (c) **SCADA (supervisory control and data acquisition):** A computer system that monitors and controls WECS units.
- (d) **dba:** The A-weighted sound level.
- (e) **dbc:** The C-weighted sound level.
- (f) **Pasquill Stability Class:** Reference, wikipedia.org “Outline of air pollution dispersion”.
- (g) **Adverse Sound Character:** Sound that causes building rattle, is impulsive, tonal, or has low- frequency bass rumble.
- (h) **ANSI:** the American National Standards Institute.
- (i) **Audible:** The varying degrees of sound perception as reported by affidavit,

including, but not limited to, just perceptible, audible, clearly audible, and objectionable.

- (j) **Building official:** The Montcalm County building inspector, a Township building official, or comparable public official appointed by the Township Board.
- (k) **Decibel (dB):** The practical unit of measurement for sound pressure level; the number of decibels of a measured sound is equal to 20 times the logarithm to the base 10 of the ratio of the sound pressure of the measured sound to the sound pressure of a standard sound (20 microPascals); abbreviated "dB."
- (l) **Emergency work:** Any work or action necessary to deliver essential services in an emergency situation, including, but not limited to, repairing water, gas, electricity, telephone and sewer facilities and public transportation, removing fallen trees on public rights-of-way, and abating life-threatening conditions.
- (m) **Equivalent Sound Level (or Leq):** The sound level measured in decibels with an integrating sound level meter and averaged on an energy basis over a specific duration.
- (n) **Excessive noise:** Sound that is determined by ordinance or otherwise to be too loud or unnecessary or creates a noise disturbance.
- (o) **Ambient:** Ambient is defined as the sound pressure level exceeded 90% of the time over a 96-hour measurement period with daytime/nighttime division.
- (p) **Noise:** A sound, especially one that is loud or unpleasant or that causes disturbance or irritation. Any airborne sounds of such level and duration as to be or tend to be injurious to human health or welfare (well-being) or that would unreasonably interfere with activities or the enjoyment of life or property.
- (q) **Quiet Rural or Residential property:** Any property where there is an inherent expectation of quiet, including, but not limited to, all residential, business, or agricultural properties, single family homes, and retirement homes.
- (r) **Sound level meter:** An instrument for the measurement of sound levels that meets the ANSI requirements of S1.4-1983 (or later revision) for Type 1 or 2 instruments. For frequency analysis, octave and 1/3 octave filters shall conform to ANSI S1.11-1986 (or later revision).
- (s) **GIS:** Geographic Information System and is comparable to GPS (global positioning system) coordinates.
- (t) **SCADA:** A control system architecture or format comprising computers, networked data communications and graphical user interfaces for high-level supervision of a WECS and its processes. It also covers sensors and other devices, such as programmable logic controllers, which interface with process plant or machinery.

- (u) Survival Wind Speed: The maximum wind speed, as designated by the WECS manufacturer, at which a WECS in unattended operation (not necessarily producing power) is designed to survive without damage to any structural equipment or loss of the ability to function normally.
- (v) Tip Height: The height of the turbine with a blade at the highest vertical point.
- (w) Utility Grid Wind Energy System: An electricity or power generating facility or system consisting of one or more WECS under common or related ownership or control, and that can include substations, testing towers, cable/wires, buildings and structures accessory to such a facility or system and/or similar items whose main purpose is to supply electricity or power to off-site customers, firms or companies.
- (x) Wind Energy Conversion System (WECS): Any combination of the following:
 - (i) A mill or machine operated by wind acting on oblique vanes or sails that radiate from a horizontal shaft.
 - (ii) A surface area such as a blade, rotor, or similar device, either variable or fixed, for utilizing the wind for electrical or mechanical power.
 - (iii) A shaft, gearing, belt, or coupling utilized to convert the rotation of the surface area into a form suitable for driving a generator, alternator, or other electricity-producing device.
 - (iv) The generator, alternator, or another device to convert the mechanical energy of the surface area into electrical energy.
 - (v) The tower, pylon, or other structure upon which any, all, or some combination of the above are mounted.
 - (vi) Any other components not listed above but associated with the normal construction, operation, and maintenance of a wind energy conversion system.
- (y) WECS Applicant or Applicant or Owner: The person, firm, corporation, company, limited liability corporation or other entity, as well as the applicant's successors, assigns and/or transferees, which applies for Township approval (i.e. including a permit) to construct and utilize a WECS and/or a WECS Testing Facility. An Applicant must have the legal authority to represent and bind the Participating Landowner, or lessee, who will construct, own, and operate the WECS or Testing Facility. The duties and obligations regarding an approval under this Ordinance for any WECS or Testing Facility shall be with the WECS or Testing Facility owner, and jointly and severally with the owner, operator, and lessee of the WECS or Testing Facility if different than the WECS owner.

- (z) Wind Energy Conversion System (WECS) Testing Facility or Testing Facility: A temporary structure and equipment such as a meteorological tower for the collection of wind data and other meteorological data and transmission to a collection source.
- (aa) L10: Is the noise level exceeded for 10% of the time of the measurement duration. This is often used to give an indication of the upper limit of fluctuating noise, such as that from road traffic.
- (bb) L90: Is the noise level exceeded for 90% of the time of the measurement duration and is commonly used to determine ambient or background noise level.

Section 4. Exempt Towers and Wind Energy Conversion Systems (WECS)

Communication towers, antennas, wind energy conversion systems (windmills, turbines) and related facilities located on the premises of a farm, home, or business and which do not primarily involve the sale of electricity or communication services off the premises shall be exempt from the requirements of Sections 5 and 10 hereof. In the case of a WECS, the total height with the blade fully extended (i.e. Tip Height) of such exempt tower or WECS shall not exceed fifty (50) feet, and the minimum clearance from ground level to the blade at its lowest point shall be ten (10) feet. The minimum set-back from property lines and road right-of-way lines shall be equal to 1 1/2 times the Tip Height of the unit (when the WECS blade is at its highest point).

Section 5. Commercial Wind Energy Conversion Systems (WECS)

An application for a WECS or Testing Facility permit shall be filed with the Township. Supporting data and documentation must be submitted in their entirety at the time of application. The Applicant shall provide to the Township updated documents throughout the lifespan of the WECS or Testing Facility upon request by the Township Board. The application shall also include all of the following:

- (a) Permitting Costs: An escrow account shall be set up with the Township when the Applicant applies for Township approval of a WECS or WECS Testing Facilities. The monetary escrow amount filed by the Applicant with the Township shall be in an amount in accordance with the Township's escrow policy to cover all reasonable costs and expenses associated with the review and approval process, which costs can include, but are not limited to, fees of the Township Attorney, Township Engineer, or other consultant retained by the Township as well as any reports or studies which the Township anticipates it may have done related to the approval review process for the particular application. At any point during the Township Board permit review process, the Township may require that the Applicant place additional monies into the Township escrow should the existing escrow amount filed by the Applicant prove insufficient. If the escrow account needs replenishing and the Applicant refuses to do so within fourteen (14) days after receiving notice, the review and

approval process shall cease until and unless the Applicant makes the required escrow deposit. The escrow fees and account matters are also governed by Section 7 of this Ordinance.

- (b) Environmental Assessment: The Applicant shall fund (and supply to the Township) an environmental assessment or impact study and other relevant report(s) or studies (including, but not limited to, assessing the potential impact on endangered species, eagles, birds, and/or other wildlife) as required by the Township for review. Studies shall be limited to the Township and to the area within three (3) miles around and outside of the Township boundaries.
 - (i) The Applicant shall perform pre-construction ground water testing on all wells located within the required setback distance of a proposed turbine location. The operation of the WECS shall not negatively impact any groundwater well or groundwater source in the vicinity of the WECS. Complaints regarding impact of the WESC on groundwater sources shall be promptly forwarded to the Township as part of the complaint resolution process. The Township Board will consider proof of a negative impact arising from the installation and/or operation of the WECS on a groundwater well or source in the vicinity of the WECS as a violation of the conditions of any WECS approval.
 - (ii) A background (ambient) sound study shall be performed and a report provided to the Township. Data shall be collected at midpoints along property lines of adjoining Non-Participating and Landowners Participating. Measurement procedures are to follow the most recent versions of ANSI S12.18 and ANSI S12.9, Part 3 guideline (with an observer present). Measurements shall be taken using an ANSI or IEC Type 1 Precision Integrating Sound Level Meter. The study must include a minimum of a four-day (96 hour) testing period, include one Sunday, and divide data by daytime and nighttime. The sound background study shall report for the period of the monitoring topography, temperature, weather patterns, sources of ambient sound, and prevailing wind direction.
- (c) Site Plan: The Applicant shall submit a site plan to the Township. The Applicant shall also submit to the Township a written explanation of the design characteristics and the ability of the structure(s) and attendant facilities to withstand winds, ice and other naturally occurring hazards, as well as information regarding health, welfare and safety in topics including, but not limited to, noise, vibration, shadow flicker, climbing access, and blade ice deposits. This information shall also address the potential for the WECS to structurally fail or collapse, and what results should be expected in such an event. Additional requirements for a WECS site plan are as follows:
 - (i) Building Siting: GIS locations and height of all proposed buildings,

structures, electrical lines, towers, guy wires, guy wire anchors, security fencing, and other above-ground structures associated with the WECS.

- (ii) **Nearby Building Siting:** GIS locations and height of all adjacent buildings, structures, and above ground utilities located within four (4) times the minimum set-back distance for Non-Participating Landowners where the proposed WECS and WECS Testing Facility will be located. The location of all existing and proposed overhead and underground electrical transmission or distribution lines shall also be shown, whether to be utilized or not with the WECS or Testing Facility, located on the lot or parcel involved.
- (iii) **Access Driveways:** GIS location of WECS and Testing Facility access driveways together with details regarding dimensions, composition, and maintenance of the proposed driveways. The site plan shall include traffic routes, time of the year use, staging areas, and any other physical sites related to WECS. Construction of the access driveway that serves a WECS or Testing Facility is required to protect the public health, safety, and welfare by offering an adequate means by which governmental agencies may readily access the site in the event of an emergency. All such roads shall be constructed to allow access at all times by any emergency service vehicles, such as fire, police, and repair.
- (iv) **Facility Security:** Such security measures as shall be sufficient to prevent unauthorized trespass and to protect health, welfare, and safety.
- (v) **Maintenance Program and Resolution Program:** The Applicant shall provide to the Township a written description of the problem and failure program to be used to resolve the any WECS and WECS Testing Facility issues, including procedures and schedules for removal when determined to be obsolete or abandoned.
- (vi) **Site Lighting:** A lighting plan for each WECS and Testing Facility. Such plan must describe all lighting that will be utilized and documentation that FAA requirements are met. RADAR activated lighting shall be utilized if allowed by the FAA. Such a plan shall include but is not limited to, the planned number and location of lights, light color, activation methods, effect on Township residents and whether any lights blink. Due to complexity in describing lighting effects for health, welfare, and safety, the Applicant shall, if available, provide example locations with product descriptions, where similar, or proposed lighting solutions that are currently deployed. Lighting shall be fully shielded from ground, be FAA compliant, and be of most current design, to minimize lighting blinking and brightness nuisance.
- (vii) **If there are any changes to any site plan for a WECS or Testing Facility,**

including any changes in road locations, road access, the location of accessory structure, and/or the location of any turbine, a revised site plan shall be submitted to the Township and approved by the Township Board prior to construction. Any revised site plan must provide revised calculations to address all of the items required under the original plan submission (i.e. setbacks, shadow flicker, noise, etc.).

- (viii) Supplemental: Additional detail(s) and information as requested by the Township Board.
- (d) Site Insurance: The Applicant shall provide to the Township proof of insurance for each WECS at all times for at least \$10,000,000.00 for liability, property damage, livestock damage, and future earnings loss. The Applicant shall provide yearly proof of insurance to the Township that confirms active coverage for the Applicant, Township, Participating Landowners, and Non-Participating Landowners. Aggregate policies are allowed if minimum coverage per WECS is satisfied and coverage is provided for every site where the Applicant's equipment is located. The Township shall be included on the liability insurance policy as a co-insured or additional insured.
- (e) Removal Insurance (decommissioning): To ensure proper removal of each WECS structure when it is abandoned or non-operational, the application shall include a proof of the financial security in effect before a permit is approved. The security shall be licensed in the State of Michigan and be in the form of 1) cash deposit or 2) performance (surety) bond selected by the Township Board and bonded by a top institution from the Department of the Treasury's Listing of Approved Sureties -Department Circular 570, T-list. The duration of the security shall be termed to the removal of each WECS as stated in this Ordinance. Additionally, security is based on each WECS and is to be backed by owner assets, operator assets, parent company assets, and leaseholder assets approved by the Township Board.
 - (i) The amount of each WECS security guarantee (surety) shall be the average of at least two independent (of Applicant) demolition (removal) quotes, obtained by the Township and approved by the Board, plus 20%. If the quantity of quotes obtained is two, the formula shall be $(\text{quote1} + \text{quote2})/2 * 1.20$. The security guarantee shall be no less than \$800,000.00 per WECS. Quotes shall be based on individual WECS removal and shall not group multiple WECS simultaneous removals together. Quotes shall be ordered and obtained by the Township from established demolition companies. The demolition method shall be approved by the Township Board. Quotes shall not include salvage values. Security guarantee shall be updated every five (5) years at the rate of 1.5 times CPI (consumer price index) for each year.
 - (ii) Such financial guarantee shall be deposited or filed with the Township

Clerk after a Township permit has been approved by the Township Board but before construction operations begin on the WECS project. Failure to keep such financial security in full force and effect at all times while the structure exists shall constitute a material and significant violation of a Township approval and this Ordinance, and shall subject the Applicant to all available remedies to the Township, including enforcement action, fines, revocation of the Township WECS approval and permit and WECS removal.

- (iii) The Applicant shall be responsible for the payment of all attorney fees and other costs incurred by the Township in the event that the structure is not voluntarily removed and the Township has to enforce removal.
- (iv) In the event the WECS owner, operator, parent company, performance bond defaults on any or all of the previously outlined decommissioning requirements, the Participating Landowner upon which each WECS is located shall be responsible and liable for the removal of each WECS. Failure of the Participating Landowner to comply with the removal and decommissioning guidelines shall result in the Township having the WECS removed at the expense of the Participating Landowner. If funding is not available to cover the costs of removal by the Participating Landowner, legal action to pursue the seizure of Participating Landowner property(ies) will take place to cover such costs.
- (f) **Safety Manual:** The Applicant shall provide to the Township an unredacted copy of the manufacturer's safety manual for each model of turbine without distribution restraints to be kept at the Township Hall and other locations deemed necessary by Township Board or local first responders. The Manual should include standard details for an industrial site such as materials, chemicals, fire, access, safe distances during WECS failure, processes in emergencies, etc.
- (g) **Repair Policy Documentation:** The Applicant shall provide to the Township a detailed policy and process book for the repair, replacement, and removal of malfunctioning, defective, worn, or non-compliant WECS. Sections of the process book should consider any ordinance requirement or WECS performance deficiency.
- (h) **Noise:** The Applicant shall provide to the Township an initial sound modeling report and a 6-month post-construction report for the project with a schedule and documentation which comply with all of the following:
 - (i) A chart outlining ordinance requirements and a description of compliance or non-compliance.

- (ii) A declaration whether submitted data is modeled or measured.
- (iii) A declaration of values, test methods, data sources, and similar for all modeled or measured data.
- (iv) The estimated timeline for project including ordinance requirements completed, construction, post construction, and validation testing.
- (v) The Applicant measured data shall be accompanied by SCADA data confirming full power during testing. Unless otherwise requested, minimum SCADA data format shall be grouped in 24hr periods and 1 second intervals including wind vector, wind speed, temperature, humidity, time-of-day, WECS power output, WECS amps, WECS volts, WECS nacelle vector, WECS blade RPM, WECS blade pitch.
- (vi) The permitting data may be submitted based on WECS manufacturer data. However, measured data from active and similar WECS facilities shall be simultaneously submitted to the Township.

Section 6. Approval by the Evergreen Township Board and the Required Permit

- (a) No WECS (except those expressly exempted pursuant to Section 4 hereof) or WECS Testing Facility shall be installed, maintained or utilized anywhere within Evergreen Township unless and until the Evergreen Township Board approves each such WECS or Testing Facility pursuant to the standards specified below, the other requirements of this Ordinance, and the public health, safety and welfare. The Township Clerk shall not issue a WECS or Testing Facility permit unless and until the WECS or Testing Facility has been approved by the Township Board.
- (b) The Township Board may attach reasonable conditions to the approval of any WECS or Testing Facility. Such conditions can include, but are not limited to, a time limit or expiration on any permit issued by the Township (after which the WECS or Testing Facility must be removed), the modification of the size, placement or type of WECS or Testing Facility requested or any other reasonable condition.
- (c) The Township Board shall not approve any WECS unless the Township Board finds that all of the following standards will be met:
 - i. The WECS will be designed, constructed, used, operated, and maintained so as to be harmonious and appropriate in appearance with the existing or intended character of the general vicinity and that such use will not change the essential character of the area in which it is proposed.
 - ii. The WECS will not involve uses, activities, processes, materials, and equipment or conditions of operation that will be detrimental to any persons,

property, or the general welfare by reason of excessive production of traffic, lighting, noise, smoke, fumes, shadow flickering, glare, or odors.

- iii. The WECS will not be hazardous or disturbing to existing or future uses in the same general vicinity and in the community as a whole.
 - iv. The WECS will be served adequately by essential public facilities and services, such as highways, streets, police and fire protection and stormwater drainage.
 - v. The WECS will ensure that the environment shall be preserved in its natural state, insofar as practicable, by minimizing tree and soil removal, and by topographic modifications that result in maximum harmony with adjacent areas.
- (d) Any WECS or Testing Facility approved pursuant to this section must be fully installed within one (1) year of the issuance date of the Township's WECS or Testing Facility permit (after the Township Board approval) or the Township permit and approval will expire and be null and void.
 - (e) No WECS or Testing Facility shall be altered without the Applicant applying for and obtaining from the Township Board a formal amendment to the WECS or Testing Facility Township approval and permit. The process for applying for such a modification shall be the same as for a new WECS or Testing Facility approval or permit.
 - (f) A WECS or Testing Facility permit issued pursuant to this Ordinance, and the accompanying rights granted thereby, may not be assigned, conveyed, or encumbered without prior approval in the form of a resolution adopted by the Township Board. Such approval may be subject to all reasonable conditions relative to the assignment, conveyance, or encumbrance as determined necessary by the Township Board to ensure that the new permit holder complies with the terms of all applicable local, state and federal laws. Without limiting the foregoing, the new permit holder shall be responsible to post with the Township sufficient performance guarantees as required under the terms of this Ordinance.

Section 7. Escrow Fee and Reimbursement Requirements

- (a) Given the very technical aspects of any WECS or Testing Facility application, it may necessitate the Township Board obtaining guidance, technical or legal advice and potentially reports or opinions from the Township Attorney, Township Engineer and/or other Township consultants which could involve significant costs. The taxpayers of the Township should not have to bear such costs, but such costs are rather more appropriately paid for and reimbursed to the Township by the WECS or Testing Facility Applicant.
- (b) In addition to a fixed fee as set by the Township Board for any WECS or Testing Facility application, the Township in its discretion may also require an

Applicant to submit to the Township (prior to Township review of an Application or appeal) an amount of money determined by the Township to be a reasonable estimate of the fees and costs which may be incurred by the Township in reviewing and acting upon any such WECS or Testing Facility application. The Township shall not charge such escrow fees or assess costs to the Applicant for the time expended by Township employees or for incidental costs and expenses but may charge or assess the Applicant for all other reasonable costs and expenses incurred by the Township during and in connection with the review process, whether or not the application is granted or approved, either in whole or in part. Such costs and expenses to be charged or assessed to the Applicant, for reimbursement of the Township's reasonable costs and expenses, may include, but shall not be limited to, Township attorney fees, costs and fees for the services of outside consultants, fees and expenses of other professionals who may assist the Township, costs and fees for studies and reports pertaining to the matters in question, special meeting costs and other reasonable costs and expenses. Such monies shall be retained by the Township for reimbursement of such costs and expenses. If insufficient monies are deposited by the Applicant or Participating Landowner with the Township to cover the Township's reasonable costs and expenses (as mentioned above), the Applicant or Participating Landowner shall fully reimburse the Township for all such reasonable costs and expenses at any and all times demanded by the Township, whether during the review or after the process has been completed. Any monies paid or deposited by an Applicant which are not used or spent by the Township shall be refunded.

Section 8. Required Public Hearing

Before the Township Board reaches a decision on a WECS or Testing Facility application, the Township Board shall hold a public hearing regarding the application. Notice of the time, date, place and purpose of the public hearing shall be published in the local newspaper at least ten (10) days before the public hearing and the owners of all property within 1,500 feet of the proposed WECS or Testing Facility (with the landowners as shown on the most recent Township tax roll) also being mailed by first-class mail a copy of the public hearing notice at least ten (10) days before the public hearing.

Section 9. Liability and Responsibility

The WECS Owner, the Applicant and the Participating Landowner shall all be jointly and severally liable and responsible for ensuring that the WECS or Testing Facility involved complies with all of the requirements of this Ordinance, the Township's permit for the WECS or Testing Facility and any conditions attached to the WECS or Testing Facility approval by the Township Board. Such joint and several liability and responsibility also applies to decommissioning and removal of the WECS or Testing Facility.

Section 10. Commercial Wind Energy Conversion Systems (WECS) – Standards and Requirements

Every WECS and WECS project shall meet all of the following standards and requirements:

- (1) **Set-Back:** The minimum set-back from any property line of a Non-Participating Landowner or any road right-of-way shall be no less than one and a half (1 1/2) times the Tip Height of a WECS or WECS Testing Facility unless the Applicant provides documentation in the form of a signed approval by the affected Participating and Non-Participating Landowners waiving these requirements.
- (2) **Ground Clearance:** The minimum clearance from ground level, or any structure or any natural feature, to the blade at its lowest point shall be fifty (50) feet.
- (3) **Applicant Compliance:** The WECS and related equipment shall comply with any and all State, Federal, County and Township requirements.
- (4) **Braking:** Each WECS shall be equipped with a braking, or equivalent device, capable of stopping the WECS operation in high winds with or without SCADA control. Braking system shall be effective during complete GRID power failure where WECS are unable to communicate with SCADA control or receive power. Such braking systems must be kept in good working repair and condition at all times.
- (5) **Signage:** Each WECS and Testing Facility shall have one sign per turbine, or tower, located at the roadside and one sign attached to base of each WECS, easily visible throughout four seasons. Signs shall be at least four (4) square feet in area (per side). Signs shall be the same and shall uniquely identify each WECS. Additional signage on and around the tower is recommended. The sign shall contain at least all of the following:
 - (i) Warning high voltage.
 - (ii) Participating Landowner's name, WECS owner's name, and operator's name.
 - (iii) An emergency telephone number and web address (list more than one number).
 - (iv) If the WECS uses fencing, place the signs on the perimeter fence at fence entrance door.
 - (v) Unique identification such as the address of the WECS. If there are more than one WECS on an access drive, units shall have further identification such that first responders can positively identify. An identification example is "321 Ruger Rd, Caro, MI Unit A."
- (6) **Communication Interference:** Each WECS and Testing Facilities shall be

designed, constructed and operated so as not to cause radio and television or other communication interference. In the event that verified interference is experienced and confirmed by a licensed engineer, the Applicant must produce confirmation that said interference had been resolved to the victim's satisfaction within ninety (90) days of receipt of the complaint. Any such complaints shall follow the process stated in the Complaint Resolution section below.

- (7) **Infrastructure Wiring:** All electrical connection systems and lines from the WECS to the electrical grid connection shall be located and maintained underground. Burial depth shall be at a depth that causes no known environmental, land use, or safety issues. The depth shall be a minimum of 6 feet below grade, be deeper than any drain tile and be in compliance with NEC 2014 or newer Code standards. All utility lines shall be staked in the field, so as to provide notice to property owners as to the location of utilities, including installing a marker at 4-feet below-grade to identify the utility line location.

The Township Board may waive the burial requirement and allow above-ground structures in limited circumstances, such as where geography precludes such a burial, or there is a demonstrated benefit to the township. The waiver shall not be granted solely on cost savings to the Applicant. A request for a variation shall consider aesthetics, future use of land, and effect on nearby landowners.

- (8) **Road Damage:** In addition to complying with any requirements imposed by the Montcalm County Road Commission for use of public rights of way, the Applicant shall post with the Township a financial security in the form of a surety bond from a surety company that is listed as an acceptable surety on Federal Surety Bonds in circular 570 of the U.S. Department of Treasury, or irrevocable letter of credit from, or an escrow account established in, a financial institution licensed in the State of Michigan for the cost of repairs of Montcalm County roads within the Township, in an amount of at least \$500,000.00. The type, form, wording and amount of the surety bond or other security shall be approved by the Township. The amount and standards for road repair work shall be determined by a third party road inspector appointed by mutual agreement of the Township, the Applicant and Montcalm County Road Commission. The bond or other security shall only be released (in whole or in part) when the Township Board, in consultation with the Montcalm County Road Commission and said third party inspector, determines that all required road work has been completed and approved by the road inspector in consultation with the Montcalm County Road Commission and/or MDOT. The Township may consult with the third party road inspector to verify the proposed bond or other security amount of \$500,000.00 or more. If the third party inspector determines that the amount needed for road repairs and upgrades is higher, the Applicant will post a financial security in the amount determined by the third party inspector. All road repairs must be complete within ninety (90) days of project completion, or maintenance completion, but

shall not exceed 365 days from project commencement or maintenance completion.

- (9) **Road Use Agreement:** The Applicant shall provide and execute a Road Use Agreement with the Township and shall file a copy of such Agreement with the Township Clerk before construction of any accessory road and/or road improvements. The Road Use Agreement is subject to the review and approval of the Township's attorney. The Applicant shall provide a written status report annually to the Township Board as to the ongoing scope of road work and shall also provide written notice to the Township Board when all required road work has been completed. The Township may require the renewal of the bond for road work to cover all costs of road work to be completed in the future.
- (10) **Liability Insurance:** The current WECS owner and operator shall insure for liability for the WECS without interruption until removed and comply with the section "Site Insurance" to protect the current WECS owner and operator, the Township and the property owner.
- (11) **Coating and Color:** A WECS shall be painted a non-obtrusive earth tone (light environmental color such as beige, gray or off-white) color that is non-reflective. The wind turbine base and blades shall be of a color consistent with all other turbines in the area. No striping of color or advertisement shall be visible on the blades or tower.
- (12) **Strobe Effect:** Under no circumstances, shall a WECS or Testing Facility produce shadow flicker, or strobe-effect, on properties without a signed release from affected Participating and Non-Participating Landowners. Each wind turbine shall also use a shadow flicker mitigation system that works at all times, including but not limited to, the Vestas Shadow Detection System, or other similar system.
- (13) **Ice Detection:** The Applicant shall install an ice detection system on each turbine, including, but not limited to, the system developed by Vestas, or other similar system, to monitor ice formation on each wind turbine (WECS) and to facilitate the immediate shutdown of any wind turbine if ice is detected on the turbine.
- (14) **Fire Suppression:** The Applicant shall provide and install on an WECS a fire suppression system, including, but not limited to, Fire Trace or other similar system, and to ensure that such system is operable at all times.
- (15) **Voltage:** The Applicant shall demonstrate that the WECS prohibits stray voltage, surge voltage, and power from entering the ground, and shall correct any voltage issued that is caused by the WECS.
- (16) **Protection of Adjoining Property:** In addition to the other requirements and standards contained in this section, the Township Board shall not approve any WECS or Testing Facility unless it finds that the WECS or Testing Facility will

not pose a safety hazard or unreasonable risk of harm to the occupants of any adjoining properties.

- (17) **Removal and Site Renovation:** A condition of every WECS approval shall be adequate provision for the removal of the structure in its entirety whenever it ceases to actively produce power for one hundred eighty (180) consecutive days or more. The Township Board can grant an extension of an additional one hundred eighty (180) days upon the WECS owner demonstrating that the structure will be put back into use. Removal shall include the proper receipt of a demolition permit from the Building Official and proper restoration of the site to its original condition. Removal of the structure, wiring, and its accessory use facilities shall include removing the caisson and all other components in their entirety. Restoration must be completed within 180 days of non-operation. The Township Board may grant an extension of up to 100 additional days upon the WECS owner demonstrating that an extension is necessary.
- i. The Participating Landowner may waive complete underground wiring removal if they can demonstrate to the Township that any and all remaining underground wiring will not negatively affect environment, such as, but not limited to, water quality, natural water flow, or area wildlife. The Participating Landowner shall execute a waiver and record the same in full with the Montcalm County Register of Deeds waiving these requirements.
- (18) **WECS Height:** The maximum Tip Height of any WECS or WECS Testing Facility shall not exceed 450 feet. The Township Board may modify this requirement at the request of the Applicant if reasonably justified by information provided by the Applicant to the Township. In addition, the Township Board may require that a WECS be less than 450 feet tall (i.e. at the Tip Height) if such lesser height is required because:
- i. A taller WECS would have substantial negative esthetic and horizon sight line impacts;
 - ii. The topography in the area is not consistent with a taller WECS;
 - iii. The taller height would make the WECS more distracting to motorists on nearby or area public roads; or
 - iv. The taller height of the WECS would cause the WECS to dominate the air space and visual appearance of a nearby dwelling or dwellings.
- (19) **Post-Construction Documents:** The Applicant shall provide to the Township a complete set of “as built” drawings for electrical structures, collection lines and surface markings to the Township Clerk within 6 months of completing the work on the WECS.

- (20) Operations Training: The Applicant shall provide training for all Fire Department(s) operating within Evergreen Township before beginning operations of the WECS and shall likewise provide regular training at least annually thereafter. The Applicant shall report annually to the Township Board as to the status of the training of the Fire Department, in addition to reporting annually to the Township Board of any incidents that required a response by the Fire Department (or any Fire Departments responding via mutual aid) to the WECS.
- (21) Operational, Maintenance, and Issue Resolution: Each WECS and Testing Facility must be kept and maintained in good repair and condition at all times. If a WECS is not maintained in an operational and a reasonable condition at all times or poses a potential safety hazard, the Applicant shall take expeditious action to correct the situation, including WECS removal. The Applicant shall keep a written maintenance log on each WECS at all times and must provide a complete log to the Township within thirty (30) days of a request for such by the Township.
- (22) Complaint Resolution: A complaint resolution process shall be established by the Township, including, but not limited to:
- (i) Receiving and Forwarding of Complaints: Creating a third party answering switchboard, website or the equivalent, paid for by the Applicant or WECS or Testing Facility Owner. The cost to maintain and support shall be funded in the initial amount of \$10,000.00 and be replenished at least every five (5) years by the Applicant or WECS Owner. The Township Board shall select a complaint resolution process that is independent of the facility operator or owner and that reports to the Township first and the WECS and operator second. Upon receiving a complaint, the Township shall forward said complaint to the WECS Owner.
 - (ii) Investigation of Complaints: The Township shall initiate an investigation into a complaint within sixty (60) days utilizing escrow funds to hire the appropriate expert(s).
 - (iii) Hearing of Complaints: The Township Board shall set a public hearing date within sixty (60) days of completion of the investigation of a complaint where experts, residents and/or Applicant may present information before the Township Board. Notice of the hearing shall be via certified mail.
 - (iv) Decision of Complaints: The Township Board shall issue a decision and required corrective actions within forty-five (45) days from the hearing on the complaints, which the WECS Owner shall fully comply with promptly.

- (23) The Applicant shall fund an escrow account with the Township for the investigation of complaints for, but not limited to, shadow flicker, a violation of this Ordinance, stray voltage, noise, and signal interference to the amount of \$15,000.00 to be used at the discretion of the Township Board. When the escrow account balance is below \$5,000.00, the Township shall notify the Applicant and the Applicant shall replenish the account up to the amount of \$15,000.00 within 45 days.
- (24) The Township Board has the authority to require that the WECS Applicant or Owner shut down any WECS unit that does not meet Ordinance requirements until such WECS unit meets all Ordinance requirements or is removed.
- (25) Noise:
- (i) No WECS shall generate or permit to be generated audible noise that exceeds 50 dBA during the night 9 pm to 8 am for any duration, at a property line or any point within a Non-Participating property, unless the Applicant provides documentation in the form of a signed agreement by the Participating and Non-Participating Landowner waiving these requirements.
- (ii) No WECS shall generate or permit to be generated plainly audible noise that exceeds 60 dBA during the day 8 am to 9 pm for any duration, at a property line or at any point within a Non- Participating property, unless the Applicant provides documentation in the form of a signed agreement by the Participating and Non-Participating Landowner waiving these requirements.
- (26) Evergreen Township and its representatives shall have the authority to inspect every WECS (including any of the wind turbines, the roads and/or accessory structures) or Testing Facility upon reasonable notice of at least 24 hours to the Applicant. The Applicant may require that a representative of the Applicant accompany the Township and/or its representatives on any inspection.
- (27) The Applicant shall enter into a written host agreement with Evergreen Township regarding taxation.

Section 11. Noise Measurement and Compliance

- (a) Post-construction validation and compliance testing shall be provided to the Township and shall include a variety of ground and hub height wind speeds, at low (between 6-9mph) medium (between 9-22mph) and high (greater than 22mph). SCADA data shall be provided in the format determined by Township, Township licensed engineers, or Township professional acousticians. Compliance noise measurements are the financial responsibility of the WECS owner of the facility and shall be independently performed by a qualified

professional acoustician approved by the Township Board when directed by the Township Board or their designated agent. Compliance noise measurements shall not exceed the stipulated noise limits and shall assess for and apply tonal noise penalties when warranted.

- (b) **Quality:** Measurements shall be attended. 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 noise level by excluding octave band measurements above the 1000 Hz band as in ANSIS12.100 3.11. The ANS-weighted sound level is obtained by eliminating values for octave bands above 1000 Hz, or one-third octave bands above 1250 Hz, and A- weighting and summing the remaining lower frequency bands. The wind velocity at the sound measurement microphone shall not exceed 3 m/s (7 mph, maximum) during measurements. A 7-inch or larger diameter windscreen shall be used. Instrumentation shall have an overall internal noise floor that is at least 5 dB lower than what is being measured. During testing of elevated sources including, but not limited to, wind turbines, the atmospheric profile shall be Pasquill Stability Class E or F preferred, Class D as alternate.
- (c) **Noise Level:** Noise measurements shall be conducted consistent with ANSI S12.18 Procedures for Outdoor Measurement of Sound Pressure Level and ANSI S12.9 Part3 (Quantities and Procedures for Description and Measurement of Environmental Sound – Part 3: Short-term Measurements with an Observer Present), using Type 1 meter, A- weighting, Fast Response.
- (d) **Tonal Noise:** Tonal noise shall be assessed using unweighted (linear) 1/3 octave band noise measurements with time-series, level-versus-time data acquisition. A measurement shall constitute prima facie evidence of a tonal noise condition if at any time (single sample or time interval) the noise spectrum of the noise source under investigation shows a 1/3 octave band exceeding the average of the two adjacent bands for by 15 dB in low one-third octave bands (10–125 Hz), 8 dB in middle-frequency bands (160–400 Hz), or 5 dB in high- frequency bands (500–10,000 Hz).
- (e) **Sample Metric and Rate:** Noise level measurements for essentially continuous non-time- varying noise sources shall be acquired using the Leq(Fast) metric at a sample rate of 1- per- second. For fluctuating or modulating noise sources including, but not limited to, wind turbines, a 10-per-second sample rate or faster shall be used. These sample rates shall apply to dBA, dBC and unweighted 1/3 octave band measurements.
- (f) **Reporting:** Measurements of time-varying dBA and dBC noise levels and 1/3 octave band levels shall be reported to the Township with time-series level-versus-time graphs and tables. Graphs shall show the sound levels graphed as level-vs-time over a period of time sufficient to characterize the noise signature

of the noise source being measured. For 1- per-second sampling, a 5-minute-or-longer graph shall be produced. For 10-per-second sampling, a 30- second-or-longer graph shall be produced. Reporting shall identify, and graphs shall be clearly notated, identifying what was heard and when the noise source is dominating the measurement. Reporting shall furnish all noise data and information on weather conditions and, Pasquill Class occurring during testing.

Section 12. Abandonment, Decommissioning and Removal

- (a) The WECS (as well as a Testing Facility) shall be decommissioned and be entirely removed from the property involved for whichever of the following events occurs first:
 - (i) The WECS is abandoned;
 - (ii) The WECS has not produced electricity for at least 180 consecutive days;
 - (iii) The WECS is in substantial violation of a provision of this Ordinance and the violation has not been cured within a reasonable time period; or
 - (iv) The time limit or expiration in the Township permit expires or is reached.
- (b) When the WECS (or the Testing Facility) is decommissioned or abandoned (whichever occurs first), the WECS or Testing Facility shall be entirely removed from the property involved and any and all parts thereof shall be lawfully disposed of off-site. The ground and area that formerly comprised the WECS or Testing Facility site shall be fully restored to the condition it was in before the WECS or Testing Facility was installed.
- (c) A WECS or Testing Facility shall be fully removed from the property on which it is located within 180 days of the date on which it is decommissioned or abandoned (whichever occurs first).
- (d) The Applicant, Participating Landowner and WECS Owner shall be jointly and severally responsible and liable for ensuring that the WECS or Testing Facility is fully removed from the property involved, everything is disposed of lawfully off-site and the site is returned to its prior condition when the WECS or Testing Facility is decommissioned or abandoned (whichever occurs first). Such obligation shall also constitute a lien on the property involved.
- (e) If the surety bond or other security posted with the Township for the decommissioning and removal of a WECS or Testing Facility proves insufficient, the Township may utilize any other escrow or funds on file with the Township regarding the WECS or Testing Facility involved. If both the surety bond (or other security) and such escrow or other funds are not

sufficient, the Participating Landowner, the Applicant and the WECS Owner shall be jointly and severally responsible for paying or reimbursing the Township for the balance or funds necessary to effectuate the full decommissioning, removal and site restoration regarding the WECS or Testing Facility.

Section 13. Strict Liability

The Applicant, the Participating Landowner and the WECS Owner shall be jointly and severally responsible and liable for any damages or injuries caused by the WECS or Testing Facility, including, but not limited to, damages to any land, dwellings, fixtures or other property, as well as any injury or death caused to any person, pet or livestock, due or attributable to the WECS or Testing Facility.

Section 14. Compliance and Information

- (a) All requirements of this Ordinance must be met in their entirety as well as all other applicable laws, ordinances, and rules of the federal, state, county, and Township governments. Any subsequent development or change on the property shall comply with all requirements of the ordinances and regulations in effect at that time. Non-compliance with ordinance requirements during permitting process shall result in denial or revocation of the permit.
- (b) Non-compliance with post-construction ordinance requirements shall result in fines (minimum \$250.00/day), permit denial, and WECS decommissioning.
- (c) Nuisance compliance complaints shall be resolved after the section "Complaint Resolution" is completed. The Applicant shall provide a written resolution plan to the Township within 30 days and resolve the complaint within 90 days.
- (d) For non-nuisance compliance, and upon formal notice from the Township or a resident to the WECS permit holder, the WECS permit holder shall respond within thirty (30) days with a written resolution plan, and have up to 90 days to resolve any compliance breach. Failure to resolve any compliance breach shall result in a permit loss.
- (e) Upon any change of ownership, operator or parent company, the Township shall receive from the new owner, operator or parent company notification and updated documents within 30 days including, but not limited to, legal proof of change, corporate legal contact, security bond updates, emergency contact, and the local contact.
- (f) All information, data and reports required by this Ordinance shall be promptly provided to the Township.
- (g) Every WECS shall be periodically modified and updated to reflect any technological improvements to improve the efficiency and energy producing capacity of the WECS. Should any such upgrades require a material

modification of the WECS, the Applicant shall apply to the Township and obtain Township Board approval and an amended permit for any such modification.

Section 15. Enforcement and Remedies

- (a) A violation of this Ordinance constitutes a municipal civil infraction. Any person who violates, disobeys, omits, neglects, or refuses to comply with any provision of this Ordinance, or any amendment thereof, or any person who knowingly or intentionally aids or abets another person in a violation of this Ordinance, shall also be in violation of this Ordinance and shall be responsible for a civil infraction. The civil fine for a municipal civil infraction shall be not less than one hundred dollars (\$100.00) for the first offense and not less than two hundred dollars (\$200.00) for subsequent offenses, in the discretion of the court, in addition to all other costs, damages, expenses and remedies provided by law. For purposes of this section, "subsequent offense" means a violation of the provisions of this Ordinance committed by the same person within twelve (12) months of a previous violation of the same provision of this Ordinance or similar provision of this Ordinance for which said person admitted responsibility or was adjudged to be responsible. Each day during which any violation continues shall be deemed a separate offense.
- (b) Anyone who assists another in violating this Ordinance, or who aids and abets another in violation of this Ordinance, shall also be deemed to be in violation of this Ordinance.
- (c) Any person in violation of this Ordinance shall be jointly and severally liable and responsible for complying with this Ordinance and for any and all violations of this Ordinance and any consequences thereof.
- (d) In addition to the above-mentioned remedies, the Township is also authorized (at its option and discretion) to pursue a civil lawsuit to enforce and/or ensure compliance with this Ordinance in the Montcalm County Circuit Court. The remedies and penalties provided in this Ordinance are cumulative and not exclusive.
- (e) This Ordinance may be enforced in court by the Township Supervisor, the Building Inspector, any duly appointed Township official, a Deputy County Sheriff, a State Police officer, and such other Township officials or agents as the Township Board may designate from time to time by resolution. Any such official may also issue one or more civil infraction citations or tickets pursuant to this Ordinance.
- (f) A violation of this Ordinance is also hereby declared to be a nuisance *per se* (which should be abated) and is also declared to be offensive to the public health, safety and welfare.

- (g) This Ordinance shall be administered and interpreted by the Township Supervisor.
- (h) Should the Township pursue a municipal civil infraction proceeding in the District Court and / or a conventional enforcement lawsuit or declaratory judgment action in the Circuit Court and should the Township prevail in whole or in part in any such court proceedings, then the Defendant shall pay and reimburse the Township for the Township's reasonable attorney fees and costs pursuant to any such court proceeding (including, attorney fees and costs incurred by the Township before and leading up to the District Court or Circuit Court proceedings, the formal hearing or trial court proceedings and through any appeals).

Section 16. Validity and Severability.

Should any portion of this Ordinance be found invalid for any reason by a court of competent jurisdiction, such holding shall not be construed as affecting the validity of the remaining portions of this Ordinance which shall remain in full force and effect.

Section 17. Repealer.

All other ordinances inconsistent with the provisions of this Ordinance are hereby repealed, but only to the extent of any such conflict.

Section 18. Effective Date.

This Ordinance shall become effective upon the expiration of 30 days after this Ordinance or a summary thereof appears in the newspaper as provided by law.

The vote to adopt this Ordinance was as follows:

YEAS: Baker, Heintzelman, Greenhoe,
Ross

NAYS: None

ABSENT/ABSTAIN: Fountain

THE ORDINANCE IS HEREBY DECLARED ADOPTED.

CERTIFICATION

I hereby certify that the above is a true copy of an Ordinance adopted by the Evergreen Township Board at the date, time, and place as specified above, pursuant to the required statutory procedures.

Respectfully submitted

By: Kelli Greenhoe
Kelli Greenhoe
Evergreen Township Clerk