

FULTON TOWNSHIP

WIND ORDINANCE

An Ordinance to amend the Fulton Township Zoning Ordinance, as amended to establish new standards for Wind Energy Conversion Systems; to amend existing standards for Wind Energy Conversion Systems; and to add a complaint resolution procedure in order to maintain the public health, safety and welfare of the residents and visitors to Fulton Township.

Fulton Township, Gratiot County, Michigan Ordains:

SECTION 1. AMENDMENT TO ZONING ORDINANCE ARTICLE VII, SECTION 731:

Zoning Ordinance Article VII, Section 731, is amended to read as follows:

SECTION 731 WIND ENERGY CONVERSION SYSTEMS/UTILITY SCALE WIND FARM

A. Definitions.

1. WECS Testing Facility (“Testing Facility”) shall mean the structure and equipment used to determine the potential for the placement of one or more WECS improvements and contains instrumentation, such as anemometers or other meteorological devices, designed to provide wind and other data. Such shall be permitted by administrative site plan approval.
2. Participating Landowner: A landowner who has leased land to the WECS Applicant, received financial remuneration from the WECS Applicant, recorded with the Gratiot County Register of Deeds said agreement, and has a contract 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.
3. 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.
4. SCADA (supervisory control and data acquisition): A computer system that monitors and controls WECS units.
5. dBA: The A-weighted sound level.
6. dBC: The C-weighted sound level.
7. Pasquill Stability Class: Reference, wikipedia.org “Outline of air pollution dispersion”.
8. Adverse Sound Character: Sound that causes building rattle, is impulsive or fluctuates by 3 dB or more, tonal, or has low-frequency bass rumble or roar.

9. ANSI: the American National Standards Institute.
10. Audible: The varying degrees of sound perception as reported by affidavit, including, but not limited to, just perceptible, audible, clearly audible, and objectionable.
11. 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."
12. 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.
13. 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.
14. Excessive noise: Sound that is determined by ordinance to be too loud or unnecessary or creates a noise disturbance.
15. Ambient: Ambient is defined as the sound pressure level exceeded 90% of the time over a 96-hour measurement period with daytime/nighttime division.
16. Noise: A sound, especially one that is loud or unpleasant or that causes disturbance. 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.
17. 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-zoned properties, single-family homes, and retirement homes.
18. 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).
19. GIS: Geographic Information System and is comparable to GPS (global positioning system) coordinates.
20. 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.
21. Tip Height: The height of the turbine with a blade at the highest vertical point.
22. Wind Energy Conversion System (WECS): Any combination of the following:

- (a) A mill or machine operated by wind acting on oblique vanes or sails that radiate from a horizontal shaft;
- (b) A surface area such as a blade, rotor, or similar device, either variable or fixed, for utilizing the wind for electrical or mechanical power;
- (c) 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;
- (d) The generator, alternator, or another device to convert the mechanical energy of the surface area into electrical energy;
- (e) The tower, pylon, or other structure upon which any, all, or some combination of the above are mounted.
- (f) Any other components not listed above but associated with the normal construction, operation, and maintenance of a wind energy conversion system.

23. **WECS Applicant:** 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 (permit) to construct a WECS and 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 a zoning approval for any approved 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.

24. **Wind Energy Conversion System (WECS) Testing Facility:** A structure and equipment such as a meteorological tower for the collection of wind data and other meteorological data and transmission to a collection source, shall not be deemed to be a communication tower.

25. **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.

26. **L_{Fmax}:** The maximum sound level (dBA, dBC or other filters) when measured using a sound level meter set to "Fast" response.

27. **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.

B. The following standards shall apply to all Commercial WECS and Utility-Scale Wind Energy Conversion Systems/Wind Farms unless otherwise specifically noted, provided that such standards shall not apply to on-site wind energy systems:

1. **Design Safety Certification.** The safety of the design of all Testing Facilities and commercial WECS turbines shall be certified by a Michigan licensed professional engineer. The standard for

certification shall be included with the application for special use.

2. **Controls and Brakes:** Each WECS shall be equipped with manual and automatic controls to limit rotation of blades to a speed below the designed limits of the WECS. Braking system shall be effective during complete GRID power failure where WECS are unable to communicate with SCADA control or receive power. A Michigan licensed professional engineer must certify that the rotor and over-speed control design and fabrication conform to applicable design standards. No changes or alterations from certified design shall be permitted unless accompanied by a Michigan licensed professional engineer's statement of certification.
3. **Electrical and Building Codes.** All electrical compartments, storage facilities, wire conduit, interconnections with utility companies and interconnections with private structures will conform to national and local electrical codes. All commercial WECS, including Testing Facilities shall comply with local building permit requirements.
4. **Property Line Setbacks.** All commercial WECS must be setback from nonparticipating property lines a distance equal to or greater than 2640 feet or five times the height of the WECS, whichever is greater, measured from the base of the structure to the nearest non-participating property line. All commercial WECS must be setback from a participating property line a distance equal to or greater than the required minimum setback for a principal structure in that district. This measurement shall also be from the base of the structure to the participating property line. All commercial WECS must be set back from any incorporated municipality or any property zoned R-1 Residential a distance equal to or greater than 1 mile measured from the base of the structure to the incorporated municipality jurisdiction line or R-1 Residential property line.
5. **Structure Setbacks.** All commercial WECS must be set back one hundred fifth (150) percent from a principal structure on a participating parcel that is used for residential, commercial or assembly purposes. Such measurement shall be from the base of each structure at their closest point to the principal structure.
6. **Public Right-of-Way.** All commercial WECS must be set back a distance equal to or greater than 1500 feet or three times the height of the height of the WECS from a public road right-of-way as measured from the base of the structure to the nearest right-of-way.
7. **WECS Height:** The maximum Tip Height of any WECS or WECS Testing Facility shall not exceed 500 ft. Compliance with FAA regulations, the Michigan Airport Zoning Act and the Michigan Tall Structures Act shall be verified by the applicant.
8. **Installation Certification.** A Michigan licensed professional engineer shall certify that the construction and installation of the Testing Facility or commercial WECS meets or exceeds the manufacturer's construction and installation standards. To ensure such compliance, an applicant seeking to construct a commercial WECS shall provide Fulton Township with a full and complete copy of any and all safety manuals applicable to the commercial WECS the applicant is seeking to construct.

9. **Climb Prevention.** All Testing Facilities and commercial WECS must be unclimbable by design or protected by anti-climbing devices such as fences with locking portals at least six feet high or anti-climbing devices.
10. **Communication Interference:** Each WECS and Testing Facilities shall be designed, constructed and operated so as not to cause radio, 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 residents' satisfaction within ninety (90) days of receipt of the complaint. Any such complaints shall follow the process stated in Complaint Resolution sections of this Ordinance
11. **Fire Risk.** All commercial WECS must adhere to all applicable electrical codes and standards and remove fuel sources, such as vegetation, from the immediate vicinity of electrical equipment and connections.
12. **Waste.** All solid wastes, whether generated from supplies, equipment parts, packaging, operation or maintenance of commercial WECS shall be removed from the site immediately and disposed of in an appropriate manner. All hazardous waste generated by the operation and maintenance of the improvement shall be removed from the site immediately and disposed of in a manner consistent with all local, state and federal rules and regulations.
13. **Noise:**
 - (a) No WECS shall generate or permit to be generated audible noise from commercial or industrial permitted facilities that exceeds 35 dBA or 45 dBC when measured with a sound level meter set to fast resonance (L_{FMax}) (dBC to dBA ratio of 10 dB per ANSI standard S12.9 Part 4 Annex D) during the night 10 pm to 7 am for any duration, at a property line or any point within a Non-Participating property, unless Applicant provides documentation in the form of a signed agreement by the Participating and Non-Participating Landowner waiving these requirements. Said documents in full shall be recorded with the Gratiot County Register of Deeds waiving these requirements. Documents in full shall be recorded using only the WECS Waiver Form Revision 1, or later, with the Gratiot County Register of Deeds.
 - (b) No WECS shall generate or permit to be generated plainly audible noise from commercial or industrial permitted facilities that exceeds 40 dBA or 50 dBC during the day 7 am to 10 pm for any duration, at a property line or at any point within a Non-Participating property, unless Applicant provides documentation in the form of a signed agreement by the Participating and Non-Participating Landowner waiving these requirements. Said documents in full shall be recorded with the Gratiot County Register of Deeds waiving these requirements. Documents in full shall be recorded using only the WECS Waiver Form Revision 1, or later, with the Gratiot County Register of Deeds.
 - (c) No WECS shall generate or permit to be generated from commercial or industrial permitted facilities any acoustic, vibratory, or barometric oscillations in the frequency range of 0.1 to 20 Hz that is detectable at any time and for any duration by confirmed human sensation or exceeds a sound pressure level from 0.1 to 20 Hz of 50 dB(unweighted) re 20uPA or exceeds an RMS acceleration level of 50 dB(unweighted) re 1 micro-g by instrumentation at a Non-Participating Landowner's property line or at any point within a Non-Participating

Landowner's property.

- (d) No WECS shall generate or permit to be generated from commercial or industrial permitted facilities any vibration in the low-frequency range of 0.1 to 20 Hz, including the 1, 2, 4, 8, and 16 Hertz octave bands that is perceivable by human sensation or exceeds an rms acceleration level of 50 dB(unweighted) re 1 micro-g at any time and for any duration either due to impulsive or periodic excitation of structure or any other mechanism at a Non-Participating Landowner's property line or at any point within a Non-Participating Landowner's property.
- (e) A tonal noise condition generated from commercial or industrial permitted facilities shall be assessed an upward noise penalty of 5 dBA (example 42 increased to 47 dBA) for assessment to the nighttime and daytime noise limits. A "tonal noise" does not need to be steady or a "prominent pure tone."
- (f) A noise level measurement made in accordance with methods in section "NOISE MEASUREMENT AND COMPLIANCE" that is higher than 35 dBA or 45 dBC during the nighttime hours or 40 dBA or 50 dBC during the daytime hours pursuant to sections 13(a) and (b) above, adjusted for the penalty assessed for a tonal noise condition, shall constitute prima facie evidence of non-compliance.
- (g) An acoustic, vibratory or barometric measurement documenting oscillations associated to commercial or industrial permitted facilities with levels exceeding the limits in this section shall constitute prima facie evidence of non-compliance.
- (h) All commercial and industrial activity shall comply with limits and restrictions anywhere at any time on another property unless Applicant provides documentation in the form of a signed approval by affected Participating and Non-Participating Landowners. Documents in full shall be recorded with the Gratiot County Register of Deeds waiving these requirements. Documents in full shall be recorded using only the WECS Waiver Form Revision 1 or later, with the Gratiot County Register of Deeds.
- (i) L_{FMax} shall be used for all measurements and modeling. If modeling or measurements are depicted as Leq averaged values, then 11 dB shall be added to the Leq to account for fluctuating sound.

NOISE MEASUREMENT AND COMPLIANCE

- (j) Post construction validation and compliance testing 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 in ten minute bins data shall be provided in the format determined by the 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 Planning Commission when directed by the Fulton 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.

- (k) **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 ANSI/ASA S12.100 (2014 or more recent) Methods to Define and Measure the Residual Sound in Protected Natural and Quiet Residential Areas, Section 3.11. The A-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.
 - (l) **Noise Level:** Noise measurements shall be conducted consistent = 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 or C weighting, fast response (L_{FMax}).
 - (m) **Tonal Noise:** Tonal noise shall be assessed using unweighted (linear) 1/3 octave band noise measurements with time-series, level-versus-time data acquisition. When tones are perceived either through audibility or structural resonance, the 5 dB penalty shall be applied. If there is doubt as to whether or not audible tones are present, then the procedures of S1.13 Annex A, Section A.7 or A.8, as appropriate, shall be used. The test for prominence in A.7.5 or A.8.6 shall not be applied.
 - (n) **Sample Metric and Rate:** Noise level measurements for essentially continuous non-time-varying noise sources shall be acquired using the L_{FMax} metric. These sample rates shall apply to dBA, dBC and for tonal calculations unweighted 1/3 octave band measurements.
 - (o) **Reporting:** Measurements of time-varying dBA and dBC noise levels and 1/3 octave band levels shall be reported 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 L_{FMax} measurements (approx. 8 samples per second) a 5-minute-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, SCADA data for closest three wind turbines and overall project in 10 minute bins and information on weather conditions and, Pasquill Class occurring during testing. The operator shall cooperate with providing the SCADA data, including the hub rpm, blade angle, wind direction and speed at the hub, hub angle variance from wind direction, and power output.
14. **Shadow Flicker.** Commercial WECS shall be designed, constructed and operated such that shadow flicker shall not fall upon a non-participating parcel. To ensure that no shadow flicker falls upon a non-participating parcel, equipment and software such as “Shadow Impact Module SIM by NorthTec GMBH,” Vestas’ Shadow Detection System, or its equivalent, shall be installed and maintained by the WECS owner/operator, with all necessary cabling and receptors.

- (a) In the event shadow flicker resulting from the WECS exceeds the criteria listed above, a waiver to said levels may be approved by the Fulton Township Board of Commissioners so long as:
 - (i) Written consent from the affected property owner(s) has been obtained stating that the owner(s) is aware of the WECS facility and the shadow flicker limitations imposed by this ordinance, and that consent is granted to allow shadow flicker at a mutually agreeable level; and
 - (ii) If the applicant wishes the waiver to apply to succeeding owners of the property, a permanent shadow flicker impact easement must be recorded in the Gratiot County Register of Deeds office that describes the benefited and burdened properties and that advises that all subsequent owners of the burdened property that shadow flicker in excess of that permitted by the ordinance may exist on or at the burdened property.
- 15. **Site Insurance:** The Applicant shall provide proof of insurance for each commercial WECS at all times for at least \$2,000,000 for liability, property damage, livestock damage, and future earnings loss. 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 commercial WECS is satisfied and coverage is provided for every site where Applicant's equipment is located.
- 16. **Signage:** Each commercial WECS and Testing Facility shall have one sign per turbine, or tower, located at the roadside and one sign attached to the base of each commercial WECS, easily visible throughout four seasons. Signs shall be at least two square feet in area. Signs shall be the same and shall uniquely identify each commercial WECS. Signage shall comply with this Ordinance and any other ordinance of the Township as applicable. Additional signage on and around the tower is recommended. The sign shall contain at least the following:
 - (a) Warning high voltage.
 - (b) Participating Land-owner's name, WECS owner's name, and operator's name.
 - (c) Emergency telephone numbers and web address. (List more than one number).
 - (d) If WECS uses fencing, place signs on the perimeter fence at fence entrance door.
 - (e) Unique identification such as address of WECS. If more than one WECS on access drive, units shall have further identification such that first responders can positively identify. An identification example is "3425 West Cleveland Rd, Perrinton, MI Unit A".
- 17. **Site Lighting:** A lighting plan for each commercial 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 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, Applicant shall, if available, provide example locations with product descriptions, where similar, or proposed, lighting solutions are currently deployed.

Lighting shall be fully shielded from the ground, be FAA compliant, and be of most current design, to minimize lighting blinking and brightness nuisance.

18. All facilities must be maintained in an operational state. Any WECS that is found to be abandoned, inoperable or in a state of disrepair that would be a potential threat to public health, safety and welfare shall be removed from the site at the cost of the WECS owner/operator. In the event the WECS owner/operator is insolvent, the cost of removal shall be borne by the owner of the parcel where the WECS is located. Security measures shall be sufficient to prevent unauthorized trespass and to protect health, welfare, and safety.
19. Coating and Color: A commercial WECS shall be painted a non-obtrusive (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.
20. Annual Inspection. Every commercial WECS project must be inspected annually by a Michigan licensed professional engineer selected by the Township to certify that it is in good working condition and not a hazard to the public. The owner of the WECS shall pay the cost of the annual inspection.
21. 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. Depth shall be a minimum of 6ft below grade, be deeper than drain tile and be in compliance with NEC 2014 or newer Code standards. The Planning Commission may waive the burial requirement and allow above-ground structures in limited circumstances, such as geography precludes, or a demonstrated benefit to the township. The waiver shall not be granted solely on cost savings to Applicant. Request for variation shall consider aesthetics, future use of land, and effect on nearby landowners.
22. Environmental Assessment: The Applicant shall fund 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 area within three (3) miles outside of the Township boundaries.
 - (a) A background (ambient) sound study shall be performed, and a report provided which indicates Leq 1 second, L10, and L90 sound levels using A-weighting and C-weighting. Data shall be collected at midpoints along property lines of adjoining Non-Participating and Landowners Participating. ANSI/ASA S12.100 (2014 or more recent) Methods to Define and Measure the Residual Sound in Protected Natural and Quiet Residential Areas. 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.
23. Noise: Applicant shall provide an initial sound modeling report and post-construction report for the project with a schedule and documentation which adhere to the following:

- (a) Chart outlining ordinance requirements and a description of compliance or non-compliance.
- (b) Declaration whether submitted data is modeled or measured.
- (c) Declaration of values, test methods, data sources, and similar for all modeled or measured data. All model results must include the tolerances for model input data and the model algorithms (± 3 dBA) in the final data tables or contours. They shall disclose all limitations of the modeling or measurement protocols.
- (d) Estimated timeline for project including ordinance requirements completed, construction, post construction, and validation testing.
- (e) 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 ten (10) minute bin intervals including wind vector, wind speed, time-of-day, WECS power output, WECS Hub rpm, WECS nacelle vector, WECS blade RPM, WECS blade pitch.
- (f) Permitting data may be submitted based on WECS manufacturer data. However, measured data from active and similar WECS facilities shall be simultaneously submitted.
- (g) It is acknowledged that WECS units sustain wear over time. Applicant is to submit data from existing and similar WECS installations showing aged sound measurements (to demonstrate compliance potential over the life of WECS) in accordance with this ordinance for 5, 10, and 15-year-old units.
- (h) Modeling factors shall be set for the worst-case environment, such as high humidity, frozen ground (non-porous), atmospheric variances (atmospheric profile Pasquill Stability Class E or F preferred), elevated noise source and no ground cover. Use of modeling methods (standards) shall have deficiencies (limitations) fully disclosed and shall include known error margins. Non-disclosure of modeling method deficiencies shall require resubmission of SLUP in its entirety with complete modeling deficiencies disclosed.

C. Decommissioning Plan and Escrow. The commercial WECS project must contain a Decommissioning Plan to ensure it is properly decommissioned upon the end of the project life, inoperability of individual WECS turbine or facility abandonment. Decommissioning shall include removal of all structures (including transmission equipment and fencing) and debris to a depth of six (6) feet, restoration of the soil, and restoration of vegetation within six months of the end of project life, inoperability of individual WECS turbine or facility abandonment. Extensions may be granted upon request to the Planning Commission prior to that expiration of the six (6) month requirement for decommissioning. The decommissioning plan shall state how the facility will be decommissioned, the Professional Engineer's estimated cost of decommissioning, the financial resources to be used to accomplish decommissioning, and the escrow agent with which the resources shall be deposited. The decommissioning plan shall also include an agreement between the applicant and the Township that:

1. The financial resources for decommissioning shall be in the form of a cash deposit, certified check, irrevocable bank letter of credit, or surety bond acceptable to the Township, in an amount equal to one hundred fifty percent (150%) of the estimated removal and restoration cost.

2. The Township Planning Commission may annually review the costs of decommissioning and restoration. If the Planning Commission finds that the amount on deposit is not adequate, the Township shall require the WECS owner/operator to provide additional assurances through a cash deposit, certified check, irrevocable bank letter of credit, or surety bond acceptable to the Township to increase the amount of financial resources for decommissioning.
 3. The Township shall have access to the financial resources for the express purpose of completing decommissioning if decommissioning is not completed by the applicant within six (6) months of the end of project life, inoperability of individual WECS turbine or facility abandonment.
 4. The Township is granted the right to seek injunctive relief to effect or complete decommissioning, as well as the Township's right to seek reimbursement from applicant or landowner or their successors for decommissioning costs in excess of the amount deposited in escrow and to file a lien against any real estate owned by the owner of the property on which any WECS is located, the applicant or landowner or their successors, or in which they have an interest, for the amount of the excess, and to take all steps allowed by law to enforce said lien. Financial provisions shall not be so onerous as to make wind power projects unfeasible.
- D. Complaint Resolution: Should an aggrieved Fulton Township resident allege that a WECS is not in compliance with the requirements of this Ordinance, the procedure shall be as follows:
1. Complaints must be submitted to the Township Clerk in writing from the affected resident, including their name, address, contact information and if the affected resident does not own the property allegedly being subjected to the violations of the Ordinance, the name, address and contact information for the owner of that parcel.
 2. Upon receiving a complaint from an affected resident, the Township Clerk shall present the complaint to the Township Board for review at its next regular meeting or a special meeting called for that purpose. If the Township Board deems a complaint sufficient to warrant an investigation, the Township Clerk shall advise the owner(s) and/or operator of the WECS of the complaint. Within ten (10) days of the date of notice, the owner(s) and/or operator of the WECS shall deposit funds in an amount determined by the Township Board sufficient to pay for an independent investigation of the complaint, including but not limited to, an investigation related to decibel level noise testing and/or shadow flicker analysis. All such independent investigations and analyses shall be conducted by qualified professionals acceptable to the Township to determine compliance with the requirements of this Ordinance.
 3. If the WECS is found to be in violation of this Ordinance, the owner(s) and/or operator shall reimburse the Township for the investigation or analysis and shall take immediate action to bring the WECS into compliance. In the event the owner(s) and/or operator fails or refuses to bring the WECS into compliance within ten (10) days thereafter, the Township may seek any relief at law or equity to abate the nuisance and may also issue a municipal civil infraction citation as provided by Chapter 87 of the Revised Judicature Act of 1961, being MCL 600.8701 et seq., as amended. Each violation shall be fined \$2500.00 and may result in revocation of the permit. Each day of non-compliance shall be a separate offense.
- E. Permitting Costs: An escrow account shall be set up when the Applicant applies for a Special Use Permit for a WECS and WECS Testing Facilities. The monetary amount filed

by the Applicant with the Township shall be in an amount estimated by the Township Board to cover all reasonable costs and expenses associated with the special use zoning review and approval process, which costs can include, but are not limited to, fees of the Township Attorney, Township Planner, and Township Engineer, as well as any reports or studies which the Township anticipates it may have done related to the zoning review process for the particular application. Such escrow amount shall include regularly established fees. At any point during the zoning 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 zoning review and approval process shall cease until and unless the Applicant makes the required escrow deposit. Any escrow amounts which are in excess of actual costs shall be returned to the Applicant within ninety (90) days of permitting process completion. An itemized billing of all expenses shall be provided to the Applicant. The Township shall hire qualified professionals for each and any of the technical fields associated with the Special Use Permit, such as, but not limited to, electrical, acoustics, environment, economics, wildlife, health, and land-use.

- F. **Economic Impact:** The Applicant shall fund and provide an economic impact study for the area affected by the WECS project. Such a study shall include probable financial impact regarding jobs, tax revenue, lease payments and property values at a minimum and average setbacks distances. Business and residential growth potential shall be considered.
- G. **Safety Manual:** The Applicant shall provide 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 Planning Commission 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.
- H. **Repair Policy Documentation:** Applicant shall provide 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.
- I. **Ground Clearance:** The minimum clearance from ground level to the blade at its lowest point shall be one hundred (100) feet.
- J. **Applicant Compliance:** The WECS and related equipment shall comply with any and all State, Federal, County and Township requirements.
- K. **Blade Clearance:** Blade arcs created by a WECS shall have a minimum of one hundred (100') feet of clearance over and from any structure.
- L. **Road Damage:** Any damage to a public road located within the Township resulting from the construction, maintenance, or operation of a WECS or Testing Facility shall be repaired at the Applicant's expense pursuant to Gratiot County Road Commission requirements within ninety (90) days of project completion, or maintenance completion, but shall not

exceed 365 days from project commencement or maintenance completion.

- M. Voltage: The Applicant shall be responsible for compensation to residents for property, including livestock, health or other damage by stray voltage caused by a WECS. The Applicant shall demonstrate WECS prohibits stray voltage, surge voltage, and power from entering ground.
- N. Removal and Site Renovation: A condition of every 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) days or more. The Planning Commission 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 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 365 days of non-operation.
 - 1) Participating Landowners may waive complete underground wiring removal if they can demonstrate 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. Participating Landowner shall execute a waiver and record same in full with Gratiot County Register of Deeds waiving these requirements.
- O. 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 operational and reasonable condition or poses a potential safety hazard, the Applicant shall take expeditious action to correct the situation, including WECS removal. The Applicant shall keep a maintenance log on each WECS and must provide the complete log to the Township within thirty (30) days of request.

COMPLIANCE

- P. Non-compliance with ordinance requirements during SLUP process shall result in denial or revocation of the permit.
- Q. Non-compliance with post-construction ordinance requirements shall result in fines (minimum \$2500/day per affected wind turbine(s) or 10% of the value of the average daily power production, whichever is greater), permit denial or revocation, and WECS decommissioning.
- R. Nuisance compliance complaints shall be resolved after section "Complaint Resolution" is completed. Applicant shall provide a resolution plan within 30 days and resolve complaints within 90 days. WECS may be shut down during resolution time to extend resolution time to 180 days.
- S. For non-nuisance compliance, and upon formal notice from Township or Resident to WECS permit holder, WECS permit holder shall respond within thirty (30) days with a resolution plan, and up to one hundred eighty (180) days to resolve compliance breach. Failure to

resolve any compliance breach shall result in permit loss. Unless otherwise stated, Applicant shall provide in advance and comply with ordinance requirements prior to the Township granting the permit. Conditional permits shall not be allowed.

- T. In addition to any other remedies or complaint resolution procedures set forth in this Article, violations of this Article shall also constitute a municipal civil infraction in accordance with Article 20 of this Ordinance. Each day on which any violation of this Article continues shall constitute a separate offense. The Township may bring an action for an injunction to restrain, prevent or abate any violation of this Article.
- U. Upon change of ownership, operator or parent company, the Township shall receive from the new owner, operator or parent company notification and updated documents within 90 days including, but not limited to, legal proof of change, corporate legal contact, security bond updates, emergency contact, and local contact.

SECTION 2. AMENDMENT TO ZONING ORDINANCE ARTICLE III, SECTION 306:

Zoning Ordinance Article III, Section 306.D., is amended to add a new Subsection 7 and shall read as follows:

D. On-site consumer-based, non-utility wind tower/generator/turbines ("Wind Energy System") are permitted as an accessory use and structure in the Township subject to the following provisions and issuance of all appropriate zoning, building, and trade permits. Utility tower/generator/turbines used for commercial purposes are subject to special land use requirements herein.

1. A Wind Energy System shall not exceed a height of more than one hundred and fifty (150) feet for a Wind Energy System serving a single-family or agricultural property as measured from ground level at the base of the structure to the maximum height of any portion of the structure, including the full extension of a vertical blade.
2. A Wind Energy System shall be set back no less than one and a half (1.5) times the height of the maximum height of any portion of the structure from any property line.
3. The minimum vertical blade tip clearance from grade shall be twenty (20) feet for a wind energy system employing a horizontal axis rotor. If a tower is supported by guy wires, the wires shall be clearly visible to a height of at least six feet above the guy wire anchors.
4. A Wind Energy System shall employ automatic braking, governing, or a feathering system to prevent uncontrolled rotation or over speeding. All wind towers shall have lightning protection.
5. The Wind Energy System shall be maintained in suitable working order and condition to limit noise and prevent flying debris that would affect the personal use and enjoyment of adjacent property. The system shall not cause noise in excess of forty (40) dBA at or beyond an adjoining property line.
6. A Wind Energy System shall comply with all applicable state construction codes and comply with Federal Aviation Administration requirements, the Michigan Airport Zoning Act (Public Act 23 of 1950, MCL 259.431 et seq.) and the Michigan Tall Structures Act

(Public Act 259 of 1959, MCL 259.481 et seq.) where applicable. An interconnected Wind Energy System shall comply with Michigan Public Service Commission and Federal Energy Regulatory Commission standards. Wholly on-site consumer-based systems are exempt from this requirement.

7. Agricultural Wind Energy Conversion Systems that are accessory to permitted farm and agricultural operations shall be governed by the provisions and requirements of this section so long as all electricity generated by the system is used by the owner of the parcel where the system is located.

SECTION 3. SEVERABILITY: The provisions of this Ordinance are hereby declared to be severable and if any provision, section or part of this Ordinance is declared invalid or unconstitutional by a court of competent jurisdiction, such decision shall only affect the particular provisions, section or part involved in such decision and shall not affect or invalidate the remainder of such Ordinance, which shall continue in full force and effect.

SECTION 4. EFFECTIVE DATE: This Ordinance shall become effective seven (7) days after its publication following final adoption or as required by law.

SECTION 5. REPEAL: All Ordinances or parts of Ordinances in conflict herewith are hereby repealed.

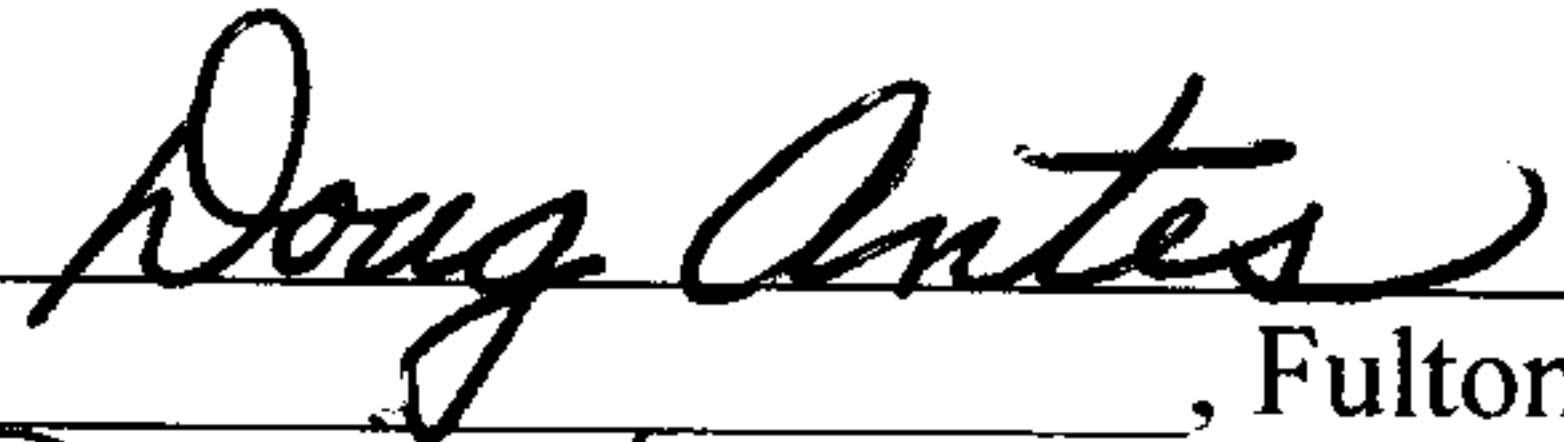
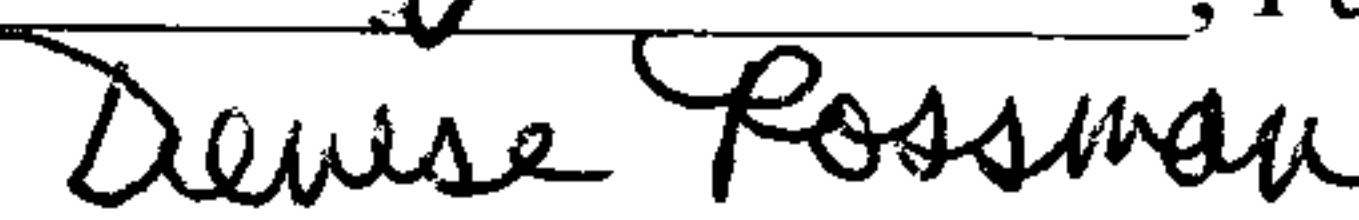
Following its introduction and publication prior to final adoption, the above Ordinance was offered for final adoption by Robert Baxter and was supported by Michael Oberlitner at a regular meeting of the Fulton Township Board, held at the Fulton Township Hall on the 24th day of April 2023, at 7:00 p.m., the vote being:

YEAS: 3

NAYS: 2

ABSENT/ABSTAIN: 0

ORDINANCE DECLARED ADOPTED.


_____, Fulton Township Supervisor
 Fulton Township Clerk
88215:00001:6782116-10