



Memorandum

TO: Planning Commission, Charter Township of Monitor

FROM: Paul Lippens, AICP; Director of Urban Design, Irvin Wyche; Assistant Planner

SUBJECT: **Wind Energy Conversion System Regulation Ordinance Update
Committee Comments**

DATE: November 29, 2018

The following standards have been updated based on draft wind regulations prepared by the Monitor Township Planning Commission Sub-committee on WECS Standards. Per the Sub-committee recommendation, these standards are based on the Almer Township and Beaver Township wind regulations and comments made to the Planning Commission by residents at the meetings of 8/14, 9/11, and 10/2.

RECOMMENDED WIND ORDINANCE STANDARDS:

Chapter III of Monitor Township Ordinance No. XX is hereby amended by adding *Section 3.48* to provide regulations for wind energy conversion systems to read as follows:

SECTION 3.48. WIND ENERGY CONVERSION SYSTEMS (WECS). A wind energy conversion system (WECS) as defined by this Ordinance is allowed as a special use when approved by the Planning Commission in accordance with the process defined herein. Large scale Wind energy conversion systems (WECS) are permitted as a special use in agricultural zoned property. In addition to the standards and requirements for issuance of a special use permit specified in this Ordinance, the Planning Commission shall not approve the issuance of a Special Land Use Permit unless the following requirements shall be met:

- (a) **Purpose and Intent.** Purpose. The most common and prevalent land use in Monitor Charter Township is residential, 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 in the Township while preserving and protecting the character and the stability of residential, agricultural, recreational, commercial, industrial and other areas within the Township.

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 Special Land Use Permit to ensure wind development sites are appropriately located 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, viewscales 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 properties.

(b) Supplementary Definitions.

1. **Adverse Sound Character:** Sound that causes building rattle, is impulsive, tonal, or has low-frequency bass rumble.
2. **Ambient:** Ambient is defined as the sound pressure level exceeded 90% of the time over a 96-hour measurement period with daytime/nighttime division.
3. **Anemometer Tower (MET):** A freestanding tower containing instrumentation such as anemometers that is designed to provide present moment wind data for use by the supervisory control and data acquisition (SCADA) system which is an accessory land use to a Utility Grid Wind Energy Conversion System.
4. **ANSI:** the American National Standards Institute.
5. **Audible:** The varying degrees of sound perception as reported by affidavit, including, but not limited to, just perceptible, audible, clearly audible, and objectionable.
6. **dB(A):** The A-weighted sound level.
7. **dB(C):** The C-weighted sound level.
8. **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."
9. **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.



10. **Excessive noise:** Sound that is determined by ordinance to be too loud or unnecessary or creates a noise disturbance.
11. **FAA:** The Federal Aviation Administration
12. **GIS:** Geographic Information System and is comparable to GPS (global positioning system) coordinates.
13. **IEC:** The International Electrotechnical Commission
14. **ISO:** The International Organization for Standardization
15. **LMax (LAMax or LCMax):** The maximum dB(A) or dB(C) sound level measured using the “fast response” setting of the sound meter (equivalent to 0.125 second exponential averaging time).
16. **Lease Unit Boundary:** The boundary around a property(ies) leased or purchased for purposes of operating a wind energy facility, including leased or purchased adjacent parcels to the parcel on which the wind energy facility tower or equipment is located. For purposes of setback, the Lease Unit Boundary shall not cross road rights-of-way.
17. **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.
18. **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.
19. **Noise:** A sound that causes disturbance that exceeds 45dba (Lmax) or 55dbc (Lmax).
20. **On-Site Wind Energy Conversion System (also called Small-Scale):** A wind energy conversion system less than 60 feet in total height with the blade fully extended (Tip Height) intended to generate electric power from wind solely for the use of the site on which the system is located. Small-scale WECS primarily intended to provide on-site power, but contribute surplus energy to the grid, may also be considered On-Site Small-scale. WECS. Small-scale wind energy systems that consistently sell power back to the public grid will require a special use permit.
21. **Participating and Non-Participating Parcels:**
 - (i) Participating Parcel shall mean a parcel of record that is to be used, occupied, maintained, let, leased or authorized to be used for any purposes of developing



or operating a WECS, including construction of improvements, providing access to improvements, providing space for collection or distribution lines, or to meet requirements and regulations set forth herein. Evidence of the participation must be filed at the Bay County Register of deeds in a form of an easement or lease. It must include an appendix with a site plan.

- (ii) Non-Participating Parcel shall mean a parcel of record that is not a Participant Parcel.
22. **Pasquill Stability Class:** Reference, wikipedia.org “Outline of air pollution dispersion”.
23. **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 where it is expected that noise not be greater than 45dba (Lmax) or 55dbc (Lmax).
24. **SCADA** (supervisory control and data acquisition): A computer system that monitors and controls WECS units.
25. **Shadow Flicker:** Alternating changes in light intensity caused by the moving blade of a Wind Energy Conversion System casting shadows on the ground and stationary objects, such as but not limited to a window of a dwelling.
26. **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).
27. **Sound Pressure:** An average rate at which sound energy is transmitted through a unit area in a specified direction. The pressure of the sound measured at a receiver.
28. **Sound Pressure Level:** The sound pressure mapped to a logarithmic scale and reported in decibels (dB).
29. **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.



30. **Tip Height:** The height of the turbine with a blade at the highest vertical point.
31. **Utility-Scale (also known as Commercial and Large-Scale) Wind Energy Conversion System:** A wind energy conversion system greater than sixty (60) feet in total height (tip height) intended to generate power from wind primarily to supplement the greater electric utility grid. Utility-Scale WECS include accessory uses such as, but not limited to, SCADA towers, anemometers, or electric substations.
32. **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.
33. **Wind Energy Conversion System (WECS):** 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. The generator, alternator, or other device to convert the mechanical energy of the surface area into electrical energy; and
 - vii. The tower, pylon, or other structure upon which any, all or some combination of the above are mounted.



viii. Any other components not listed above but associated with the normal construction, operation, and maintenance of a wind energy conversion system.

34. **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.

35. **Wind Energy Facility:** Clusters of two or more Utility Grid Wind Energy Conversion Systems, placed upon a lot or parcel with the intent to sell or provide electricity to a site or location other than the premises upon which the Wind Energy Conversion Systems are located. Said Wind Energy Conversion Systems may or may not be owned by the owner of the property upon which they are placed

(c) On-Site Wind Energy Conversion System Standards (also called Small Scale).

The following standards shall apply to On-Site WECS, including Anemometer Towers, in addition to the general Special Approval Requirements of Section 3.32 of this Ordinance:

1. **Purpose.** Designed to primarily serve the needs of a dwelling, farm, or small business.
2. **Height.** Shall have a total height of 60 feet or less; except where state and federal regulations may require a lesser height; or where, as a condition of special use approval, the Planning Commission requires a lesser height. Height is measured from the average grade at the base of the pole to the highest point of WECS when a blade is in its vertical orientation.
3. **Setbacks.** The distance between an On-Site WECS and the property lines shall be equal to 300% of the height of the tower including the top of the blade in its vertical position. The distance between an Anemometer Tower and the owner's property lines shall be equal to 150% of the height of the tower. No part of the WECS structure, including guy wire anchors, may extend closer than 20 feet to the owner's property lines, or the distance of the required setback in the respective zoning district, whichever results in the greater setback.
4. **Minimum Lot Area Size.** The minimum lot size for a property to be eligible to have an On-Site WECS shall be two (2) acres.
5. **Minimum Ground Clearance.** The minimum vertical blade tip clearance from grade and any structure, adjoining property, or tree shall be 20 feet for an on-site WECS employing a horizontal axis rotor.
6. **Noise Emission.** Noise emitting from an on-site WECS shall not exceed 45 dB(A) (L_{max}) or 55 dB(C) (L_{max}) at the property line closest to the WECS.



7. **Construction Codes, Towers, & Interconnection Standards.** On-site WECS including towers shall comply with all applicable state construction and electrical codes and local building permit requirements. On-site WECS including towers shall comply with Federal Aviation Administration requirements, the Michigan Airport Zoning Act, the Michigan Tall Structures Act, the Tri-City Area Joint Airport Authority Ordinance, and other applicable local and state regulations. An interconnected On-site WECS shall comply with Michigan Public Service Commission (MPSC) and Federal Energy Regulatory Commission (FERC) standards. Off-grid systems are exempt from MPSC and FERC requirements.
8. **Safety.** The WECS shall meet the following safety requirements:
 - (i) The WECS shall be designed to prevent unauthorized access to electrical and mechanical components and shall have access doors that are kept securely locked at all times when service personnel are not present.
 - (ii) All spent lubricants and cooling fluids shall be properly and safely removed in a timely manner from the site of the WECS.
 - (iii) A sign shall be posted near the tower or operations and maintenance office building that shall contain emergency contact information. Signage placed at the road access shall be used to warn visitors about the potential danger of falling ice.
 - (iv) All collection system wiring shall comply with all applicable safety and stray voltage standards.
 - (v) WECS towers shall not be climbable on the exterior.
 - (vi) Each WECS shall be equipped with both a manual and automatic braking device capable of stopping the WECS operation in high winds within 80% of design limits of the braking system.
 - (vii) A copy of the un-redacted Safety Manual from the turbine manufacturer shall be submitted to the Township and the turbine must comply with all requirements therein.
 - (viii) Signs displaying emergency contact information in case of a fire.
9. **Shadow Flicker.** On-site WECS shall produce no off-site shadow flicker. Measures to eliminate all effects of shadow flicker on adjacent properties, such as programming the WECS to stop rotating during times when shadow crosses occupied structures, may be required.

(d) Wind Grid Energy Conversion Systems Purpose and Application.

The following standards shall apply to On-Site WECS, including Anemometer Towers, in addition to the general special land use requirements this Ordinance:

1. **Findings.** This Ordinance has been developed with the intention of obtaining 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.

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 Siting in Minnesota: Report of Kristi Rosenquist prepared for the Legislative Energy Commission (2017); 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); Acquired Flexural Deformation of the Distal Interphalangeal Joint in Foals: Report of Teresa Margarida Costa Pereira E Curto, prepared for the Technical University of Lisbon, Faculty of Veterinary Medicine (2012); 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, reduction in performance and depression.
- iii. Sound from wind energy facilities could potentially impact people's health and wellbeing if it increases background sound levels by more than 10 dB(A) or results in long term outdoor community sound levels above 35-40 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 turbine 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, which comprises part of the Saginaw Bay Area, including, but not limited to, habitats for endangered species or heavily used migration routes for species of waterfowl, endangered bat species, and other migratory birds (some of which are protected species), including tundra swans and sand hill cranes. 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.
 - viii. The general welfare, health, and safety of the citizens of the Township will be promoted by the enactment of this ordinance.
2. **Public Utilities.** Transmission lines, sewer lines, water mains, pumping stations, substations, poles, and related equipment owned or provided by public utility companies or by the Township shall be permitted in all zoning districts. Any equipment enclosures, substations, equipment storage buildings or similar structures shall be subject to the site plan review. Any office, manufacturing, or sales buildings must be located in the Commercial or Industrial zoning district. All commercial wind energy conversion systems operated by public utility companies shall be subject to the requirements of section “Commercial Wind Energy Conversion Systems (WECS)”. Unless specifically noted, all WECS permit information and supporting documentation shall be allocated reasonable Township review time based on complexity and outside expertise review. Requirements shall be presented in written form and allow minimum thirty (30) days before Township discussion. Township may at its discretion review provided documents sooner than thirty (30) days. Providing documents without time for Planning Commission to review shall result in permit denial and require WECS application to reapply. Each ordinance section requires approval by the Planning Commission unless otherwise noted. Township shall review all documentation to assure that residents’ health, welfare, and safety are not negatively impinged.
3. **Review Standards for Commercial Wind Energy Conversion Systems (WECS).** Wind energy conversion systems and WECS testing facilities, other than those exempted under “Exempt Towers and Wind Energy Conversion Systems (WECS)”, shall only meet the following standards. An application for a special land use permit shall be filed with the Township for Special Land Use approvals. Supporting data and documentation must be submitted in their entirety at time of application. Applicant shall



provide to the Township updated documents throughout the lifespan of the WECS upon request by the Township Board or Planning Commission. Applicant shall also include the following:

1. **Height and Scenic Vista.** The maximum height of any Utility-Scale WECS is 500 feet. The height of a WECS is measured from the lowest natural grade at the base of the pole to the highest point of the WECS when a blade is in its vertical orientation.
2. **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.
3. **Abandonment.** Any WECS that is not used to produce energy for a period of six (6) successive months or longer shall be deemed to be abandoned and shall be promptly dismantled and removed from the property in accordance with the decommissioning regulations of this ordinance, unless the applicant receives a written extension of that period from the Township Board in a case involving an extended repair schedule for good cause.
4. **Reasonable Conditions.** In addition to the requirements of this section, the Planning Commission may impose additional reasonable conditions on the approval of WECS as a special use.



5. **Vibrations.** Wind turbines shall not create vibrations that are detectable by humans on non-participating properties.

6. **Decommissioning:** To ensure proper removal of each WECS structure when it is abandoned or non-operational, application for a special land use permit shall include a proof of the financial security in effect before permit is approved. The security shall be in the form of a cash deposit. 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 Planning Commission.
 - i. The amount of each WECS security guarantee, shall be the average of at least two independent (applicant) demolition (removal) quotes obtained by the Planning Commission and approved by the Township Board. If the quantity of quotes obtained is two (2), the formula should be (quote 1 + quote 2) divided by two (2). The security guarantee shall be a cash deposit of no less than 150% of the cost for the first turbine, 120% of the cost for the second turbine and 100% of the cost for each additional WECS thereafter. The security guarantee shall be no less than one-million-dollar cash deposit with (150% for the first turbine, 120% for the second turbine, 100% for each additional turbine) 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 demolitions companies. Quotes shall not include salvage values. The cash deposit shall be updated every two (2) years at the rate of 1.5 times CPI (consumer price index) for each year.
 - ii. Such financial guarantee shall be deposited with the Township Treasurer after a special use has been approved 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 special use approval and this ordinance, and shall subject the Applicant to all available remedies to the Township, including enforcement action, fines, revocation of the special use approval 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. The Applicant/Owner and Operator shall execute any and all document (as provided or approved by the Township), sufficient to provide the



Township with a perfected security interest in monies deposited with the Township for the purpose of decommissioning any wind energy system.

- 7. Transfer or sale.** In the event of a transfer or sale of the WECS, the Township shall be notified and the special land use permit, may be amended administratively by the Township board.

 - i. Change in ownership alone shall be considered a minor amendment to the special land use and may be approved administratively without a public hearing.
 - ii. Any proposed changes to the operating procedure or approved site plan shall be amended and resubmitted for Township review according to the procedures for all WECS as outlined herein, including a public hearing.
 - iii. Upon transfer or sale, the cash bond shall be maintained at all times, the estimated costs of decommissioning shall be resubmitted, and the security bond adjusted to account for the new estimate.
- 8. Safety Manual:** The Applicant must 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.
- 9. Substations and accessory buildings.** Structures related to a WECS shall be subject to the dimensional and locational standards of structures in the zoning district. Where structures are visible from adjacent properties, vegetative or manmade screening may be required to minimize visual impact off-site. The planning commission shall require vegetative or manmade screening to minimize visual off-site impact.
- 10. Inspection.** The Township shall have the right upon issuing any WECS or wind energy facility special use permit to inspect the premises on which each WECS is located at any reasonable time. The Township may hire a consultant to assist with any such inspections at a reasonable cost to be charged to the operator of the WECS.
- 11. Repair Policy Documentation:** Applicant must provide a detailed policy and process book for the repair, replacement, and removal of malfunctioning, defective, worn, or noncompliant WECS. Sections of the process book should consider any ordinance requirement or WECS performance deficiency.



- 12. Noise:** Applicant shall provide an initial sound modeling report and, within six (6) months of commencing operation of the WECS, a post-construction report for the project with a schedule and documentation which adhere to the following:
- i. Chart outlining ordinance requirements and a description of compliance or noncompliance.
 - ii. Declaration whether submitted data is modeled or measured.
 - iii. Declaration of values, test methods, data sources, and similar for all modeled or measured data.
 - iv. Estimated timeline for project including ordinance requirements completed, construction, post construction, and validation testing.
 - v. 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. Permitting data may be submitted based on WECS manufacturer data. However, measured data from active and similar WECS facilities shall be simultaneously submitted.
 - vii. 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.
 - viii. 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.
- 13. Setback:** The minimum setback from any property line of a Non-Participating Landowner or any road right-of-way shall be no less than 2000 feet. The minimum setback from any property line of a Participating Landowner shall be no less than 1640 feet.



14. **Lot Size.** The size of a single property, or a leased unit to be used for a utility-scale WECS shall be sufficient to comply with all setback requirements in this section.
15. **Separation:** Tower to Tower Separation shall not be less than 2000 feet to allow for proper safety setback. Measurement shall be from center of hub to center of hub.
16. **Ground Clearance:** The minimum clearance from ground level to the blade at its lowest point shall be one hundred (100) feet.
17. **Applicant Compliance:** The WECS and related equipment shall comply with any and all State, Federal, County and Township requirements.
18. **Blade Clearance:** Blade arcs created by a WECS shall have a minimum of one hundred (100') feet of clearance over and from any structure.
19. **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.
20. **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 two square feet in area and be placed at the road right of way. 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 the following:
 - i. Warning high voltage.
 - ii. Participating Land owner's name, WECS owner's name, and operator's name.
 - iii. Emergency telephone numbers and web address. (list more than one number).
 - iv. If WECS uses fencing, place signs on the perimeter fence at fence entrance door.
 - v. 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 "321 Ruger Rd, Caro, MI Unit A"



- 21. 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 residents' satisfaction within ninety (90) days of receipt of the complaint. Any such complaints shall follow the process stated in Complaint Resolution sections.
- 22. 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. 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.
- 23. Road Damage:** The Contractor shall inform the Bay County Road Commission (BCRC) of all the roads they propose to use as haul routes to each construction site. This shall be done prior to beginning any construction at any site. The identified haul routes shall be videotaped by either the BCRC or Contractor prior to the beginning of construction and after construction has been completed. Upon review of the before and after videos and physical review of each roadway, the BCRC shall determine what damage, if any, was caused by the Contractor's vehicles. If it is determined damage to the road was caused by the Contractor's vehicles or activities, the Contractor shall work with the BCRC to determine the extent of the roadway repair needed. This may include, but is not limited to, crush and shaping the roadway, placing additional aggregate, placing a new chip seal surface (two courses minimum), placing a new asphalt surface or a combination thereof. In all cases, the roadway shall be constructed in accordance with the BCRC's current specifications and requirements associated with the type of roadway to be installed. All costs for said work shall be the responsibility of the Contractor.
- 24. Liability Insurance:** The current WECS owner and operator shall insure for liability for the WECS in an amount of \$2,000,000, without interruption until



removed and comply with section "Site Insurance" to protect the current WECS owner and operator.

25. **Coating and Color:** A 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.
26. **Shadow Flicker:** No amount of Shadow Flicker may fall on or in a Non-Participating Parcel. Site plan and other documents and drawings shall show mitigation measures to eliminate potential impacts from shadow flicker, as identified in the Shadow Flicker Impact Analysis. Measures to eliminate all effects of shadow flicker on all Non-Participating parcels beginning at the property lines, such as programming the WECS to stop rotating during times when shadow crosses occupied structures, shall be required.
 - i. Participant parcels shall not exceed 30 hours of shadow flicker per calendar year.
27. **Strobe Effect:** No amount of Strobe Effect may fall on or in any parcel. Under no circumstances, shall a WECS or Testing Facility produce strobe-effect on properties.
28. **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.
29. **Protection of Adjoining Property:** In addition to the other requirements and standards contained in this section, the Planning Commission 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 or area wildlife.
30. **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, including but not limited to all participating parcels, 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. The WECS owner must provide data indicating the repaired WECS is in good operational condition and functioning at an efficiency similar to surrounding WECS.

31. **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 complete log to the Township within thirty (30) days of request.

32. **Complaint Resolution:** It is the intent of this ordinance to provide a mechanism to address and resolve complaints prior to the expenditure of significant funds by the Township and/or operator for investigation and resolution. Therefore, the Township shall perform an initial vetting of complaints prior to requesting funds from the operator for complaint resolution efforts. Complaints of noncompliance with the requirements of this ordinance shall be resolved in the following manner:
 - i. Complaints shall be submitted to the Township Supervisor in writing from the affected property owner, or written designee, including name, address, contact information, and specific complaint. The written complaint shall include the specific section of the ordinance which is believed to be violated. The Supervisor shall cause the complaint to be added to the agenda of the next Township Board meeting in accordance with the procedure for setting the agenda.
 - ii. The Supervisor shall submit to the operator of record notice of all written complaints to the Township within thirty (30) days of receipt of any complaint. Complaints received by the Township and the date of any Township Board meeting where complaints may be considered shall be communicated to the operator at least 10 days prior. The notice shall state that the Township Board may determine that the WECS is in violation of its permit and is therefore a nuisance and may be ordered out of service until the owner operator can demonstrate compliance with the requirements of this ordinance.



- iii. Upon review, if the Township Board, by an affirmative vote of the majority of the members present, deems a complaint sufficient to warrant an investigation, the Township Board shall notice the owner(s) and/or operator of the WECS that an investigation has been requested by the Board.
 - iv. Owner operator shall be required as a condition of the operation to fund an escrow account for investigation of complaints for, but not limited to, shadow flicker, stray voltage, noise, and signal interference in the amount of \$15,000.00 to be use 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 in the amount of \$15,000.00 within 45 days.
 - v. If the WECS is found in violation of this ordinance, the owner(s) and/or operator shall take immediate action to bring the WECS into compliance. If the operator fails to bring the operation into compliance within thirty (30) days, the Township may seek any relief at law or equity to abate the nuisance and may also issue a municipal civil infraction citation. Each violation for which the owner(s) and/or operators are deemed responsible shall result in a \$500.00 fine. Each day of non-compliance shall be a separate offense.
 - vi. Any WECS found by the Township Board to be in violation of this ordinance set forth herein shall be considered a nuisance and the WECS operations shall cease until such time as the WECS owner/operator Cn demonstrate compliance with the requirements of this ordinance.
- 33. Regulation of WECS Commercial and Industrial Noise:** To preserve quality of life, peace, and tranquility, and protect the natural quiet of the environment. This ordinance establishes the acoustic baseline, background sound levels for project design purposes, and limits the maximum noise level emissions for commercial and industrial developments. Residents shall be protected from exposure to noise emitted from commercial and industrial development by regulating said noise.
- 34. Non-Compliance with Standards:** The Township Board reserves the right to require WECS Applicant to shut down any WECS unit that does not meet ordinance requirements until such WECS unit meets ordinance requirements or is removed.



35. Noise:

- i. No WECS shall generate or permit to be generated audible noise from commercial or industrial permitted facilities that exceeds 45 dBA (L_{max}) or 55 dBC (L_{max}) (dBC to dBA ratio of 10 dB per ANSI standard S12.9 Part 4 Annex D) for any duration, at a property line or any point within any property.
- ii. 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 1 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 landowner's property line or at any point within a landowner's property.
- iii. 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 landowner's property line or at any point within landowner's property.
- iv. A noise level measurement made in accordance with methods in section "Noise Measurement and Compliance" that is higher than 45dBA (L_{max}) or 55 dBC (L_{max}) adjusted for the penalty assessed for a tonal noise condition, shall constitute prima facie evidence of a nuisance.
- v. An acoustic, vibratory or barometric measurement documenting oscillations associated to commercial or industrial permitted facilities with levels exceeding the noise limits shall constitute prima facie evidence of a nuisance.
- vi. All commercial and industrial activity shall comply with limits and restrictions anywhere at any time on another property.
- vii. Leq 1-sec shall be used for all measurements and modeling.

36. Noise Measurement and Compliance

- i. 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



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 Planning Commission when directed by the Monitor Charter 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.

- ii. **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 S12.100 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.
- iii. **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.
- iv. **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).

- v. **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.
- vi. **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 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.

(e) Wind Energy Conversion System (WECS) Site Plan Review Procedure.

1. **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. Such assessments or studies shall be completed by an independent third-party professional that is acceptable to the Township. Studies shall be limited to the area within three (3) miles outside of the Township boundaries. This includes gas lines, oil wells, coal mines, water lines Dow Chemical lines, Enbridge lines, and any other similar area determined by the Planning Commission to require and Environmental Assessment.
 - i. A background (ambient) sound study shall be performed by an independent third-party acoustician acceptable to the Township and a report provided which indicates Leq 1 second, (same as LMax) 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. 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.

2. **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 set-backs distances. Business and residential growth potential shall be considered.
3. **Site Plan:** The Applicant shall submit a site plan in full compliance with this Ordinance. The Applicant shall also submit 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 areas including, but not limited to, noise, vibration, shadow flicker, 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.

The application for a WECS shall be reviewed in accordance with all applicable requirements in site plan review and special use requirements of this Ordinance. In addition to these requirements, site plans and supporting documents for WECS shall include the following additional information, as appropriate:

1. Documentation that noise emissions, construction code, tower, and safety requirements have been reviewed by the appropriate third-party professional and the submitted site plan is prepared to show compliance with these issues.
2. Proof of the applicant's public liability insurance for the project.
3. A copy of that portion of all the applicant's Participating Property lease(s) with the land owner(s) granting authority to install the WECS and/or Anemometer Tower; legal description of the property(ies), Lease Unit(s); and the site plan shows the boundaries of the leases as well as the boundaries of the Lease Unit Boundary.
4. An un-redacted safety manual from the turbine manufacturer and a statement from the applicant verifying that the WECS is or will be operated in compliance with all requirements therein.
5. The phases, or parts of construction, with a construction schedule.



6. The project area boundaries.
7. The location, height, and dimensions of all existing and proposed structures and fencing.
8. The location, grades, and dimensions of all temporary and permanent on-site and access roads from the nearest county or state maintained road.
9. A description of the routes to be used by construction and delivery vehicles and of any road improvements that shall be necessary in the Township to accommodate construction vehicles, equipment or other deliveries, and an agreement or bond which guarantees the repair of damage to public roads and other areas caused by construction of the WECS.
10. All new infrastructure above and below ground related to the project, including transmission line locations.
11. A copy of Manufacturers' Material Safety Data Sheet(s) which shall include the type and quantity of all materials used in the operation of all equipment including, but not limited to, all lubricants and coolants.
12. Description of operations, including anticipated regular and unscheduled maintenance.
13. Additional Requirements for commercial Wind Energy Conversion Systems:
 - (i) A wind assessment study conducted within a potential project area shall be completed within 18 months of the date of application for a WECS. The study must show analysis for a period of time no less than one (1) year. The height of an anemometer (or similar) device measuring wind availability shall be placed within the potential vertical swept blade area of the proposed WECS. Temporary (one-year) installation of said device may be applied for through the Township site plan approval process and may be approved for a height acceptable to determine feasibility of a WECS height allowed by this ordinance. The anemometer shall be decommissioned in accordance with this ordinance, including the provision of a security bond covering decommissioning costs.
 - (ii) A copy of a noise modeling and analysis report completed by a third-party acoustician acceptable to the Township and the site plan shall show locations of equipment identified as a source of noise which is placed, based on the analysis, so that the Utility Grid WECS shall not exceed the



maximum permitted sound pressure levels. The noise modeling and analysis shall conform to the most current protocol for The International Electrotechnical Commission (IEC) 61400, Parts 11 and 14, The International Organization for Standardization (ISO) 9613-2, and ANSI S12.62, including all tolerances and uncertainties. After installation of the WECS, sound pressure level measurements shall be performed by a third party, acoustician acceptable to the Township according to the procedures in the most current version of The American National Standards Institute (ANSI) S12.9, Part 3 and ANSI S12.100 for measurements (with an observer). All sound pressure levels shall be measured with a sound meter that meets or exceeds the most current version of ANSI S1.4 specifications for a Type II sound meter. Documentation of the actual sound pressure level measurements shall be provided to Monitor Township within 60 days of the commercial operation of the project and as requested to respond to a noise complaint from a resident.

- (iii) A visual impact simulation showing the completed site as proposed on the submitted site plan. The visual impact simulation shall be from four viewable angles.
- (iv) A copy of an Environmental Analysis by a third party qualified professional acceptable to the Township to identify and assess any potential impacts on the natural environment including, but not limited to wetlands and other fragile ecosystems, historical and cultural sites, and antiquities. The applicant shall take appropriate measures to minimize, eliminate or mitigate adverse impacts identified in the analysis, and shall show those measures on the site plan. The applicant shall identify and evaluate the significance of any net effects or concerns that shall remain after mitigation efforts.
- (v) A copy of a site suitability analysis by a third party qualified professional acceptable to the Township to identify and assess any potential impacts to or hazardous conditions resulting from proximate existing uses and conditions. The suitability analysis must include:
 - a. A flight pattern analysis and impact statement.
 - b. A subsurface mine analysis and impact statement.
 - c. An oil and gas lease analysis and impact statement.
 - d. Other local site conditions identified by Planning Commission.



- (vi) A copy of a shadow flicker analysis at Non-Participating Parcel property lines to identify the locations of shadow flicker that may be caused by the project and the expected durations of the flicker at these locations from sunrise to sunset over the course of a year. The site plan shall identify problem areas where shadow flicker may affect the owners and/or occupants of the Non-Participating Parcels and show measures that shall be taken to eliminate the problems.
- (vii) The restoration plan for the site after completion of the project which includes the following supporting documentation:
 - a. The anticipated life of the project.
 - b. The estimated decommissioning costs as defined in this ordinance
 - c. The cash bond ensuring that funds shall be available for decommissioning and restoration.
 - d. The anticipated manner in which the project shall be decommissioned, and the site restored.
- (viii) A contact person/address to which any notice of complaint, as defined by this ordinance, may be sent.
- (ix) 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.
- (x) Nearby Building Siting: GIS locations and height of all adjacent buildings, structures, and above ground utilities located within three (3) times 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 be shown, whether to be utilized or not with the WECS or Testing Facility, located on the lot or parcel involved.
- (xi) Access Driveways: GIS location of WECS and Testing Facility access driveways together with details regarding dimensions, composition, and maintenance of the proposed driveways and be filed with the township and recorded at the Bay County Register or Deeds as an easement. 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. Access driveways shall be no closer than 300' to adjacent property unless The Applicant provides an easement in the form of a signed approval by affected Participating Landowners. Access driveways must meet Monitor Township Fire



Department regulations and grant permanent access easement to the Township to be recorded at the Bay County Register of Deeds.

- (xii) Facility Security: Security measures shall be sufficient to prevent unauthorized trespass and to protect health, welfare, and safety.
- (xiii) 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 WECS and WECS Testing Facility issue, including procedures and schedules for removal when determined to be obsolete or abandoned.
- (xiv) 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 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 ground, be FAA compliant, and be of most current design, to minimize lighting blinking and brightness nuisance. (Tri City Airport recommends no Turbines South of US 10, or East of I 75)
- (xv) Proof of documents recorded at the Bay Country Register of Deeds.
- (xvi) Supplemental: Additional detail(s) and information as requested by the Planning Commission.

4. Site Insurance: The Applicant shall provide proof of insurance for each 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 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 Applicant's equipment is located.

(f) Deposit to defray cost of hiring consultants and experts.

To administer the provisions relating to WECS, the Township may hire consultants and experts as are reasonably necessary in the sole discretion of the Township. The applicant shall pay the Township in advance for the costs of such consultants and experts. The township shall require a minimum of \$50,000.00 to be held in escrow for these costs. The Township may charge an annual fee to be determined by the Monitor Township Board and assess additional fees in order to execute its responsibilities related to a project. Any fees charged must be reasonable in light of efforts require.



Applicant shall be required as a condition of approval to fund an escrow account for investigation of complaints for, but not limited to, shadow flicker, stray voltage, noise, and signal interference to the amount of \$15,000.00 to be used at the discretion of the Monitor Township Board. When escrow account balance is below \$5,000.00, Township shall notify Applicant and Applicant shall replenish account in the amount of \$15,000.00 within 45 days.