

Ordinance No. ____

AMENDMENT TO OF ORDINANCE 1 ZONING ORDINANCE REGARDING WIND ENERGY

CHARTER OF MADISON LENAWEE COUNTY

An Ordinance to amend Ordinance 1, the Township Zoning Ordinance by adding provisions regulating wind energy installations.

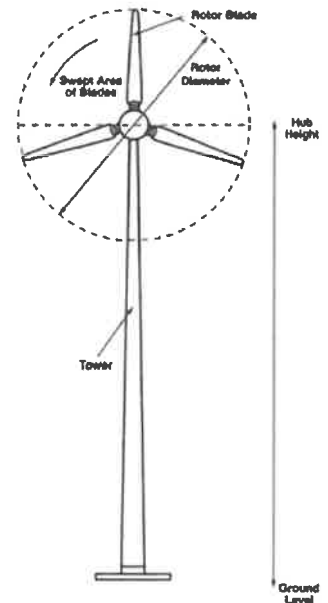
THE CHARTER TOWNSHIP OF MADISON, LENAWE COUNTY, MICHIGAN ORDAINS:

Section 1. Amendment to Section 2.2 of Article II.

Section 2.2 of Article II of the Charter Township of Madison Zoning Ordinance is amended to add the following definitions:

2.2.61 *Wind Energy Facilities and Systems*: As used in this Ordinance the following definitions shall apply to wind energy facilities and systems:

- D. AMBIENT. The sound pressure level exceeded 90% of the time or L_{90} . ANSI. American National Standards Institute.
- E. dB(A). The sound pressure level in decibels. Refers to the “a” weighted scale defined by ANSI. A method for weighting the frequency spectrum to mimic the human ear.
- F. dB(C). The sound pressure level in decibels of frequencies below 1k Hz. Refers to the “c” weighted scale defined by ANSI S1.43-1997.
- G. DECIBEL. The unit of measure used to express the magnitude of sound pressure and sound intensity.
- H. HORIZONTAL AXIS WIND ENERGY SYSTEM. A wind turbine design in which the shaft is parallel to the ground and the blades are perpendicular to the ground.
- I. HUB HEIGHT. The vertical distance measured from ground level to the center of the turbine hub.
- J. MET (METEOROLOGICAL) TOWER. The structure and equipment used to determine the placement or potential placement of a WES, containing instrumentation such as anemometers designed to provide wind data.
- K. (WES) NON-PARTICIPATING PARCEL. A parcel of record not subsidized in any way by the implementation of an On-Site WES, Utility Scale WES, MET Tower (of any size), or Wind Energy Generation Facility. Non-Participating Parcel shall include a parcel that has granted a waiver for setbacks, sound or shadow flicker pursuant to this Ordinance even if value is exchanged for such waiver.



- L. ON-SITE USE WIND ENERGY SYSTEM ("ON-SITE WES"). A WES with the purpose of providing energy to only the property where the structure is located, or to adjacent properties under the same ownership or control as the property where the structure is located, or to adjacent properties with the consent of the owners of the property where the structure is located and the owners of the adjacent properties.
- M. (WES) PARTICIPATING PARCEL. A parcel of record where the placement of a Utility Scale WES, MET Tower, a transmission line or any other WEGF related devices or easements which accompany the implementation of a WES has rendered a monetary gain to be rendered by the property owner. A Participating Parcel does not include a parcel that has granted a waiver for setbacks, sound or shadow flicker pursuant to this Ordinance even if value is exchanged for such a waiver. For On-Site WES, the Participating Parcel is the parcel where the structure is located.
- N. PRE-EXISTING SOUND PRESSURE LEVEL. The amount of background sound at a given location prior to the installation of a WES which may include, but shall not be limited to traffic, machinery, lawnmowers, human activity, and the interaction of wind with the landscape. The sound levels are to be measured on a dB(A) weighted scale as defined by the American National Standards Institute.
- O. SHADOW FLICKER. Alternating changes in light intensity caused by the moving blade of a WES casting shadows on the ground and stationary objects.
- P. SOUND PRESSURE. 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.
- Q. SOUND PRESSURE LEVEL. The sound pressure mapped to a logarithmic scale and reported in decibels (dB).
- R. TOTAL HEIGHT. Vertical distance measured from the ground level at the base of the tower to the uppermost vertical extension of any blade, or the maximum height reached by any part of the Wind Energy System (WES) whichever is greater.
- S. UTILITY SCALE WIND ENERGY SYSTEM. A WES designed and constructed to provide electricity to the electric utility grid and occupied by a number of turbines that exceed a combined total potential power output greater than a maximum of ten (10) kW.
- T. VERTICAL AXIS WIND ENERGY SYSTEM. A wind generator design where the rotating shaft is perpendicular to the ground and the cups or blades rotate parallel to the ground.
- U. WES ROTOR DIAMETER . The distance measured across the central potential swept area of a WES blade's pattern.
- V. WIND ENERGY SYSTEM (WES) . Equipment that converts and then stores or transfers energy from the wind into usable forms of energy and includes any base, blade, foundation, generator, nacelle, rotor, tower, transformer, turbine, vane, wire, or other component used in the system. Also refers to the term "wind turbine" or "wind generator".
- W. WIND ENERGY GENERATION FACILITY (WEGF) . Electricity generating facility consisting of one or more Utility Scale wind turbines under common ownership

or operational control, and includes substations, MET Towers, cables/wires and other buildings accessory to such facility, whose main purpose is to supply electricity to off-site customers.

Section 2. Amendment to Section 4.1.1. of Article IV to Add Certain Wind Energy Facilities as a Permitted Use in the AG-1 District

Section 4.1.1. of Article IV is amended as to add subsections j. and k. follows:

- j. Meteorological Towers ("MET Towers") not greater than 40 feet in total height.
- k. On-Site Use Wind Energy Systems ("On-Site WES") not greater than 40 feet in total height.

Section 3. Amendment to Section 4.1.2. of Article IV to Add Wind Energy Facilities as a Conditional Use in the AG-1 District

Section 4.1.2. of Article IV is amended as to add subsections v as follows:

- u. All Utility Scale Wind Energy Systems ("Utility Scale WES").

Section 4. Amendment of Section 4.11.4. of Article IV regarding height exceptions as follows:

Section 4.11.4.a. of Article IV is amended as follows:

- a. Height Limitations. The limitations affecting the height of structures shall not apply to the following appurtenant appendages and structures provided they comply with all other provisions of this or any other applicable ordinances: spires, belfries, penthouses and domes not used for human occupancy; chimneys; ventilators; skylights; water tanks; bulkheads, utility poles and power lines, Wind Energy Facilities and Systems defined by this Ordinance; radio and television broadcasting and receiving antennae; silos; parapets; and other necessary mechanical appurtenances; provided their location shall conform where applicable to the requirements of the Federal Communications Commission, the Civil Aeronautics Administration, and other public authorities having jurisdiction.

Section 5. Amendment to Section 5.6.1. of Article V to Require Site Plans for WindEnergy Facility

Section 5.6 of Article V is amended as to add subsection j, k and l follows:

- j. Meteorological Towers ("MET Towers") not greater than 40 feet in total height.
- k. On-Site Use Wind Energy Systems ("On-Site WES") greater than 40 feet in total height.
- l. All Utility Scale Wind Energy Systems ("Utility Scale WES").

Section 6. Amendment to Section 5.5.5.b. of Article V to Add Subsection 30 for Regulations Applicable to On-Site WES or MET Towers Greater than 40 feet in Total Height

and for Wind Energy Generation Facility or Utility Scale WES.

Section 5.5.5.b.of Article V is amended to add subsection 30 as follows:

30. Wind Energy Facilities and Systems

- A. **Purpose.** The most common and prevalent land use within Madison Charter Township is the Agricultural District ("AA") and its preservation has been an ongoing goal within the community for many years. For example, Madison Charter Township has stated, among other purposes, that it desires to protect the character and the stability of the agricultural, recreational, commercial and other areas within the Township and promote the orderly and beneficial development of such areas.

Michigan's Public Act 295 of 2008 is known as the Clean, Renewable, and Efficient Energy Act (the "Act"). The Act's purpose is to promote the development of clean energy, renewable energy, and energy optimization through the implementation of a clean, renewable, and energy efficient standard. Naturally occurring wind has been acknowledged and referred to as a new "crop" within the State of Michigan. Traditional farming operations require large tracts of land not typically located near densely populated areas due to their inherent nature and necessity for mass production of grains, animal husbandry, dairying, horticulture and other agricultural activities. Farming has been and is expected to continue to be an ongoing and economically viable means of employment for many throughout the State and more specifically in Madison Charter Township for future land owners. Similarly, wind regulations are necessary for agricultural districts to further the goal of agricultural preservation and minimize the potential adverse effects of this emerging land use on adjacent properties.

- B. **Findings.** The following guidelines have been developed with the intention of obtaining an appropriate balance between the need for clean, renewable energy resources and the need to protect the public health, safety, and welfare of the community. Additionally, given the advancement in technology of "wind development" in general, according to the latest maps generated by the Michigan Department of Labor and Economic Growth, specific locations within Madison Charter Township may support the implementation of Utility Scale Wind Energy Systems. To prepare for potential "wind development projects" within the Township, the ordinance may require certain developments to obtain a Conditional Use Permit. The following language amendment encourages the orderly development of alternative energy resources in the Agricultural District to further preserve large tracts of land within said district for future agricultural use and protects the health, safety and welfare of the residents of Madison Charter Township.

- C. **Onsite WES or MET Towers Greater Than 40 Feet in Total Height.** In addition to the information required by Section 5.6, site plans submitted for On-Site WES or MET Towers greater than 40 feet in total height shall also include the following information:

1. An application for a Conditional Use Permit and Site Plan Review for On-Site WES or MET Towers Greater than 40 Feet in total height.

Prior to any installation efforts taking place upon a Participating Parcel,

an application for a conditional use permit and site plan review and approval and this subsection must be filed and approved respectively by the Madison Charter Township Board of Trustees and the Madison Charter Township Planning Commission. Information required for said reviews must, in addition to any other information required by Sections 5.5 and 5.6 and , include the following:

- a. Name of property owner(s), parcel identification number and address.
 - b. Zoning classification of the Participating Parcel.
 - c. Proposed type, number and height of the On-Site WES or MET Towers to be constructed including the manufacturer and model, product specifications regarding noise output (measured in decibels; dB(A)), total rated generating capacity, dimensions, rotor diameter, and description of ancillary facilities (including but not limited to tower design, color, and wiring).
 - d. Evidence that the Michigan Public Service Commission and the subject utility company have been informed of the applicant's intent to install an interconnected, customer-owned generator and that such connection has been approved.
 - e. A map drawn to scale depicting the Participating Parcel's property lines, locations of existing roads and access drives, structures including above and below grade utility lines, public easements and existing mature vegetation.
 - f. The required setbacks shall be displayed upon the Participating Parcel's site plan.
 - g. The location(s) of the On-Site WES or MET Towers and its supporting electrical system's components including distances from existing structures, utility lines or any other possibly impacted items on-site.
 - h. An engineered set of plans illustrating the proposed On-Site WES or MET Towers must be prepared or reviewed by a registered engineer.
 - i. Standard drawings of any proposed equipment for review of the structural components of the On-Site WES or MET Towers, including structures, towers, bases, and footings. A registered engineer's certification is required for all drawings and any necessary calculations that indicate that the system complies with all applicable local, state, and federal building, structural and electrical codes.
2. **General Requirements.** In addition to the required standards and findings under for conditional uses and site plan review, On-Site WES or MET Towers greater than 40 feet in total height may be permitted as a

conditional use in the A1 - Agricultural District with an site plan approved if they comply with the following requirements:

- a. Installation of the proposed On-Site WES or MET Towers shall be consistent with the public health, safety and welfare of Madison Charter Township.
- b. On-Site WES and MET Towers must comply with all State, Federal and local laws and regulations, including but not limited to the applicable requirements of the Federal Aviation Administration ("FAA"), the Michigan Airport Zoning Act and the Michigan Tall Structures Act both prior to and after installation. No On-Site WES or MET Towers shall be located on any property in such a manner as to interfere with the safe takeoff, approach and landing of aircraft at any non-publicly owned airport as defined by the Michigan Airport Zoning Act, as amended.
- c. The On-Site WES and MET Towers must minimize the adverse impacts of technological obsolescence of such equipment.
- d. Visual Appearance
 - (1) On-Site WES and MET Towers shall be required to be of a neutral, non-reflective, non-obtrusive color which must be maintained throughout the life of the product.
 - (2) On-Site WES and MET Towers shall not be artificially lighted except to comply with applicable FAA or other Federal, State or local requirements, or to the extent necessary for the reasonable safety and security thereof.
 - (3) No advertising is permitted upon an On-Site WES or MET Tower. Additional items such as banners, streamers, flags and similar items are hereby prohibited from being attached to any On-Site WES or MET Towers or their support structure.
 - (4) Support structures (i.e. the tower and or base) for an On-Site WES or MET Tower may utilize guy wires. Said guy wires must be clearly visible from ground level to a vertical height of six (6') feet via altered coloring, striping methods or other administratively approved methods of delineating or highlighting this part of the structure.
 - (5) Any electrical system components related to the On-Site WES or MET Tower, except necessary wiring from the base of the support structure to the turbine, are required to be placed underground within the boundary of each Participating Parcel at a depth

designed to accommodate the existing land use to the maximum extent practical.

- (6) There is a minimal negative visual impact of On-Site WES or MET Towers on neighborhoods, community landmarks, historic sites and buildings, natural environmentally sensitive areas and public right-of-ways.

e. Ground Clearance

- (1) The horizontal axis of the On-Site WES must have a minimum distance of twenty (20') feet between the lowest extension of a rotational blade and the average grade at the base of the structure within a thirty-two (32') foot radius.
- (2) The vertical axis of the On-Site WES are exempt from a minimum height standard.

f. Sound

- (1) No On-Site WES may exceed 40 dB(A) at any adjacent property line of a Non-Participating Parcel. During short-term events including but not limited to severe wind, snow or rain storms if the ambient sound pressure level exceeds 40 dB(A), the standard shall be ambient dB(A) plus five (5) dB(A).
- (2) Sound requirements may be exceeded if written consent is acquired from all adjacent property owners impacted by the On-Site WES. Such written consent must be submitted to the Township.

- g. Number of On-Site WES and MET Towers.* A Participating Parcel shall not be occupied by a number of On Site WES exceeding a combined total potential power output greater than ten (10) kW per hour nor shall the number of MET Towers on a Participating Parcel exceed two (2) MET Towers for each whole five (5) acres.

h. Safety

- (1) An On-Site WES shall have a governing, breaking, feathering or other fail-safe system designed by a certified engineer in order to mitigate and prevent uncontrolled rotation during adverse weather conditions.
- (2) On-Site WES or MET Towers greater than 40 feet must possess protection measures from lightning strikes.
- (3) A structural analysis must be provided demonstrating

the structural integrity of the proposed On-Site WES or MET Tower support system in the event of adverse weather conditions.

- (4) Anchor points for an On-Site WES or MET Tower utilizing guy wires must not be located within the road right-of-way and must be anchored entirely upon the Participating Parcel.

i. Setbacks

- (1) All setbacks required for On-Site WES and MET Towers shall be measured from the outside edge of the base of the tower to the nearest adjacent property line of a Non-Participating Parcel.
- (2) An On-Site WES or MET Tower must meet the greater of either two (2) times the total height of the proposed structure away from a Non-Participating Parcel's property line or the minimum distance necessary for compliance with the maximum 40 dB(A) measurement at an adjacent Non-Participating Parcel's property line.
- (3) The base location for any On-Site WES or MET Tower located on a Participating Parcel shall not be located within the setbacks required by this Ordinance from existing structures, property lines or other necessary setbacks related to the site, including but not limited to utility easements, well/septic separations, or drain easements.
- (4) A minimum separation distance equal to or greater than a one to one (1:1) ratio to total height is required between multiple On-Site WES or MET Towers.
- (5) If an On-Site WES or MET Tower is mounted to a structure, then the placement of the On-Site WES or MET Tower upon the structure shall be opposite to the structure's façade facing the road right-of-way. In the case of a corner lot or lake property, the Township's Zoning Administrator must determine which façade may be considered the Participating Parcel's principal frontage and shall place the On-Site WES or MET Tower accordingly. The placement of the On-Site WES or MET Tower shall maintain the greater of either the front-yard setback requirement for the Participating Parcel's (a) designated zoning classification, or (b) two (2) times the total height of the On-Site WES or MET Tower.
- (6) All On-Site WES or MET Towers must maintain a one-to-one (1:1) total height to setback ratio from existing

utility easements, power lines or other public infrastructure related items which may exist upon the Participating Parcel.

- j. *Collocation.* No collocation of any Wireless Communications Facilities shall be permitted on any On-Site Wes or MET Tower.

D. **Wind Energy Generation Facility or Utility Scale WES.** In addition to the information required by Section 5.6, site plans submitted for any Wind Energy Generation Facility or Utility Scale WES shall include the following information:

- 1. *Application.* An application for a Conditional Use Permit and Site Plan Review for Wind Energy Generation Facility or Utility Scale WES. Prior to any installation efforts taking place upon a Participating Parcel, an application for a conditional use permit and site plan review and approval must be filed and approved respectively by the Madison Charter Township Board of Trustees and the Madison Charter Township Planning Commission. At the sole cost and expense of the applicant, information for said reviews must, in addition to any other information required by Sections 5.6, include the following:
 - a. Electromagnetic Interference and Signal Degradation.
 - b. A report shall be produced by a third party, qualified professional acceptable to the Township to review any adverse impacts to existing telephone (including cellular and land line), microwave, navigational, or radio reception within the Township. The report required by this subsection shall, at a minimum, include the cumulative impact of all proposed, existing and permitted Utility Scale WES or WEGF in Lenawee County to existing telephone (including cellular and land line), microwave, navigational, or radio reception within two and a half (2.5) miles of the Utility Scale WES or WEGF Participation Parcel boundaries.
 - c. A report shall be produced by a third party, qualified professional acceptable to the Township to review any adverse impacts and degradation to the signal of any existing FCC licensed television station(s) whose DTV Service Area includes the location of the proposed Utility Scale WES or WEGF. The report required by this subsection shall, at a minimum, include the cumulative impact of all proposed, existing and permitted Utility Scale WES or WEGF in Lenawee County to each existing station included in the report. If the report shows that a geographical area within the DTV Service Area(s) of an affected station(s) will lose the ability to receive a signal level of at least 35dBuV/m using a receive antenna height of ten (10) feet as a result of the proposed turbines, an acceptable mitigation plan shall be submitted to restore coverage of that signal(s) to the residents in those areas.
 - d. *Soil Conditions.* The applicant must produce a soils analysis to research the geologic characteristics of the site based upon on-

site sampling and testing. This report must be certified by a registered professional engineer licensed within in the State of Michigan.

- e. *Shadow Flicker.* The applicant shall provide a detailed report including a visual site plan illustrating the locations of any Utility Scale WES or WEGF potential shadow areas produced by the Utility Scale WES or WEGF, including a summation of the impacts the proposed Utility Scale WES or WEGF may have upon neighboring/adjacent properties and homes, including the number of hours per year of impact and mechanisms or mitigation efforts that could be implemented to minimize any negative effects.

- f. *Sound.* A report of the existing and expected audible and low frequency sound conditions related to the Utility Scale WES or WEGF Participating Parcels must be conducted to identify a baseline sound presence and expected compliance with the sound limits established by this Ordinance prior to any installation of any Utility Scale WES or WEGF. The report must be produced in accordance with standards established by ANSI by a qualified sound professional acceptable to the Township and must include:
 - (1) A description and map of the sound producing features of the Utility Scale WES or WEGF, including the range of decibel levels expected (to be measured in dB(A) and dB(C)), and the basis for the expectation.
 - (2) A description and map of the existing land uses and structures including any sound receptors, (i.e. residences, hospitals, libraries, schools, places of worship, parks, areas with outdoor workers) within one (1) mile of the proposed Utility Scale WES or
 - (3) WEGF Participating Parcel boundaries. Said description shall include the location of the structure/land use, distances from the proposed Utility Scale WES or WEGF and expected decibel readings for each receptor.
 - (4) The pre-existing ambient sound (including seasonal variation) and the affected sensitive receptors located within one (1) mile of the Proposed Participating parcel(s). Potential sensitive receptors at relatively less windy or quieter locations shall be emphasized and any problem areas identified.
 - (5) A description of the project's proposed sound control features must be explained within the sound report, including specific measures to mitigate noise impacts for sensitive receptors to a level consistent with this Ordinance.

- g. *Wind Resource Availability.* The U.S. Department of Energy and National Renewable Energy Laboratory have adopted standards to measure and classify the wind based upon several factors including wind speed and density. Prior to any application being accepted for a Utility Scale WES or WEGF, a thorough wind assessment study must be submitted to the Township. The study must indicate the viability of a potential development by assessing the potential Participating Parcel's wind resource within the U.S. Department of Energy and National Renewable Energy Laboratory classification system.
- h. *Technical Documentation.* The following information is to be assembled and submitted during review of a Utility Scale WES or WEGF conditional use permit as a separate report from the final site plan to address the physical characteristics of the proposed Utility Scale WES or WEGF. Said information will be placed on file with the Township for review purposes.
- i. Wind energy facility technical specifications including manufacturer and model, rotor diameter, tower height/type, foundation type/dimensions.
- j. Typical tower foundation blueprints or drawings signed by a Professional Engineer licensed to practice in the State of Michigan.
- k. Typical tower blueprints or drawings signed by a Professional Engineer licensed to practice in the State of Michigan.
- l. Electrical schematic illustrating the proposed support infrastructure, wires, location, and depth of the Utility Scale WES or WEGF to the point of inter-connection with any other electrical transmission lines.
- m. Fire Prevention and Emergency Response Plan and Requirements.
 - (1) Description of the potential fire and emergency scenarios that may require a response from fire, emergency medical services, police or other emergency responders.
 - (2) Designation of the specific agencies that would respond to potential fire or other emergencies.
 - (3) Description of all emergency response training and equipment needed to respond to a fire or other emergency including an assessment of the training and equipment available to the designated agencies.
- n. *Environmental Impact Issues:* Documentation demonstrating the expected ability to comply with the applicable parts of the Michigan Natural Resources and Environmental Protection Act

(1994 PA 451, MCL 324.101 et seq.), including but not limited to:

- (1) Part 31 Water Resources Protection (MCL 324.3101 et seq.),
- (2) Part 91 Soil Erosion and Sedimentation Control (MCL 324.9101 et seq.) ,
- (3) Part 301 Inland Lakes and Streams (MCL. 324.30101 et seq.),
- (4) Part 303 Wetlands (MCL. 324.3030 1 et seq.),

The site plan and other documents shall illustrate and describe mitigation measures to minimize potential impacts on the natural environment including, but not limited to wetlands, avian and wildlife (migratory bird patterns and bat population effects), other fragile ecosystems, historical/cultural sites and antiquities.

2. *Site Plan Requirements and Additional Data.* Any site plan for a Utility Scale WES or WEGF must include the following information.
 - a. A map drawn to scale depicting the Participating Parcel's property lines, locations of existing roads and access drives, structures including above and below grade utility lines, public easements and existing mature vegetation.
 - b. The required setbacks for a Utility Scale WES or WEGF shall be displayed upon the site plan.
 - c. The location(s) of the Utility Scale WES or WEGF and any supporting electrical system components, including distances from existing structures and utility transmission.
 - d. Identification and location of the Participating Parcels on which the proposed Utility Scale WES or WEGF will be located, including distances from occupied structures on Participating Parcels. The applicant shall provide written documentation that has been recorded at the Register of Deeds from all property owners of Participating Parcels that provides evidence they agreed to be a Participating Parcel.
 - e. Identification and location of occupied structures on Non-Participating Parcels and distances from property lines of Non-Participating Parcels within a three quarter (3/4) mile radius of each Participating Parcel.
 - f. An illustration of the proposed type of Utility Scale WES or WEGF.

- g. Proof of the applicant's liability insurance for the subject property(s).
- h. A written description of the decommissioning and reclamation plan, including initial contact information for the Owner, those performing maintenance upon the structures, and operators of the development, and Participating Parcel owners.
- i. The Owner shall have a continuing obligation to provide the Township with up to date contact information.
- j. A site grading, erosion control and storm water drainage plan must be submitted and approved by the Lenawee County Drain Commission prior to commencement of construction of a Utility Scale WES or WEGF.
- k. A description, or travel plan, of the routes to be used by construction and delivery vehicles and of any road improvements that will be necessary 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 development must be submitted to and approved by the Lenawee County Road Commission prior to commencement of construction of a Utility Scale WES or WEGF.

The travel plan must include the load capacity of the affected road, an assessment of the roadway prior to and after the construction efforts have been completed and an intersection display or diagram indicating where and what type of improvements are necessary for transportation, delivery or maintenance purposes for any Utility Scale WES or WEGF related items. Any necessary post construction road repairs or reconstruction shall be the responsibility of the owner/operator of the Utility Scale WES or WEGF and such necessary road repairs or reconstruction must be performed in compliance with all applicable requirements of the Lenawee County Road Commission.

- l. A statement indicating what hazardous materials will be used and stored on the site.
- m. An anticipated construction schedule and project phasing plan shall be required prior to final site plan approval.
- n. A statement certifying that every Utility Scale WES or WEGF shall be inspected on an annual basis to ensure that all equipment related to the development is in proper working condition. The owner shall maintain with the Township up to date name and contact information for the person or organization responsible for the general maintenance of the

structures.

3. General Requirements

- a. The proposed installation of the WEGF or Utility Scale WES shall be consistent with the goals and objectives related to agricultural preservation including the public's general health, safety and welfare within Madison Charter Township.
- b. The proposed installation of the WEGF or Utility Scale WES shall minimize the adverse impacts of technological obsolescence of such equipment, including a requirement to remove obsolete and/or unnecessary Utility Scale WES or WEGF equipment in a timely manner.
- c. The proposed installation of the WEGF or Utility Scale WES shall minimize any negative externalities related but not limited to noise, shadow flicker, soil erosion and physical road conditions.
- d. Any proposed equipment 50 feet or greater in height shall be required to provide certified drawings of the structural components of the Utility Scale WES or WEGF including structure's components, towers, bases, and footings. A registered engineer's certification is required for all drawings and any necessary calculations that indicate the system complies with all applicable local, state, and federal building, structural and electrical codes.

4. Visual Appearance.

- a. Utility Scale WES or WEGF shall be required to be of a neutral, non-reflective, non-obtrusive color which must be maintained throughout the life of the product to mitigate visible oxidation or corrosion.
- b. Lighted safety beacons may be installed upon the top of the structure's nacelle to adhere to Federal and State requirements, including FAA requirements, or to the extent necessary for the reasonable safety and security thereof. Any lighting shall be implemented at the lowest intensity allowable under law, including but not limited to any FAA regulations, and must be reasonably shielded to reduce glare and visibility from the ground.
- c. No advertising is permitted upon a Utility Scale WES or WEGF. Additional items such as banners, streamers, flags and similar items are prohibited from being attached to any Utility Scale WES or WEGF and or its support structure.
- d. Support structures (i.e. the tower and or base) for a Utility Scale WES or WEGF shall not utilize guy wires.

- e. The proposed installation of the WEGF or Utility Scale WES shall minimize negative visual impacts upon neighborhoods, community landmarks, historic sites and buildings, natural environmentally sensitive areas and public right-of-ways.
5. Audible Sound.
- a. Sound emanating from the operation of a Utility Scale WES or WEGF shall not exceed 40 dB(A) between the hours of 10:00 pm and 6:00 am measured at any adjacent property line of a Non-Participating Parcel.
 - b. During the hours of 6:00 am to 10:00 pm no Utility Scale WES or WEGF shall exceed 45 dB(A) measured at any adjacent property line of a Non-Participating Parcel The sound pressure levels may be exceeded during short-term events such as severe wind storms. If, during short term events, the ambient sound pressure level exceeds the levels permitted by this subsection, the sound pressure level permitted shall be the ambient dB(A) plus five (5) dB(A) and shall be measured at any adjacent property line of a Non-Participating Parcel.
 - c. In the event the noise levels resulting from the Utility Scale WES or WEGF exceed the criteria listed above, a waiver to said levels may be approved by the Township, provided that the following has been accomplished:
 - (1) Written consent from the affected property owner(s) has been obtained stating that they are aware of the Utility Scale WES or WEGF and the sound limitations imposed by this Ordinance and that consent is granted to allow sound levels to exceed the maximum limits otherwise allowed; and
 - (2) If the applicant wishes the waiver to apply to succeeding owners of the property, a permanent sound impact easement must be recorded in the Lenawee County Register of Deeds office which describes the benefitted and burdened properties and which advises all subsequent owners of the burdened property that noise levels in excess of those otherwise permitted by this Ordinance may exist on or at the burdened property.
6. *Setbacks.* All setbacks required for Utility Scale WES or WEGF shall be measured from the outside edge of the base of the tower to the nearest adjacent property line of a Non-Participating Parcel, Participating Parcel's inhabited principal structure or adjacent road right-of-way.
- a. The base of any Utility Scale WES or WEGF on Participating Parcels shall be set back a minimum of two and a half (2.5) times the total height of the Utility Scale WES or WEGF from any inhabited principal structure. Participating Parcel owners

- shall have the ability to waive such a setback only through written acceptance and approval by the Madison Charter Township Board of Trustees during the conditional use application process. However, no such waiver shall allow any Utility Scale WES or WEGF within a distance of two (2) times the total height of the Utility Scale WES or WEGF from any inhabited principal structure. Any waivers accepted and approved by the Township shall be recorded, at no expense to the Township, with the County's Register of Deeds as a deed restriction against the property.
- b. The base of any Utility Scale WES or WEGF shall be set back a minimum of four (4) times the total height of the Utility Scale WES or WEGF from
 - c. Non-Participating Parcels. Non-Participating Parcels shall have the ability to waive such a setback only through written acceptance and approval by the Madison Charter Township Board of Trustees during the conditional use application process. However, no such waiver shall allow any Utility Scale WES or WEGF within a distance of two and a half (2.5) times the total height of the Utility Scale WES or WEGF from a Non-Participating Parcel. Any waivers accepted and approved by the Township shall be recorded, at no expense to the Township, with the County's Register of Deeds as a deed restriction against the property.
 - d. Each Utility Scale WES or WEGF shall adhere to a minimum setback of one and one-half (1.5) times the total height from a public road right-of-way, communication tower, existing electrical lines or any other public utility, except for the interconnection between a Utility Scale WES or WEGF and the transmission facilities of a public utility.
 - e. All Utility Scale WES or WEGF shall have a minimum separation distance between structures of not less than one and one-half (1.5) times the WES rotor diameter, the minimum industry standards or the minimum manufacturer's recommendations. The applicant is required to provide documentation and rationale certified by a registered engineer supporting the separation distance.
 - f. To further encourage the placement of structures in low-impact areas, all interior property line setbacks between adjacent Participating Parcels located within a Utility Scale WES or WEGF may be waived through a written acceptance and approval by the Madison Charter Township Board of Trustees during the conditional use permit application process, provided the minimum setbacks from inhabited principal structures are met. Any waivers accepted and approved by the Township shall be recorded, at no expense to the Township, with the County's Register of Deeds as a deed restriction against the property.

7. *Low-Impact Design Layout.* The placement of WEGF or Utility Scale WES must minimize the impacts on existing agricultural endeavors and farmland activity including, but not limited to, tiling systems, harvest and planting patterns or pasture areas.
 - a. Appropriate locations for potential WEGF or Utility Scale WES within existing agricultural lands shall be encouraged along fence rows, tree lines, forest areas and other portions of land which are not typically utilized for agricultural production.
 - b. Land clearing, soil erosion, habitat impact and clearing of natural vegetation shall be limited only to that which is necessary for the construction, operation and maintenance of the WEGF or Utility Scale WES and is otherwise prescribed by applicable laws, regulations, and ordinances.
 - c. Any cooling system ventilation, generators or other potential sources of sound must be referenced by location and type per Utility Scale WES or WEGF upon a final site plan. Any sound generative device must be oriented upon the machine or site in a manner which will minimize any negative impacts to neighboring parcels.

8. *Safety.*
 - a. Utility Scale WES or WEGF shall not be designed to be climbable on the exterior of the structure.
 - b. All access doors and interior access points shall be lockable and accessible only to those either constructing or maintaining the Utility Scale WES or WEGF.
 - c. Appropriate warning signs shall be placed at the base of the Utility Scale WES Tower or WEGF upon any associated electrical equipment and at every Utility Scale WES Tower or WEGF entrance.
 - d. Any access drives or roads remaining on the site shall be gated and locked at night or when not in use. Gates shall be located no closer than fifty (50') feet from the road right-of-way.
 - e. The blade tip on any Utility Scale WES or WEGF shall not be less than seventy-five feet (75') from the ground when measured from the lowest rotational position.
 - f. Each Utility Scale WES or WEGF shall be equipped with both a manual and automatic braking device capable of stopping the operation in high winds and adverse weather conditions.
 - g. All Utility Scale WES or WEGF must have lightning protection.
 - h. The Township or any emergency service provider who services the Township has the authority to order any Utility Scale WES

or WEGF to cease its operations if they determine in good faith that there is an emergency situation involving the Utility Scale WES or WEGF that may result in danger to life or property. The Owner and/or operator shall provide the Township and emergency services providers with contact information for personnel with access to the braking device who shall be available at all times in person or by phone with remote access.. The Owner and/or operator may be required to be available and present in such an emergency situation. .

- i. All Utility Scale WES or WEGF must comply with all State, Federal and local laws and regulations, including but not limited to the applicable requirements of the Federal Aviation Administration ("FAA"), the Michigan Airport Zoning Act and the Michigan Tall Structures Act both prior to and after installation. No WES or WEGF shall be located on any property in such a manner as to interfere with the safe takeoff, approach and landing of aircraft at any non-publicly owned airport as defined by the Michigan Airport Zoning Act, as amended.
9. *Shadow Flicker.* A Utility Scale WES or WEGF shall not be allowed to cast a shadow upon an adjacent or nearby Non-Participating Parcel's principal structure in excess of thirty (30) hours measured on a continuous 365 day basis. Equipment and software such as "Shadow Impact Module SIM by NorthTec GMBH" or equivalent with all necessary cabling and receptors may be necessary and shall be installed and maintained by the Owner and/or operator to abate any shadow flicker in excess of the thirty (30) hours permitted by this subsection. Non-Participating Parcel owners may waive the shadow flicker requirement to permit shadow flicker in excess of the thirty (30) hours permitted by this subsection through a written acceptance and approval by the Madison Charter Township Board of Trustees during the conditional use permit application process. Any waivers accepted and approved by the Township shall be recorded, at no expense to the Township, with the County's Register of Deeds as a deed restriction against the property..
10. *Maximum Vibrations and Low Frequency Sound.*
- a. A Utility Scale WES or WEGF shall not produce vibrations humanly perceptible upon a Non-Participating Parcel.
 - b. Sound emanating from the operation of a Utility Scale WES or WEGF shall not exceed 50 dB(C) between the hours of 10:00 pm and 6:00 am measured at any adjacent property line of a Non-Participating Parcel.
 - c. During the hours of 6:00 am to 10:00 pm no Utility Scale WES or WEGF shall exceed 55 dB(C) measured at any adjacent property line of a Non-Participating Parcel. The sound pressure levels may be exceeded during short-term events such as severe wind storms. If, during short term events, the ambient

sound pressure level exceeds the levels permitted by this subsection, the sound pressure level permitted shall be the ambient dB(C) plus five (5) dB(C) and shall be measured at any adjacent property line of a Non-Participating Parcel.

- d. In the event the noise levels resulting from the Utility Scale WES or WEGF exceed the criteria listed above, a waiver to said levels may be approved by the Township, provided that the following has been accomplished:
 - (1) Written consent from the affected property owner(s) has been obtained stating that they are aware of the Utility Scale WES or WEGF and the sound limitations imposed by this Ordinance and that consent is granted to allow sound levels to exceed the maximum limits otherwise allowed; and
 - (2) If the applicant wishes the waiver to apply to succeeding owners of the property, a permanent sound impact easement must be recorded in the Lenawee County Register of Deeds office which describes the benefitted and burdened properties and which advises all subsequent owners of the burdened property that noise levels in excess of those otherwise permitted by this Ordinance may exist on or at the burdened property.
- e. State/Federal Requirements. A Utility Scale WES or WEGF shall meet or exceed any applicable standards and regulations of the FAA, Michigan Public Service Commission, National Electric Safety Code, U.S. Fish and Wildlife Service and any other agency of the state or federal government with the authority to regulate wind turbine *generators* or other tall structures.
- f. An ongoing log of maintenance activities *performed* on the Utility Scale WES or WEGF shall be submitted to the Township on an annual basis.
- g. Environmental Impact Issues. The Utility Scale WES, Conditional Use MET Tower and WEGF shall comply with the applicable parts of the Michigan Natural Resources and Environmental Protection Act (1994 PA 451, MCL 324.101 et seq.), including but not limited to:
 - (1) Part 31 Water Resources Protection (MCL 324.3101 et seq.),
 - (2) Part 91 Soil Erosion and Sedimentation Control (MCL 324.9101 et seq.), Part 301 Inland Lakes and Streams (MCL 324.30101 et seq.),
 - (3) Part 303 Wetlands (MCL 324.3030 1 et seq.),

h. Security Bond Requirements.

- (1) Prior to final approval of a conditional use permit, the applicant shall engage a certified professional engineer acceptable to the Township to estimate the total cost of decommissioning the Utility Scale WES or WEGF and reclamation efforts needed to return affected land back to its original physical condition. The Applicant shall pay for the costs of obtaining such estimate. Said estimates shall be submitted to the Madison Charter Township Board of Trustees for review.
- (2) The owner(s) and/or operator of the Utility Scale WES or WEGF shall post a security bond, in a form acceptable to the Township, equal to one hundred fifty percent (150%) of the total estimated decommissioning and reclamation costs.
- (3) Said bond shall be posted and maintained with a bonding company licensed in the State of Michigan or Federal or State chartered lending institution chosen by the owner(s) or operators and acceptable to the Township.
- (4) Any lending institution shall be required to notify the Township ninety (90) days prior to expiration of the applicable security bond and the owner(s) and/or operator shall renew the security bond with that lending institution or another lending institution of their choosing and acceptable to the Township. Until each Utility Scale WES or WEGF is decommissioned and the property reclaimed, the owner(s) and/or operator is required to maintain a security bond in accordance with this Section. In the event a security bond is not maintained, the Township may (i) take any action permitted by law, (ii) revoke the conditional use permit, (iii) order a cessation of operations, and (iv) order that the Utility Scale WES or WEGF be removed and the land reclaimed.
- (5) When decommissioning and site reclamation has been completed, written correspondence to the Madison Charter Township Board of Trustees is required before the Board of Trustees may authorize a release of security bonds associated with a Utility Scale WES, or WEGF.

i. Decommissioning and Removal Procedures.

- (1) As part of the conditional use permit process, the applicant shall submit a decommissioning plan to describe the anticipated life of the project, estimated

decommissioning costs net of salvage value in current dollars, methods of ensuring that funds will be available for decommissioning, including a method of reclamation for restoration of the land.

- (2) Any Utility Scale WES or WEGF that is not operated for a continuous period of twelve (12) months shall be considered abandoned. The owner(s) of such structure shall be required to either provide to the Township a written explanation regarding why the tower is inoperable and a timeline of no longer than sixty (60) days to bring the tower back into operation or compliance or apply for the necessary demolition permits for removal within ninety (90) days of receipt of written notice from the Township.

If the owner(s) fail to provide explanation within sixty (60) days as described above or fails to apply for the necessary demolition permits within ninety (90) days for removal of an abandoned Utility Scale WES or WEGF, the Township shall provide the owner(s) with written notice of the violation. If the owner(s) fail to cure the violation within sixty (60) days of the date of notice, the Township may begin the process of removing the Utility Scale WES or WEGF and all associated equipment or appurtenances at the owner's/owners' expense. The Township shall sell any salvageable material and deduct any monies generated from said sales from the balance of the required security bond. The remedies provided to the Township pursuant to this subsection shall be in addition to and not in place of any other remedy available to the Township at law or in equity to enforce the provisions of this Ordinance.

- (3) When a Utility Scale WES or WEGF is decommissioned, all items must be removed from the subject property, including buildings, electrical components, any roads, structure foundation, or other associated components to a depth not less than six (6') feet below grade. Reclamation of the site includes the planting of grasses or cover crops, which may have been present prior to construction or can be utilized to effectively maintain soil erosion.
- (4) Any material left six (6') feet below grade must be documented and recorded upon a certified survey and recorded within the Lenawee County Register of Deeds.

- (5) The property owner may be exempt from removing certain items including but not limited to the entrance or roadway on the property, if the Township grants written permission.
- j. **Post Construction Activities.** To ensure compliance with the requirements of this Ordinance, the following actions must be taken pending completion of any Utility Scale WES or WEGF.
- (1) A final inspection with the Lenawee County Drain Commissioner shall take place to ensure that soil erosion matters have been finalized at each site hosting a Utility Scale WES or WEGF.
 - (2) Within ninety (90) days of project completion, any roadway utilized for moving or construction purposes shall be inspected by the Zoning Administrator and representatives from the Lenawee County Road Commission to ensure compliance with the travel plan.
 - (3) A sound pressure level analysis is required to be completed by the applicant from a sample of locations throughout the interior and perimeter of the Participating Parcels to demonstrate compliance with the requirements of this Ordinance. Proof of compliance with audible sound standards shall be submitted to the Township for review within one hundred-eighty (180) days of the date the Utility Scale WES or WEGF project becoming operational. Sound shall be measured by a third-party, qualified sound professional.
 - (4) Following the completion of construction, the applicant shall provide the Township written certification that all construction was completed pursuant to the conditional use permit and approved site plan.
- k. **Collocation.** No Collocation of any Wireless Communications Facilities shall be permitted on any Utility Scale WES or WEGF without the express approval of the Township.
- l. **Public Inquiries & Complaints.** Should an aggrieved property owner allege that a Utility Scale WES or WEGF 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 property owner including their name, address and contact information.
 - (2) Upon receiving a complaint from an affected property

owner 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 Board shall advise the owner(s) and/or operator of the Utility Scale WES or WEGF of the complaint. Within ten (10) days of the date of notice, the owner(s) and/or operator of the Utility Scale WES or WEGF 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 testing and 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 Utility Scale WES or WEGF is in violation of this Ordinance, the owner(s) and/or operator shall reimburse the Township from the deposit required in subsection 2 above for the investigation or analysis and shall take immediate action to bring the Utility Scale WES or WEGF into compliance. In the event the owner(s) and/or operator fails or refuses to bring the Utility Scale WES or WEGF into compliance 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 for which the owner(s) and/or operators are deemed responsible shall be fined \$500.00. Each day of non-compliance shall be a separate offense.

Section 7. Validity and Severability.

Should any portion of this Ordinance be found invalid for any reason, such holding shall not be construed as affecting the validity of the remaining portions of this Ordinance.

Section 8. Repealer Clause.

Any ordinances, resolutions or parts of ordinances or resolutions, in conflict herewith are hereby repealed only to the extent necessary to give this Ordinance full force and effect.

Section 9. Saving Provision

All provisions of Ordinance 1 not amended by this ordinance shall continue in full force and effect.

Section 10. Effective Date.

This ordinance shall take effect and be in full force and effect 30 days from and after the date of publication.

YEAS: _____
NAYS: _____
ABSENT: _____

Ordinance declared adopted on _____, 2022.

Gary Griewahn, Supervisor
Charter Township of Madison

CERTIFICATE OF ADOPTION AND PUBLICATION

I, Janet Moden, the duly elected Clerk of the Charter Township of Madison certify that the foregoing ordinance is a true and correct copy of the ordinance enacted by the Township Board of the Charter Township of Madison on _____, 2022 and published in the Daily Telegram a newspaper circulated in the Charter Township of Madison on _____, 2022.

Janet Moden, Clerk
Charter Township of Madison