

DRAFT MAPLE GROVE TOWNSHIP ZONING ORDINANCE AMENDMENT

SECTION 411. UTILITY GRID WIND ENERGY SYSTEMS

Subsection 411.1 Purpose and Findings.

- A. Purpose. The purpose of this Section is to establish standards for the siting, installation and operation of Utility Grid Wind Energy Systems (UGWES) within the A-1 Agricultural: Primary District as a special use.
- B. Findings.
1. Wind energy is an abundant, renewable and carbon-free energy resource of the Township, and the conversion of wind energy to electricity may reduce dependence on nonrenewable energy sources and decrease the adverse effects that result from the use of conventional energy sources.
 2. The generation of electricity from properly sited UGWES can be cost-effective, and in many cases existing power transmission and distribution systems can be used to transmit electricity from UGWES to utilities and transmission companies.
 3. Regulation of the siting, installation and operation of UGWES is necessary to protect the health, safety, and welfare of neighboring property owners and the general public.
 4. If not properly sited, UGWES may cause significant potential negative aesthetic effects because of their large size, lighting, and shadow flicker.
 5. If not properly regulated, installation of UGWES can create drainage problems through erosion and lack of sediment control for facility and access road sites, and harm farmlands through improper construction methods.
 6. UGWES may present a risk to birds, bats and other creatures if not properly sited.
 7. If not properly sited, UGWES may adversely affect the property values of adjoining property owners.
 8. UGWES may be sources of noise, which, if unregulated, can negatively impact the quiet enjoyment, health, and safety of persons and properties in their vicinity.
 9. During UGWES construction, traffic problems and damage to local roads may occur.
 10. UGWES can cause interference issues with various types of communications.
 11. To be properly sited, UGWES should be located in and surrounded by substantial tracts of largely undeveloped land, thereby diminishing the negative effects of UGWES on surrounding properties.

12. By properly siting UGWES in Wind Development Project Areas containing substantial surrounding undeveloped land, it is also possible to preserve the surrounding undeveloped land for agricultural uses and purposes that are not inconsistent with the location of UGWES.
13. The Maple Grove Township Board takes a neutral stance on wind development, but does wish that if it occurs within the Township, it meets the following set regulations.

Subsection 411.2 Applicability.

UGWES may be allowed as a special use only within the A-1 Agriculture: Primary District, subject to the regulations and requirements of this Section and the general special use procedures, standards and criteria of this Zoning Ordinance. UGWES connections, ancillary equipment and underground wiring may also be allowed to be installed in the Commercial and Industrial Districts as a component of a UGWES. All parcels, regardless of the zoning district may participate in proposed wind lease agreements, but no UGWES shall be allowed in any Residential or Commercial Districts.

Subsection 411.3 Application; Signatures.

The application for the special use for a UGWES shall be submitted on a form prepared for that purpose by the Township, and shall demonstrate the support in writing of each and every legal and equitable owner of each lot or parcel within Maple Grove Township that is participating in whole or in part in the Wind Development Project Area.

The applicant shall submit eight (8) copies of the application and all supporting materials to the Township Zoning Administrator. The Zoning Administrator will cause the application to be placed on the Planning Commission's regular meeting agenda.

Subsection 411.4 Site Plan Drawing and Supporting Materials.

All applications for a UGWES special use shall be accompanied by detailed site plans, drawn to scale and dimensioned, and certified by a registered engineer licensed in the State of Michigan, displaying the following information:

- A. All requirements for a site plan contained in Article XIV of this Ordinance.
- B. All lot lines and dimensions, including a legal description of each lot or parcel participating in the Wind Development Project Area.
- C. Names of the owners of each lot or parcel within Maple Grove Township that is proposed to be participating in the Wind Development Project Area.
- D. Location of proposed buildings, structures, electrical lines, towers, guy wires, guy wire anchors, security fencing, and all above ground structures associated with each UGWES.

- E. Location of all structures and above ground utilities located or proposed within the Wind Development Project Area. On-site buildings, structures, and utilities shall also be scalable on drawings.
- F. Location of all existing and proposed overhead and underground electrical transmission or distribution lines proposed as part of the Wind Development Project Area.
- G. Setbacks from each UGWES to the nearest habitable structures within the Wind Development Project Area.
- H. Land elevations at each proposed UGWES location and its relationship to the land elevations of all existing and proposed structures within the Wind Development Project Area. Existing contours provided by a professional land surveyor shall be acceptable.
- I. Access driveways to each UGWES, together with a detailed narrative regarding dimensions, composition, and maintenance of each proposed driveway. All access driveways shall be subject to Saginaw County Road Commission approval, and the use of drives shall be planned so as to minimize the use of lands for that purpose.
- J. The location of all farmland within the Wind Development Project Area that is designated for preservation, a written description of the plan for preservation of farmland within the Wind Development Project Area, and copies of all easements, restrictive covenants, or other documents proposed to be used to achieve that plan.
- K. Planned security measures to prevent unauthorized trespass and access and to warn of potential dangers, during both the construction and operation of the UGWES.
- L. A written description of the maintenance program to be used to maintain each UGWES, including removal when determined to be obsolete or abandoned. The description shall include maintenance schedules, the types of maintenance to be performed, and removal procedures and schedules should the UGWES become obsolete or abandoned.
- M. A copy of the manufacturer's safety measures to prevent uncontrolled rotation or over speeding.
- N. Planned lighting protection measures.
- O. Additional detail(s) and information as required by the special use requirements of this Ordinance, or as requested by the Planning Commission.
- P. A copy of the Environmental Impact Analysis.
- Q. A copy of the Avian & Wildlife Input Analysis.
- R. A Shadow Flicker Analysis indicating anticipated annual hours of shadow flicker on each home or habitable building.

Subsection 411.5 Compliance with the County Building Code.

The applicant shall obtain County approval under the County Building Code as a condition of any special use permit under this section.

Subsection 411.6 Construction Codes, Towers, & Interconnection Standard.

Each UGWES shall comply with all applicable state construction codes, as well as Federal Aviation Administration (FAA) requirements, the Michigan Airport Zoning Act, the Michigan Tall Structures Act, and local jurisdiction airport overlay zone regulations. The tower shaft shall not be illuminated unless required by the FAA. Each UGWES shall comply with applicable utility, Michigan Public Service Commission, and Federal Energy Regulatory Commission interconnection standards.

Subsection 411.7 Farmland Preservation.

Farmland located within the Wind Development Project Area that is not designated as an immediate location of any UGWES and accessory structures is encouraged to be preserved for agricultural uses and purposes through the execution and recording of appropriate farmland easements, restrictive covenants, or other documents approved by the Planning Commission. Although such preservation measures are not required, they will be favorably considered by the Planning Commission in the review of a special use application under this Section.

Subsection 411.8 Design Standards.

- A. Height: The permitted maximum total height of each UGWES (i.e., UGWES height) shall be 500 feet including the blade in vertical position.
 - 1. State and federal regulations may require a lesser height.
 - 2. As a condition of approval, the Township may require a lesser height for a UGWES if it determines that it is reasonably necessary.
 - 3. Each UGWES shall be constructed with a tubular tower, not a lattice tower.
 - 4. The Planning Commission may approve a UGWES height of greater than 500 feet if the applicant clearly demonstrates that such greater height would be in the interest of persons and properties surrounding the Wind Development Project Area.

- B. Setbacks:
 - 1. Setbacks from Property Lines:
 - a. Leased Property: A setback for a UGWES from the property lines of adjacent property leased for the Wind Development Project Area is not required.
 - b. Non-Leased Property: The distance between a UGWES and the property lines of adjacent non-leased properties shall be at least 1.5 times the height

of the UGWES, as measured from the top of the blade in its vertical position to the centerline of its base.

2. **Setbacks from Habitable Structures:** The distance between a UGWES and any residence, school, hospital, church, or public library, or any other habitable structure shall be at least 3.0 times the height of the UGWES as measured from the top of the blade in its vertical position to the centerline of its base in each case or a distance of at least 1,400-feet, whichever is greater. A land owner of a participating parcel may sign a waiver to allow a setback of less than 1,400-feet, but the setback shall not be less than 1,000-feet from that owner's habitable structure.
 3. The distance between a UGWES and the centerlines of roads and other public rights-of-ways (except County drain easements) shall be at least 1.5 times the height of the UGWES, as measured from the top of the blade in its vertical position to the centerline of its base.
 4. The distance between a UGWES and the nearest railroad shall be at least 1.5 times the height of the UGWES, as measured from the top of the blade in its vertical position to the centerline of its base.
 5. The distance between a UGWES and the nearest above-ground public electric power line or telephone line shall be at least 1.5 times the height of the UGWES, as measured from the top of the blade in its vertical position to the centerline of its base.
- C. **Rotor or Blade Clearance:** Blade arcs created by a UGWES shall have a minimum of seventy-five (75) feet of clearance over and from any structure, adjoining property or tree. The minimum blade or rotor clearance above ground level shall be at least seventy-five (75) feet.
- D. **Rotor or Blade Safety:** Each UGWES shall be equipped with both a manual and automatic braking device capable of stopping the UGWES operation in high winds within 80% of design limits of the braking system.
- E. **Tower Access:** To prevent unauthorized climbing, UGWES must comply with at least one of the following provisions:
1. External tower climbing apparatus shall not be located within twelve (12) feet of the ground.
 2. A locked anti-climb device shall be installed and maintained.
 3. A tower capable of being climbed externally shall be enclosed by a locked, protective fence at least ten (10) feet high with barbed wire fence.
- F. **Signs:** Each UGWES shall have one sign, not to exceed two (2) square feet in area, posted at the base of the tower. The sign shall contain at least the following:

1. Warning high voltage.
 2. Warning falling ice.
 3. Manufacturer's name.
 4. Emergency numbers (list more than one number).
 5. FAA regulated sign with precise description with latitude and longitude and shall also contain both the applicant's current telephone number and the current telephone number for the FAA's regional office having jurisdiction over Maple Grove Township.
 6. If fenced, place signs on the fence.
- G. Lighting: A lighting plan for each UGWES shall be approved by the Planning Commission. Such plan must describe all lighting that will be utilized, including any lighting that may be required by the FAA. Such a plan shall include but is not limited to the planned number and location of lights, light color and whether any lights will be flashing. All tower lighting will comply with FAA regulations and guidance and shall be consistent with USFWS/MDNR guidelines.
- H. Electromagnetic Interference: Each UGWES shall be designed, constructed and operated so far as possible so as not to cause radio, television and other wireless signal interference. In the event that electromagnetic interference is experienced, and the UGWES is determined to cause radio, television or other wireless signal reception to be degraded from the conditions prior to the installation of the UGWES through the proper utilization by an expert of relevant facts, data and reliable scientific principles and methods, the UGWES owner shall provide alternate service to each individual resident or property owner affected. If a property owner or resident is successful in demonstrating degradation of their radio, television or other wireless signal reception caused by a UGWES, then the UGWES owner shall also reimburse the property owner or resident for their reasonable costs and fees incurred to prove the existence and cause of the degradation.
- J. Noise Emissions: All UGWES shall be manufactured and constructed with the best available noise reduction technology available at the time of their construction. The sound pressure level generated by a UGWES shall not exceed 50 dB(A) as measured at a participating habitable structure, 50 dB(A) as measured at any non-participating property line, and 45 dB(A) as measured at any existing, non-participating habitable structure. This sound pressure level shall not be exceeded for more than 6 minutes (L 10) in any hour of the day. If the ambient sound pressure level exceeds 45 dB(A), the standard shall be ambient dB(A) plus 5 dB(A).

As part of the application and prior to installation, the applicant shall provide modeling and analysis that will confirm that the UGWES will not exceed the maximum permitted sound pressure levels. Modeling and analysis shall conform to IEC 61400 and ISO 9613. After installation of the UGWES, sound pressure level measurements shall be done by a third party, qualified professional according to the procedures in the most current version of ANSI S12.18. 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 sound pressure level measurements shall be provided to the local government within 6 months of the commercial operation of the project.

- J. Distribution, Transmission and Interconnection: All collection lines and interconnections from the UGWES to the electrical substation shall be located and maintained underground. The Planning Commission may waive the requirement that collection lines and interconnections be located and maintained underground if the Planning Commission determines that it would be impractical or unreasonably expensive to install, place, or maintain such collection lines and interconnections underground. All underground wiring shall be located at a minimum depth of four (4) feet below grade.

Subsection 411.9 Approval Standards.

In addition to the other requirements and standards contained in this section, the Planning Commission shall not approve any UGWES special use unless it finds that all of the following standards are met:

- A. The general special use standards contained in Article XVI of this Ordinance; and
- B. The UGWES will not pose a safety hazard or unreasonable risk of harm to the occupants of any surrounding properties or area wildlife.

Subsection 411.10 Conditions and Modifications.

Any conditions or modifications approved by the Planning Commission shall be recorded in the minutes of the appropriate Planning Commission meeting. The Planning Commission may in addition to other reasonable conditions, require landscaping, walls, fences, and other improvements that are reasonable in relation to and consistent with the nature of the AG Agricultural District. After approval, at least two (2) copies of the final approved Site Plans shall be signed and dated by the Chairman of the Planning Commission and the authorized representative of the Applicant. One copy shall be kept on file by the Township Clerk, and one copy shall be returned to the applicant's authorized representative. A paper copy and digital version of as-built plans shall be submitted to the Township within four (4) months upon completion of the UGWES

Subsection 411.11 Completion; Testing.

The applicant shall complete the UGWES construction within twenty-four (24) months after commencement of construction. Within 12 months of completion and commencement of operation, the applicant shall be required to present a report prepared by a third party, qualified professional, demonstrating that the UGWES while in operation meets the requirements of this Ordinance and the permit for special use with respect to noise emissions and electromagnetic interference, and shadow flicker effect.

Subsection 411.12 Inspection.

The Township shall have the right upon issuing any UGWES special use permit to inspect the premises on which each UGWES is located at any reasonable time. The Township may hire a consultant to assist with any such inspections at the applicant's reasonable cost.

Subsection 411.13 Maintenance and Repair.

Each UGWES must be kept and maintained in good repair and condition at all times. If the Township Zoning Administrator determines that a UGWES fails at any time to meet the requirements of this Ordinance or the special use permit with respect to noise emissions, electromagnetic interference, or shadow flicker effect, or that it poses a potential safety hazard, the applicant shall shut down the UGWES within five (5) days after notice by the Zoning Administrator and not restart the UGWES until the condition has been corrected. The applicant shall keep a maintenance log on each UGWES, which shall be available for the Township's review upon request. The applicant shall keep all sites within the Wind Development Project Area neat, clean, and free of refuse, waste, or unsightly, hazardous, or unsanitary conditions.

Subsection 411.14 Roads.

Any material damages to a public road located within the Township resulting from the construction, maintenance, or operation of a UGWES shall be repaired at the applicant's expense. In addition, the applicant shall submit to the Saginaw County Road Commission a description of the routes to be used by construction and delivery vehicles; any road improvements that will be necessary to accommodate construction vehicles, equipment, or other deliveries; and a performance guarantee acceptable to the Road Commission in an amount necessary to assure repair of any damage to the public roads cause by construction of the UGWES or any of its elements.

Subsection 411.15 Complaint Resolution.

The applicant shall develop a process to resolve complaints from nearby residents and property owners concerning the construction and operation of the UGWES. The process may use an independent mediator or arbitrator and shall include a time limit for acting on a complaint. The process shall not preclude the Township from acting on a complaint. During construction and operation, the applicant shall maintain a telephone number during business hours where nearby residents and landowners can reach a project representative.

Subsection 411.16 Abandonment.

Any UGWES that is not used for the production of 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, unless the applicant receives a written extension of that period from the Township Planning Commission in a case involving an extended repair schedule for good cause. All above and below ground materials (down to 4 feet below the ground) must be removed. The ground must be restored to its original condition within 180 days of abandonment.

Subsection 411.17 Continuing Security and Decommissioning.

If any UGWES is approved for construction under this Ordinance, the applicant shall be required to post continuing security and a continuing escrow deposit prior to commencement of construction, which shall remain in effect until the UGWES has been finally removed, as provided below:

- A. Continuing Security: If a special use is approved pursuant to this section, the Planning Commission shall require security in the form of a cash deposit, irrevocable letter of credit, corporate bond or surety bond in a form, amount, time and duration deemed acceptable to the Township, which will be furnished by the applicant to the Township in order to ensure full compliance with this section and any conditions of approval. When determining the amount of such required security, the Township may also require an annual escalator or increase based on the Consumer Price Index (or the equivalent or its successor). Such financial guarantee shall be deposited or filed with the Township Clerk after a special use has been approved but before construction commences upon a UGWES within the Wind Development Project Area. At a minimum, the financial security shall be in an amount determined by the Township to be reasonably sufficient to have each UGWES fully removed (and all components properly disposed of and the land returned to its original state) should such structure or structures become abandoned, dangerous or obsolete, or not in compliance with this ordinance or the special use permit. Such financial security shall be kept in full force and effect during the entire time while a UGWES exists or is in place, and such financial security shall be irrevocable and non-cancelable (except by the written consent of both the Township and the then-owner of the UGWES).

- B. Continuing Escrow Deposit: A continuing escrow deposit to be held by the Township shall be funded in cash by the applicant prior to the commencement of construction of any UGWES and shall be maintained by the UGWES owner until the UGWES has been permanently removed. The monetary amount placed by the applicant in escrow with the Township shall be estimated by the Township to cover all reasonable costs and expenses associated with continuing enforcement of this Ordinance and the terms of the special use permit, which costs can include, but are not limited to, reasonable fees of the Township Attorney, Township Planner and Township Engineer, as well as costs for any reports or studies which the Township anticipates it may have done that are reasonably related to enforcement of the Ordinance and the special use permit. If the Township is required to expend any portion of the escrow deposit, or if the existing escrow amount paid by the applicant proves to be insufficient to cover the Township's enforcement costs, the Township may require that the UGWES owner place additional monies into escrow with the Township. Alternatively, if lawful, applicant will pay permit fees equivalent to estimate of all reasonable costs and expenses associated with continuing enforcement of this Ordinance and the terms of the special use permit, which costs can include, but are not limited to, reasonable fees of the Township Attorney, Township Planner and Township Engineer, as well as costs for any reports or studies which the Township anticipates it may have done that are reasonably related to enforcement of the Ordinance and the special use permit. As for the escrow requirement, this permit fees will also include a replenishment

obligation if the permit fees paid by the applicant prove to be insufficient to cover the Township's enforcement fees, costs and expenses.

- C. Continuing Obligations: Failure to keep such financial security and escrow deposit in full force and effect at all times while a UGWES exists or is in place shall constitute a material and significant violation of a special use and this ordinance, and will subject the UGWES owner to all remedies available to the Township, including possible enforcement action and revocation of the special use.

Subsection 411.18 Liability.

The applicant shall insure each UGWES at all times, and shall maintain such insurance on its own behalf and on behalf of the Township as a co-insured, with limits of liability not less than \$2,000,000 per occurrence for damages to persons and property (to be adjusted annually to an amount equivalent to 2013 dollars based on the CPI).

Subsection 411.19 Colors.

A UGWES shall be painted a non-obtrusive (light environmental color such as beige or gray) color that is non-reflective. The UGWES base and blades shall be of a color consistent with all other UGWES in the area. No lettering, company insignia, advertising, or graphics shall be on any part of the tower, hub, or blades.

Subsection 411.20 Shadow Flicker.

All reasonable efforts shall be made not to affect any resident with any shadow flicker of 30 hours or more annually in the operation of any UGWES.

Subsection 411.22 Stray Voltage.

The applicant shall be responsible for compensation for damages due to any stray voltage caused by a UGWES in accordance with the rules of the Michigan Public Service Commission.

Subsection 411.24 Application Escrow Account.

An escrow account shall be funded by the applicant when the applicant applies for a special use for a UGWES. The monetary amount placed by the applicant in escrow with the Township shall be estimated by the Township to cover all reasonable costs and expenses associated with the special use review and approval process, which costs can include, but are not limited to, reasonable fees of the Township Attorney, Township Planner and Township Engineer, as well as costs for any reports or studies which the Township anticipates it may have done that are reasonably related to the zoning review process for the particular application. Such escrow amount shall be in addition to any filing or application fees established by resolution. At any point during the special use review process, the Township may require that the applicant place additional monies into escrow with the Township should the existing escrow amount filed by the applicant prove insufficient. If the escrow account needs replenishing and the applicant refuses to do so promptly, the special use

review and approval process shall cease until and unless the applicant makes the required escrow deposit. Any applicable zoning escrow resolutions or other ordinances adopted by the Township shall also be applicable. Alternatively, if lawful, applicant will pay permit fees equivalent to estimate of all reasonable costs and expenses associated with continuing enforcement of this Ordinance and the terms of the special use permit, which costs can include, but are not limited to, reasonable fees of the Township Attorney, Township Planner and Township Engineer, as well as costs for any reports or studies which the Township anticipates it may have done that are reasonably related to enforcement of the Ordinance and the special use permit. As with the escrow requirement, this permit fee will also include a replenishment obligation if the amount of the fee proves not to be sufficient to cover the Township's fees, costs and expenses.

Subsection 411.25 Reasonable conditions.

In addition to the requirements of this section, the Planning Commission may impose additional reasonable conditions on the approval of a UGWES as a special use.

Subsection 411.26 Other Requirements.

Each Wind Development Project Area and UGWES shall also comply with all applicable federal, state, and county requirements, in addition to other Township ordinances.