

**WATSON TOWNSHIP**  
**ORDINANCE NO. \_\_**  
**AMENDMENT TO THE WATSON TOWNSHIP ZONING ORDINANCE**  
**ADOPTED: \_\_\_\_\_**  
**EFFECTIVE: \_\_\_\_\_**

AN ORDINANCE TO AMEND THE WATSON TOWNSHIP ZONING ORDINANCE FOR THE PURPOSES OF ADDING ZONING PROVISIONS REGULATING THE LOCATION AND OPERATION OF WIND ENERGY SYSTEMS AND SOLAR PANELS AND TO MAKE VARIOUS OTHER RELATED CHANGES:

**WATSON TOWNSHIP, ALLEGAN COUNTY, MICHIGAN ORDAINS:**

At a regular meeting of the Township Board for the Township of Watson, Allegan County, Michigan, held at the Township Offices on \_\_\_\_\_, 20\_\_\_\_, the following amending ordinance to the Watson Township Zoning ordinance was offered for adoption by Township Board Member \_\_\_\_\_ and was seconded by Township Board Member \_\_\_\_\_:

***ARTICLE I.***

***ADDITION OF NEW CHAPTER 21B WIND ENERGY AND SOLAR ENERGY SYSTEMS.***

*Chapter 21B “WIND ENERGY AND SOLAR ENERGY SYSTEMS” is added to the Watson Township Zoning Ordinance to establish standards and procedures by which the installation and operation of wind energy and solar energy systems will be regulated within the Township. Chapter 21B shall be added in its entirety as follows:*

**CHAPTER 21B**

**WIND ENERGY AND  
SOLAR ENERGY SYSTEMS**

**Wind Energy Systems – Sec. 21B.03 through Sec. 21B.05  
Solar Energy Collection Systems-Sec. 21B.06**

**SECTION 21B.01 INTENT AND PURPOSE.** The purpose of this section is to establish standards and procedures by which the installation and operation of a Wind Energy System (WES) and Solar Energy Systems (solar panels) shall be regulated within the Township and to:

- (a) Promote the safe, effective and efficient use of WES and solar panels in order to reduce the consumption of fossil fuels in producing electricity.

- (b) Preserve and protect health, safety welfare and quality of life by minimizing the potential adverse impacts of WES and solar panels.
- (c) Establish standards and procedures by which the siting, design, engineering, installation, operation and maintenance of a WES or Solar Energy System shall be governed.

**SECTION 21B.02 DEFINITIONS.** The following terms and their definitions pertain to the regulation of wind energy systems.

- (a) Anemometer. A wind speed indicator constructed for the purpose of analyzing the potential for utilizing a wind energy turbine at a given site. This includes the tower, base plate, anchors, cables and hardware, wind direction vanes, booms to hold equipment, data logger, instrument wiring, and any telemetry devices, that are used to monitor or transmit wind speed and characterize the wind resource at a given location.
- (b) Applicant. The person, firm, corporation, company, limited liability corporation or other entity which applies for Township approval under this section, as well as the applicant's successor(s), assign(s) and/or transferee(s) to any approved Wind Energy System (WES). An applicant must have the legal authority to represent and bind the landowner(s) or lessee(s) who will construct, own and operate the WES. The obligations regarding a zoning approval for any approved WES shall be jointly and severally with the land owner(s), the owner(s) of the WES and the operator or lessee of the WES if different than the owner.
- (c) Building Mounted Wind Energy System (WES). A WES mounted or attached to an existing structure or building.
- (d) Cooperative Wind Energy System Site. A WES site created with the mutual consent of two or more adjacent property owners, comprised of an easement encompassing all or portions of two or more adjacent lots or parcels. A cooperative WES site meeting the standards of this section may support an on site WES or a WES for commercial purposes.
- (e) Nacelle. In a wind turbine, the nacelle refers to the structure which houses all of the generating components, gearbox, drive train and other components.
- (f) On Site Use Wind Energy System. A Wind Energy System (WES) with a main purpose of providing energy to the property where the WES structure is located, or to adjacent properties under the same ownership or control as the property where the structure is located, or by the mutual consent of adjacent property owners.
- (g) Shadow Flicker. Alternating changes in light intensity caused by the moving blade of a WES casting shadows on the ground and stationary objects such as dwellings.
- (h) Single Wind Energy System (SWES) for Commercial Purposes. A SWES placed upon a lot or parcel with the main purpose of generating electricity for sale or otherwise, to a site or location other than the premises upon which the WES is located. The WES may or may not be owned by the owner of the property upon which the WES is placed.
- (i) Solar Energy Systems. An energy system which converts solar energy to usable thermal mechanical chemical or electrical energy to meet all or a significant part of a building's energy requirements.
- (j) Solar Energy Equipment. Items including but not limited to solar panels, lines, pumps, batteries, mounting brackets framing, around foundations used for or intended to be used

for the collection of solar energy in connection with a building on residential, municipal or commercial properties.

- (k) Tower Mounted Wind Energy System. A WES mounted or attached to a tower, pole or similar structure which is not a building.
- (l) Utility Grid Energy Systems. A WES or SWES interconnected with the electricity distribution system.
- (m) Wind Energy System (WES). Wind Energy System (WES) shall mean any combination of the following: (Note: For purposes of this section a windmill traditionally used to pump water shall not be considered a Wind Energy System.)
  - (1) A mill or machine operated by wind acting on oblique vanes or sails that radiate from a horizontal shaft;
  - (2) A surface area such as a blade, rotor or similar device, either variable or fixed, for utilizing the wind for electrical or mechanical power;
  - (3) 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;
  - (4) The generator, alternator or other device to convert the mechanical energy of the surface area into electrical energy; and any temporary anemometer constructed for the purpose of analyzing the potential for utilizing a wind energy turbine at a given site prior to the installation of a wind energy turbine.
  - (5) The tower, pylon, or other structure upon which any, all, or some combination of the above are mounted;
- (n) WES Height. The distance from the ground at normal grade and the highest point of the WES which is the tip of a rotor blade when the blade is in full vertical position.
- (o) WES Setback. The distance from the base of the tower or structure upon which the WES is mounted to the nearest lot line. In the case of multiple parcels utilized for multiple or single WES, the setbacks shall be taken from the outside boundary of the parcels utilized for the WES project.
- (p) Wind Farm. Clusters of two or more WES placed upon a parcel or parcels with a purpose of generating electricity to a site or location other than the premises upon which the WES are located. The WES may or may not be owned by the owner of the property upon which the WES is placed.

### **SECTION 21B.03 WIND ENERGY SYSTEMS ALLOWED AS A PERMITTED USE**

Any On Site Use Wind Energy System which is 65 feet or less in total height shall be a permitted use in all zoning districts subject to the following standards and those of Section 21B.05 of this Chapter:

- (a) Maximum WES height. The height of the WES with the blade in vertical position shall not exceed 65 feet.
- (b) Tower mounted WES setbacks. A tower mounted WES shall be set back from all lot lines, or (in the case of a cooperative WES site) all cooperative WES site easement lines a distance which is at least equal to the height of the WES as measured from the lot line

or easement line to the base of the tower. No portion of the WES, including the guy wire anchors, shall be located within or above the required front, side or rear yard setback.

- (c) Building mounted WES setbacks. A building mounted WES shall have a distance from the nearest property line which is at least equal to the height of the WES as measured from the point of attachment to the building to the top of the WES with the blade in the vertical position. The blade arcs created by a WES mounted on an existing structure shall have a minimum clearance of eight feet or be designed so the blade or other moving parts do not present a safety hazard.
- (d) Noise: Noise emanating from the operation of a WES shall not exceed, 55 dB (A) at the property line closest to the WES between the hours of 9:00 p.m. and 9:00 a.m. at any property line of a residential or agricultural use parcel or from the property line of parks, schools, hospitals and churches. This sound pressure level may be exceeded during short-term events such as severe wind storms and if the ambient sound pressure level between the hours of 9:00 p.m. and 9:00 a.m. is shown to exceeds 55 dB (A), the standard shall be the demonstrated ambient dB (A) plus 5 dB (A).
- (e) Shared WES Usage. An On Site Use WES may provide electrical power to more than one dwelling unit or user, provided the dwelling units or users are located on property or properties that are adjacent to the property or properties on which the WES is located.
- (f) Construction permit required. A permit shall be required to be obtained from the Township to construct or install any WES, 65 feet or less in total height. The WES shall not be constructed nor remain on the property unless such permit has been issued. A copy of the manufacturer's installation instructions and blueprints shall be provided to the Township as part of the permit application.
- (g) Operating permit required. Prior to commencement of operations the applicant shall submit to the Township an application to commence WES operations. "As built" land survey documentation showing the exact location of all WES towers and appurtenances, the depths and locations of all underground electric lines and all applicable easements and property lines shall be Included in the operating permit application. A permit to operate a WES shall be issued after an inspection of the WES by the Township Zoning Administrator and where the inspection finds that the WES complies with the requirements of this Section, all applicable state construction and electrical codes, local building permit requirements and all manufacturers' installation instructions.
- (h) Decommissioning and Removal Required. The applicant shall certify and provide the Township with written assurance that the WES shall not be abandoned in place and shall be removed within one (1) year of decommissioning.

**SECTION 21B.04 WIND ENERGY SYSTEMS WHICH REQUIRE A SPECIAL LAND USE PERMIT.** A WES including any structure mounted WES and any temporary wind turbine test tower which is greater than 65 feet in height may be allowed as a special land use in any zoning district provided that the lot, parcel or "cooperative WES site" contains at least 1 acre of total land area and a shape capable of encompassing within its boundaries, a circle with a minimum diameter of 135 feet. Any WES eligible for special use consideration shall be further subject to the following regulations, the requirements of Section 21B.05 and the procedures and general standards for special land uses contained in Chapter 12 of this Zoning Ordinance:

- (a) Site Plan Requirements. Applications for a WES special land use permit shall be accompanied by a detailed site plan map that is drawn to scale and dimensioned, displaying the following information unless such information is in whole or in part deemed unnecessary by the reviewing authority based on the conditions peculiar to the specific property involved:
- (1) A legal survey showing the location and dimensions of the area owned, purchased, leased and/or dedicated by easement which is to contain the WES.
  - (2) Existing property features to include the following: land use, zoning district, contours, setback lines, right-of-ways, public and utility easements, public roads, access roads (including width), sidewalks, non-motorized pathways, trees within the fall radius of the WES structure, and all buildings. The site plan must also include the adjoining properties as well as the location and use of all structures and utilities within three hundred (300) feet of the property.
  - (3) Location and height of all proposed WES structures, buildings, ancillary equipment, underground utilities and their depth, towers, security fencing, access roads (including width, composition and maintenance plans), electrical substations, and other above-ground structures and utilities associated with the proposed WES.
  - (4) Additional details and information as required by the Special Use requirements of the Zoning Ordinance or as requested by the Planning Commission.
- (b) Height. The height of a WES for which a Special Use is required shall be determined by compliance with the requirements of this Section.
- (1) Setbacks.
    - a. From Agricultural and Residential Zoned Districts and property: The setback for the base of a WES tower from any public or private street right of way, or any adjacent agricultural or residential zoned or used lot or parcel shall be at least 1.25 the height of the WES. Any other part of a WES, including guy wire anchors, shall adhere to the minimum front, side, or rear yard setback requirements for principal buildings as required for the zoning district in which the WES is located.
    - b. Setbacks from Commercial and Industrial zoned Districts and Property: Except for setbacks from the public or private street, the setback for a WES from any adjacent lot or parcel zoned or used for Commercial or Industrial purposes shall be the greater distance of either fifteen (15) feet or the required front, side or rear yard setback for principal buildings as required for the zoning district in which the WES is located. In addition, there shall be signed analysis and certification by a state licensed professional engineer describing the manner in which the WES structure will fall or fail. The certified analysis will be utilized, along with other applicable zoning regulations, in determining the appropriate setback to be required for the WES. The setback for the base of a WES tower from any public or private street right of way shall be at least 1.25 the height of the WES

- (2) Rotor or Blade Clearance. Blade arcs created by a tower mounted WES shall have a minimum of 30 feet of clearance over and from any structure, adjoining property or tree.
- (3) Lighting. A WES shall provide lighting as may be required by the FAA.
- (4) Maintenance Program Required. The applicant shall provide a written description of the maintenance program to be used to maintain the WES, including a maintenance schedule of types of maintenance tasks to be performed.
- (5) Decommissioning Plan Required. The applicant shall provide a written description of the anticipated life of the system and facility; the estimated cost of decommissioning; the method of ensuring that funds will be available for decommissioning and restoration of the site; and removal and restoration procedures and schedules that will be employed if they become obsolete or abandoned. Full WES removal and site restoration shall be completed within (1) year of decommissioning (ref. Sec. 21B.03 (h)).
- (6) Siting Standards and Visual Impact.
  - a. A WES shall be designed and placed in such a manner to minimize adverse visual and noise impacts on neighboring areas.
  - b. A WES project with more than one WES structure or tower shall utilize similar design, size, color, operation, and appearance throughout the project as is practicable.
- (7) Sound Pressure Level.
  - a. On Site Wind Energy systems shall not exceed 55 dB (A) at the property line closest to the WES. This sound pressure level may be exceeded during short-term events such as severe wind storms. If the ambient sound pressure level exceeds 55 dB (A), the standard shall be ambient dB (A) plus 5 dB (A).
  - b. Utility Grid Systems and Wind Farms shall be subject to the requirements of above but the sound pressure level shall be measured at the property line closest to the WES at the outside boundary of all property used for the Utility Grid System. In addition, the applicant shall provide modeling and analysis that will demonstrate that the Utility Grid System or Wind Farm will not exceed the maximum permitted sound pressure.
- (8) Shadow Flicker. The WES owner(s) and/or operator(s) shall conduct an analysis on potential shadow flicker at any occupied building with direct line-of-sight to the WES. The analysis shall identify the locations of shadow flicker that may be caused by the project and the expected durations of the flicker at these locations from sun-rise to sun-set over the course of a year. The analysis shall identify situations where shadow flicker may affect the occupants of the buildings for more than 30 hours per year, and describe measures that shall be taken to eliminate or mitigate the problems. Shadow Flicker on a building shall not exceed thirty (30) hours per year.
- (9) Operating permit required. Prior to commencement of operations the applicant shall submit to the Township an application to commence WES operations.

Included in the operating permit application shall be a built land survey documentation showing the exact location of all WES towers and appurtenances, the depths and locations of all underground electric lines and all applicable easements and property lines. A permit to operate a WES shall be issued after an inspection of the WES by the Township or an authorized agent of the Township, and where the inspection finds full compliance with this section and any conditions of special use approval, all applicable state construction and electrical codes, local building permit requirements and all manufacturers' installation instructions.

**SECTION 21B.05 STANDARDS FOR ALL WIND ENERGY SYSTEMS.** All WES shall comply with the following:

(a) Construction Codes and Interconnection Standards.

- (1) All applicable state construction and electrical codes and local building permit requirements.
- (2) Federal Aviation Administration requirements.
- (3) The Michigan Airport Zoning Act, Public Act 23 of 1950, as amended.
- (4) The Michigan Tall Structures Act, Public Act 259 of 1959, as amended.
- (5) The Michigan Public Service Commission and Federal Energy Regulatory Commission if the WES is an interconnected system.

(b) Safety.

- (1) Each WES shall be equipped with both a manual and automatic braking device capable of stopping the WES operation in high winds or must otherwise be designed so that the rotational speed of the rotor blade does not exceed the design limits of the rotor.
- (2) To prevent unauthorized access, each WES must comply with at least one of the following provisions, and more than one if required by the Township:
  - a. A locked anti-climb device shall be installed and maintained.
  - c. A tower capable of being climbed shall be enclosed by a locked, protective fence at least ten feet high with barbed wire fence.
- (3) All WES shall have lightning protection.
- (4) If a tower is supported by guy wires, the wires shall be clearly visible to height of at least 10 feet above the guy wire anchors

(c) Signs.

- (1) Each WES shall have one sign minimum of two square feet and a maximum of four square feet posted at the base of the tower, or, if the structure is fenced, on the fence. The sign shall include the following information:
  - a. The words "Warning: High Voltage".
  - b. Emergency phone numbers.

- (2) A WES shall not include any advertising of any kind, except the nacelle may have lettering that exhibits the manufacturer and/or owner's identification.
- (d) Electromagnetic Interference. WES shall be designed, constructed and operated so as not to cause radio and television interference.
- (e) Maintenance. WES must be kept and maintained in good repair and condition at all times and shall not pose a potential safety hazard.
- (f) Electrical Distribution Lines. All distribution lines from the WES shall be located underground, both on the property where the WES will be located and off-site. The Township may waive this requirement for Utility Grid Wind Energy Systems if the Planning Commission determines that installation or maintenance of distribution lines underground would be impractical or unreasonably expensive.
- (g) A WES, except for building mounted WES, may be located on a lawful parcel or parcels, which do not have frontage on a public or private road.
- (h) Insurance. The WES operator shall maintain a current insurance policy which will cover installation and operation of the WES. The proof of insurance shall be a condition of approval.
- (i) Performance Guarantee. If a WES is approved pursuant to this Chapter, the Township may require a security deposit in the form of a surety bond deemed acceptable to the Township. If required, the security will be furnished by the applicant to the Township in order to ensure full compliance with this section and any conditions of approval.
- (j) Public Inquiries and Complaints. Should an aggrieved property owner allege that the WES is not in compliance with the noise or shadow flicker requirements of this Ordinance, the procedure shall be as follows:
- (1) Notify the Township in writing regarding concerns about noise level or Shadow Flicker.
  - (2) If the complaint is deemed sufficient by the Township Zoning Administrator to warrant an investigation, the Zoning Administrator will request the aggrieved property owner deposit funds in an amount sufficient to pay for a noise level or shadow flicker test conducted by a certified technician having the expertise in the appropriate field to determine compliance with the requirements of this Ordinance.
    - a. If the test indicates that the noise or shadow flicker level is within Ordinance requirements, the Township will use the deposit to pay for the test.
    - b. If the WES Owner(s) is in violation of the Ordinance noise or shadow flicker requirements, the Owner(s) shall reimburse the Township for the test and take immediate action to bring the WES or into compliance. This may include ceasing operation of the WES until Ordinance violations are corrected. The Township shall refund the deposit to the aggrieved property owner.



## **SOLAR ENERGY COLLECTION SYSTEMS**

**SECTION 21B.06 SOLAR ENERGY COLLECTION SYSTEMS (Solar Panels)** Solar energy collection systems shall be allowed in all zoning districts either attached to permitted principal or accessory buildings or as accessory structures subject to the following regulations:

- (a) Definitions. For purposes of this section, a solar energy collector (a.k.a. solar panel) is defined as a panel or panels and/or other devices or equipment, or any combination thereof, that collect, store, distribute and/or transform solar, radiant energy into electrical, thermal or chemical energy for the purpose of generating electric power or other form of generated energy for use in or associated with a principal land use on the parcel of land on which the solar energy collector is located and, if permitted, for the sale and distribution of excess available electricity to an authorized public utility for distribution to other lands.
  - (1) A building-mounted solar energy collector is defined as a solar energy collector attached to the roof or wall of a building, or which serves as the roof, wall or window or other element, in whole or in part, of a building.
  - (2) A ground-mounted solar energy collector is defined as a solar energy collector that is not attached to and is separate from any building on the parcel of land on which the solar energy collector is located.
- (b) Exemptions. These provisions shall not apply to the application of energy systems exempted by the “Right to Farm Act”. These provisions shall also not apply to certain remotely located, low wattage (30 watts or less) solar energy systems used to power trickle chargers for batteries used in security or emergency lighting, utility implements, boats and similar applications. This exemption is applicable only if the solar energy panels do not connect to any electric power lines used to power a building and on any lot or premises, the size of the solar panel or panels exempted under this paragraph shall not exceed fifteen (15) square feet in area.
- (c) Construction Permit Required. Solar energy collectors, and the installation and use thereof, shall comply with the Township construction code, the electrical code and other applicable Township construction codes. A permit must be obtained from the Township to construct or install and any Solar Collection System. The system shall not be constructed nor remain on the property unless such permit has been issued. A copy of the manufacturer’s installation instructions and blueprints along with an accurate scaled site sketch illustrating the precise size, location and height of the system relative to buildings and property lines shall be provided to the Township building official as part of the permit application.
- (d) Installation and Operation. Solar energy collectors shall be installed, maintained and used only in accordance with the manufacturer’s directions. Upon request, a copy of such directions shall be submitted to the Township building official prior to the installation. The building official may inspect the completed installation, to verify compliance with the manufacturer’s directions.

(e) Solar Energy Collection Systems Standards-Systems Allowed As Permitted Uses. Any building mounted solar energy collector (regardless of orientation) and any ground mounted solar energy collector not located in the front yard shall be a permitted accessory use in all zone districts. A ground-mounted solar energy collector may be located in the front yard if approved by the Planning Commission (reference paragraph (2)a of this subsection below). Building and ground mounted solar collection systems are subject to the following limitations and requirements:

(1) Building-mounted solar energy collection systems.

a. Solar energy collectors that are mounted on the roof of a building:

(i) shall not project more than five feet above the highest point of the roof but, in any event, shall not exceed the maximum building height limitation for the zone district, and

(ii) shall not project beyond the eave of the roof.

b. Solar energy collectors mounted on the roof of a building shall be only of such weight as can safely be supported by the roof, and proof thereof, in the form of certification by a professional engineer or other qualified person, shall be submitted to the Township building official as part of the construction permit application; such certification shall be subject to the building official's approval.

c. Solar energy collectors that are roof-mounted, wall-mounted or are otherwise attached to a building or structure shall be permanently and safely attached to the building or structure. Proof of the safety and reliability of the means of such attachment shall be submitted to the building official as part of the construction permit application; such proof shall be subject to the building official's approval.

d. Solar energy collectors that are wall-mounted shall not exceed the height of the building wall to which they are attached.

e. The exterior surfaces of solar energy collectors that are mounted on the roof or on wall of a building, or are otherwise attached to a building or structure, shall be generally neutral in color and substantially non-reflective of light.

(2) Ground-mounted solar energy collector systems.

a. Except as further limited in paragraph b. below in respect to waterfront lots, ground-mounted solar energy collectors may be located in the rear yard and the side yard, but shall be located no closer to the property line than the height of the solar energy collector.

b. On any waterfront lot in any zoning district, ground mounted solar energy collectors may only be located within forty (40) feet of the waters' edge if they do not exceed three (3) feet in height.

c. Ground-mounted solar energy collectors may only be located in the front yard after site plan review and approval by the Planning Commission in accordance with the procedures of Chapter 14 and upon a finding that the

view of the energy collectors from the street will be substantially screened by topography and/or vegetation on a year round basis. A special use permit under Chapter 15 is not required.

- d. Ground mounted solar energy collectors shall not exceed 16 feet in height, measured from the ground at the base of such equipment.
- e. In zoning districts where lot or rear yard space coverage is regulated, the total ground coverage area of ground-mounted solar energy collectors shall be included in the calculation of the percentage of maximum permitted coverage for the applicable yard or parcel of land.
- f. Solar energy collectors shall be permanently and safely attached to the ground. Proof of the safety and reliability of the means of such attachment shall be submitted with the construction permit application.
- g. The exterior surfaces of solar energy collectors shall be generally neutral in color and substantially non-reflective of light.

**ARTICLE II.**

**SEVERABILITY**

The various parts, sections and clauses of this Ordinance are hereby declared to be severable. If any part, sentence, paragraph, section or clause of this Ordinance is adjudged unconstitutional or invalid by a court of competent jurisdiction, the remainder of the Ordinance shall not be affected thereby and shall remain valid and in effect.

**ARTICLE III.**

**REPEAL AND EFFECTIVE DATE**

This Ordinance is ordered to take effect eighth day after publication of notice of its adoption in accordance with the Michigan Public Act 110 of 2006 as amended. All ordinances or parts of ordinances in conflict herewith are hereby repealed.

\_\_\_\_\_  
Watson Township  
\_\_\_\_\_, Clerk  
1895 118<sup>th</sup> Ave.  
Allegan, MI 49010-9544  
616-672-7254