

**SOO TOWNSHIP
WIND ENERGY ORDINANCE
ORDINANCE No. 2009-1**

AN ORDINANCE TO REGULATE THE INSTALLATION AND MAINTENANCE OF WIND ENERGY SYSTEMS IN SOO TOWNSHIP, CHIPPEWA COUNTY, MICHIGAN; TO PROVIDE FOR THE APPLICATION AND ISSUANCE OF PERMIT, ESTABLISHING LOCATION AND OTHER REQUIREMENTS FOR INSTALLATION OF WIND ENERGY SYSTEMS.

SOO TOWNSHIP ORDAINS:

Section I Definitions:

ANEMOMETER TOWER means a freestanding tower containing instrumentation such as anemometers that is designed to provide present moment wind data for use by the supervisory control and data acquisition (SCADA) system which is an accessory land use to a UTILITY GRID WIND ENERGY SYSTEM.

AMBIENT means the sound pressure level exceeded 90% of the time or L90 .

ANSI means the American National Standards Institute.

dB(A) means the sound pressure level in decibels. It refers to the “a” weighted scale defined by ANSI. A method for weighting the frequency spectrum to mimic the human ear.

DECIBEL means the unit of measure used to express the magnitude of sound pressure and sound intensity.

IEC means the International Electrotechnical Commission.

ISO means the International Organization for Standardization.

LEASE UNIT BOUNDARY means boundary around property leased for purposes of a Wind Energy System, including adjacent parcels to the parcel on which the Wind Energy System tower or equipment is located. For purposes of setback, the Lease Unit Boundary shall not cross road right-of-ways.

ON SITE WIND ENERGY SYSTEM means a land use for generating electric power from wind and is an accessory use that is intended to primarily serve the needs of the consumer at that site.

ROTOR means an element of a wind energy system that acts as a multi-bladed airfoil assembly, thereby extracting through rotation, kinetic energy directly from the wind.

SHADOW FLICKER means alternating changes in light intensity caused by the moving blade of a wind energy system casting shadows on the ground and stationary objects, such as but not limited to a window at a dwelling.

SOUND PRESSURE means an average rate at which sound energy is transmitted through a unit area in a specified direction. The pressure of the sound measured at a receiver.

SOUND PRESSURE LEVEL means the sound pressure mapped to a logarithmic scale and reported in decibels (dB).

UTILITY GRID WIND ENERGY SYSTEM means a land use for generating power by use of wind at multiple tower locations in a community and includes accessory uses such as, but not limited to, a SCADA TOWER, electric substation.

A UTILITY GRID WIND ENERGY SYSTEM is designed and built to provide electricity to the electric utility grid.

WIND ENERGY SYSTEM means a land use for generating power by use of wind; utilizing use of a wind turbine generator and includes the turbine, blades, and tower as well as related electrical equipment. This does not include wiring to connect the wind energy system to the grid. See also ONSITE WIND ENERGY SYSTEM and UTILITY GRID WIND ENERGY SYSTEM.

WIND SITE ASSESSMENT means an assessment to determine the wind speeds at a specific site and the feasibility of using that site for construction of a wind energy system.

Section II On-site Use Wind Energy Systems and Anemometer Tower

An On-site Use wind energy system is an accessory use which shall meet the following standards:

A. Designed to primarily serve the needs of a home, farm, or small business.

B. Shall have a tower height of 20 meters or less.

C. Property Set-back: The distance between an On-site Use wind energy system and the owner's property lines shall be equal to the height of the wind energy system tower including the top of the blade in its vertical position. The distance between an anemometer tower and the owner's property lines shall be equal to the height of the tower. No part of the wind energy system structure, including guy wire anchors, may extend closer than ten feet to the owner's property lines, or the distance of the required setback in the respective zoning district, whichever results in the greater setback.

D. Sound Pressure Level: On-site Use wind energy systems shall not exceed 55 dB (A) at the property line closest to the wind energy system. This sound pressure level may be exceeded during short term events such as utility outages and/or severe wind storms. If the ambient sound pressure level exceeds 55 dB (A), the standard shall be ambient dB (A) plus 5 dB(A).

E. Construction Codes, Towers, & Interconnection Standards: On-site Use wind energy systems including towers shall comply with all applicable state construction and electrical codes and local building permit requirements. On-site Use wind energy systems including towers shall comply with Federal Aviation Administration requirements, the Michigan Airport Zoning Act (Public Act 23 of 1950, MCL 259.431 *et seq.*), the Michigan Tall Structures Act (Public Act 259 of 1959, MCL 259.481 *et seq.*), and local jurisdiction airport overlay zone regulations. An interconnected On-site Use wind energy system shall comply with Michigan Public Service Commission and Federal Energy Regulatory Commission standards. Off-grid systems are exempt from this requirement.

F. Safety: An On-site Use wind energy system shall have automatic braking, governing, or a feathering system to prevent uncontrolled rotation or over speeding. All wind towers shall have lightning protection. If a tower is supported by guy wires, the wires shall be clearly visible to a height of at least six feet above

the guy wire anchors. The minimum vertical blade tip clearance from grade shall be 20 feet for a wind energy system employing a horizontal axis rotor.

Section III Special Use Standards

Utility Grid Wind Energy System, On-site Use Wind Energy System over 20 meters high, and Anemometer Towers over 20 meters high.

An Utility Grid Wind Energy System, On-site Use Wind Energy System over 20 meters high, and Anemometer Towers over 20 meters high shall meet the following standards:

A. Property Set-Back:

1. Anemometer Tower setback shall be the greater distance of the following:

- a. The setback from the road right-of-way; and
- b. A distance equal to the height of the tower from property lines.

2. Utility Grid and On-site Use Wind Energy System setback shall be greater distance the following:

- a. The setback from the road right-of-way; and
- b. A distance equal to the height of the tower including the top of the blade in its vertical position from property lines

3. An Operations and Maintenance Office building, a sub-station, or ancillary equipment shall comply with any property set-back requirement of the respective zoning district. Overhead transmission lines and power poles shall comply with the pset-back and placement requirements applicable to public utilities.

B. Sound Pressure Level: The sound pressure level shall not exceed 55 dB (A) measured at the property lines or the lease unit boundary, whichever is farther from the source of the noise. This sound pressure level shall not be exceeded for more than three minutes in any hour of the day. If the ambient sound pressure level exceeds 55 dB (A), the standard shall be ambient dB (A) plus 5 dB (A).

C. Safety: Shall be designed to prevent unauthorized access to electrical and mechanical components and shall have access doors that are kept securely locked at all times when service personnel are not present. All spent lubricants and cooling fluids shall be properly and safely removed in a timely manner from the site of the wind energy system. A sign shall be posted near the tower or Operations and Maintenance Office building that will contain emergency contact information. Signage placed at the road access shall be used to warn visitors about the potential danger of falling ice. The minimum vertical blade tip clearance from grade shall be 20 feet for a wind energy system employing a horizontal axis rotor.

D. Post- Construction Permits: Construction Codes, Towers, and Interconnection Standards: Shall comply with all applicable state construction and electrical codes and local building permit requirements.

E. Pre-Application Permits:

1. Utility Infrastructure: Shall comply with Federal Aviation Administration (FAA) requirements, the Michigan Airport Zoning Act (Public Act 23of 1950 as amended, M.C.L. 259.431 *et seq.*), the Michigan Tall Structures Act (Public Act 259 of 1959 as amended, M.C.L. 259.481 *et seq.*), and local jurisdiction airport overlay zone regulations. The minimum FAA lighting standards shall not be exceeded. All tower lighting required by the FAA shall be shielded to the extent possible to reduce glare and visibility from the ground. The tower shaft shall not be illuminated unless required by the FAA. Utility Grid wind energy systems shall comply with applicable utility, Michigan Public Service Commission, and Federal Energy Regulatory Commission interconnection standards.

2. Environment:

a. The site plan and other documents and drawings shall show mitigation measures to minimize potential impacts on the natural environment including, but not limited to wetlands and other fragile ecosystems, historical and cultural sites, and antiquities, as identified in the Environmental Analysis.

b. Comply with applicable parts of the Michigan Natural Resources and Environmental Protection Act (Act 451 of 1994, M.C.L. 324.101 *et seq.*) (including but not limited to: i. Part 31 Water Resources Protection (M.C.L. 324.3101 *et seq.*), ii. Part 91 Soil Erosion and Sedimentation Control (M.C.L. 324.9101 *et seq.*), iii. Part 301 Inland Lakes and Streams (M.C.L. 324.30101 *et seq.*), iv. Part 303 Wetlands (M.C.L. 324.30301 *et seq.*), v. Part 323 Shore land Protection and Management (M.C.L. 324.32301 *et seq.*), vi. Part 325 Great Lakes Submerged Lands (M.C.L. 324.32501 *et seq.*), and vii. Part 353 Sand Dunes Protection and Management (M.C.L. 324.35301 *et seq.*)) as shown by having obtained each respective permit with requirements and limitations of those permits reflected on the site plan.

F. Performance Security: Performance Security shall be provided for the applicant making repairs to public roads damaged by the construction of the wind energy system.

G. Utilities: Power lines should be placed underground, when feasible, to prevent avian collisions and electrocutions. All above ground lines, transformers, or conductors should comply with the Avian Power Line Interaction Committee (APLIC, <http://www.aplic.org/>) published standards to prevent avian mortality.

H. The following standards apply only to Utility Grid Wind Energy Systems:

1. Visual Impact: Utility Grid wind energy system projects shall use tubular towers and all Utility Grid wind energy systems in a project shall be finished in a single, non reflective matte finished color. A project shall be constructed using wind energy systems of similar design, size, operation, and appearance throughout the project. No lettering, company insignia, advertising, or graphics shall be on any part of the tower, hub, or blades. Nacelles may have lettering that exhibits the manufacturer's and/or owner's identification. The applicant shall avoid state or federal scenic areas and significant visual resources listed in the local unit of government's Plan.

2. Avian and Wildlife Impact: Site plan and other documents and drawings shall show mitigation measures to minimize potential impacts on avian and wildlife, as identified in the Avian and Wildlife Impact analysis.

3. Shadow Flicker: Site plan and other documents and drawings shall show mitigation measures to minimize potential impacts from shadow flicker, as identified in the Shadow Flicker Impact Analysis.

4. Decommissioning: A planning commission approved decommissioning plan indicating 1) the anticipated life of the project, 2) the estimated decommissioning costs net of salvage value in current dollars, 3) the method of ensuring that funds will be available for decommissioning and restoration, and 4) the anticipated manner in which the project will be decommissioned and the site restored.

5. Complaint Resolution: A planning commission approved process to resolve complaints from nearby residents concerning the construction or operation of the project.

6. Electromagnetic Interference: No Utility Grid wind energy system shall be installed in any location where its proximity to existing fixed broadcast, retransmission, or reception antennae for radio, television, or wireless phone or other personal communication systems would produce electromagnetic interference with signal transmission or reception unless the applicant provides a replacement signal to the affected party that will restore reception to at least the level present before operation of the wind energy system. No Utility Grid wind energy system shall be installed in any location within the line of sight of an existing microwave communications link where operation of the wind energy system is likely to produce electromagnetic interference in the link's operation unless the interference is insignificant.

Section IV Site Plan Review

Site Plans for Anemometer Tower, Utility Grid Wind Energy System, and On-site Use Wind Energy System.

In addition to the requirements for a site plan, site plans and supporting documents for Anemometer Tower, Utility Grid Wind Energy System, and On-site Use Wind Energy Systems which are over 20 meters high shall include the following additional information:

A. Documentation that sound pressure level, construction code, tower, interconnection (if applicable), and safety requirements have been reviewed and the submitted site plan is prepared to show compliance with these issues.

B. Proof of the applicant's public liability insurance for the project.

C. A copy of that portion of all the applicant's lease(s) with the land owner(s) granting authority to install the Anemometer Tower and/or Utility Grid Wind Energy System; legal description of the property(ies), Lease Unit(s); and the site plan shows the boundaries of the leases as well as the boundaries of the Lease Unit Boundary.

D. The phases, or parts of construction, with a construction schedule.

E. The project area boundaries.

F. The location, height, and dimensions of all existing and proposed structures and fencing.

G. The location, grades, and dimensions of all temporary and permanent on-site and access roads from the nearest county or state maintained road.

H. All new infrastructure above ground related to the project.

I. A copy of Manufacturers' Material Safety Data Sheet(s) which shall include the type and quantity of all materials used in the operation of all equipment including, but not limited to, all lubricants and coolants.

J. For Utility Grid Wind Energy Systems only:

1. A copy of a noise modeling and analysis report and the site plan shall show locations of equipment identified as a source of noise which is placed, based on the analysis, so that the wind energy system will not exceed the maximum permitted sound pressure levels. The noise modeling and analysis shall conform to IEC 61400 and ISO 9613. After installation of the Utility Grid wind energy system, 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 60 days of the commercial operation of the project.

2. A visual impact simulation showing the completed site as proposed on the submitted site plan. The visual impact simulation shall be from four viewable angles.

3. A copy of an Environment Analysis by a third party qualified professional to identify and assess any potential impacts on the natural environment including, but not limited to, wetlands and other fragile ecosystems, historical and cultural sites, and antiquities. The applicant shall take appropriate measures to minimize, eliminate or mitigate adverse impacts identified in the analysis, and shall show those measures on the site plan. The applicant shall identify and evaluate the significance of any net effects or concerns that will remain after mitigation efforts.

4. A copy of an Avian and Wildlife Impact Analysis by a third party qualified professional to identify and assess any potential impacts on wildlife and endangered species. The applicant shall take appropriate measures to minimize, eliminate or mitigate adverse impacts identified in the analysis, and shall show those measures on the site plan. The applicant shall identify and evaluate the significance of any net effects or concerns that will remain after mitigation efforts. (Sites requiring special scrutiny include wildlife refuges, other areas where birds are highly concentrated, bat hibernacula, wooded ridge tops that attract wildlife, sites that are frequented by federally and/or state listed endangered species of birds and bats, significant bird migration pathways, and areas that have landscape features known to attract large numbers of raptor.) (At a minimum, the analysis shall include a thorough review of existing information regarding species and potential habitats in the vicinity of the project area. Where appropriate, surveys for bats, raptors, and general avian use should be conducted. The analysis shall include the potential effects on species listed under the federal Endangered Species Act and Michigan's Endangered Species Protection Law.) (The analysis shall indicate whether a post construction wildlife mortality study will be conducted and, if not, the reasons why such a study does not need to be conducted.)

5. A copy of a shadow flicker analysis at occupied structures to identify the locations of shadow flicker that may be caused by the project and the expected durations of the flicker at these locations from sun-rise to sun-set over the course of a year. The site plan shall identify problem areas where shadow flicker may affect the occupants of the structures and show measures that shall be taken to eliminate or mitigate the problems.

6. A second site plan, which shows the restoration plan for the site after completion of the project which includes the following supporting documentation:

- a. The anticipated life of the project.
- b. The estimated decommissioning costs net of salvage value in current dollars.
- c. The method of ensuring that funds will be available for decommissioning and restoration.
- d. The anticipated manner in which the project will be decommissioned and the site restored.

7. A description of the complaint resolution process developed by the applicant to resolve complaints from nearby residents concerning the construction or operation of the project. 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 local government from acting on a complaint. During construction the applicant shall maintain and make available to nearby residents a telephone number where a project representative can be reached during normal business hours.

ORDINANCE CERTIFICATION

At a regular meeting of the Soo Township Board, Chippewa County, held in Soo Township Hall, located at 639 Three and one-half Mile Road, Sault Ste. Marie, Michigan on June 10, 2009, at 7:30 p.m.

PRESENT; Jim Callon, Harold Osborn, Larry Perron, Cheryl Thoresen, Andree Watson
ABSENT: None

It was moved by Jim Callon and supported by Harold Osborn that the Wind Energy Ordinance #2009-1 be adopted:

YES: Harold Osborn, Cheryl Thoresen, Larry Perron, Andree Watson, Jim Callon
NO: None

ORDINANCE DECLARED ADOPTED SOO TOWNSHIP

By: _____
Larry Perron, Supervisor

I, the undersigned, the clerk of the Township of Soo, Chippewa County, Michigan, do hereby certify that the foregoing is a true complete copy of certain proceedings taken by the Soo Township Board of said County at its regular meeting held on June 10, 2009, relative to adoption of the ordinance therein set forth; that said meeting was conducted and public notice of said meeting was given pursuant to and in full compliance with the Open Meetings Act, being 267, Public Acts of Michigan, 1976 and that the minutes of the meeting were kept and will be made available as required by said act; this ordinance was published in the Evening News on Wednesday, June 17, 2009 and filed with the County Clerk on July 27, 2009.

Dated: _____

Andree Watson, Soo Township Clerk