SECTION 12 — WINDPOWER MANAGEMENT
ADOPTED: FEBRUARY 15, 2005

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SECTION 12 — WINDPOWER MANAGEMENT ADOPTED FEBRUARY 15, 2005

12.1. Subdivision 1 — Purpose

Wind energy is a resource that is gaining the interest of farmers, business owners, utility companies, and other rural residents in Minnesota. It is a resource that is attractive for its economic benefits and its minimal impact on the environment when compared to other sources of electric power. Areas in Minnesota, such as the "Buffalo Ridge" in Lincoln, Pipestone, and Murray Counties, saw the construction of large facilities to convert wind energy to power in the mid-1990's. Smaller facilities have been constructed in other areas of the state, such as Dodge and Freeborn Counties.

The purpose of this section is to set forth a process for permitting wind energy facilities within Chippewa County.

Wind energy conversion systems (WECS) that are under five (5) megawatts are not regulated by the state. A site permit from the Environmental Quality Board (EQB) is required to construct a large WECS. A large WECS is a combination of wind turbines and associated facilities with the capacity to generate five (5) megawatts or more of electricity. A mandatory Environmental Assessment Worksheet (EAW) is required for electric power generating plants and associated facilities that are designed for or capable of operating at a capacity of 25 megawatts or more.

Noise from the operation of wind turbines can be caused by a number of things including: the interaction of the blade with the atmosphere and turbulence, the mechanical components such as gears meshing, and the interaction of blades with disturbed air flow around the tower of downwind machines. According to the handbook, Permitting of Wind Energy Facilities, modern turbines are quiet and generate noise levels "no higher than those of a moderately quiet room at distances of 750 to 1,000 feet."

Collisions between birds and wind turbines have been a controversial aspect of the siting of wind farms. According to the handbook, Permitting of Wind Energy Facilities, the impact of wind turbines on bird fatalities is relatively minor. It is estimated that 33,000 birds are killed annually by wind turbines. Based on an estimate of 15,000 wind turbines being operated in the U.S., 2.2 birds are killed per turbine each year.

Minnesota Statute Chapter 394.21 gives counties the authority to regulate land development by adopting and amending official land use controls.

Standards for the location, construction, and operation of wind energy conversion systems are necessary to protect the public health, safety, and general welfare.

12.2. Subdivision 2 — Definitions

12.2.1. Wind Energy Conversion System (WECS): A device such as a wind charger, windmill, or wind turbine and associated facilities that converts wind energy to electric energy.

12.2.2. Commercial Wind Energy Conversion System: A WECS or combination of WECS that is designed to have a capacity in excess of the amount needed for residential and agricultural uses and that has a combined nameplate capacity of 125 KW or more.

12.2.3. Non-Commercial Wind Energy Conversion System: A WECS or combination of WECS that is designed to have a capacity for residential and agricultural uses and has a combined nameplate capacity of less than 125 KW.

12.3. Subdivision 3 — Permit Applications

12.3.1. All proposed wind energy facilities must fill out a land use permit and a conditional use permit application provided by Chippewa County Land and Resource Management.

12.4. Subdivision 4 — Compliance with Codes and Standards

12.4.1. All wind turbines shall be in compliance with all applicable state and federal regulatory standards, including:

12.4.1.1. Uniform Building Code as adopted by the State of Minnesota;

12.4.1.2. The National Electrical Code as adopted by the State of Minnesota;

12.4.1.3. Federal Aviation Administration (FAA) requirements;

12.4.1.4. Minnesota Pollution Control Agency (MPCA) / Environmental Protection Agency (EPA) regulation (hazardous waste, construction, storm water, etc.).

12.5 Subdivision 5 — Certifications

12.5.1. Equipment shall conform to applicable industry standards, including the American Wind Energy Association standard for wind turbine design and related standards adopted by the American Standards Institute (ANSI). It would be appropriate to require that the equipment manufacturer certify that the equipment is manufactured in compliance with industry standards.

12.5.2. Special attention shall be paid to all turbines that are experimental, used, or prototype devices. Maintenance record, inspection by qualified wind energy professionals, or some other documentation of unit's integrity may be requested.

12.5.3. A professional engineer registered in the State of Minnesota shall certify that the tower and foundation are compatible with and appropriate for the turbine to be installed and that the specific soils at the site can support the apparatus.

12.6. Subdivision 6 — Overspeed Controls

12.6.1. All turbines to be installed shall be equipped with redundant braking systems. This includes both aerodynamic (including variable pitch) overspeed controls and mechanical brakes. Mechanical brakes shall be operated in a fail-safe mode, whereby they are engaged in the case of load loss on the generator. Stall regulation shall not be considered a sufficient braking system for overspeed protection.

12.7. Subdivision 7 — Setback Requirements

12.7.1.

Object	Setback Over 100 KW	Setback Under 100 KW
Residence (Other than applicant's residence)	750 feet	300 feet
Project Boundary	5 rotor diameters	5 rotor diameters
Public Roads (from right-of-way)	300 feet	1 times height (maximum)
Other Structures	1.25 times height	1.25 times height (maximum)

12.8. Subdivision 8 — Noise Standards

12.8.1. Noise is regulated by the MPCA under Chapter 7030. These rules establish the maximum nighttime and daytime noise levels that effectively limit wind turbine noise to 50 db (A) at farm residences. However, these standards may not be sufficient for the "preservation of public health and welfare" in relation to impulsive noises. Additional local limits relative to impulsive and pure tone noises may be appropriate.

12.9. Subdivision 9 — Decommissioning

12.9.1. Provisions shall ensure that facilities are properly decommissioned upon end of project life or facility abandonment. If the wind tower is idle for twelve (12) consecutive months, the tower shall be dismantled, and the site shall be returned to its original condition. Decommissioning shall include:

12.9.1.1. Removal of all structures and debris to a depth of four (4) feet;

12.9.1.2. Restoration of the soil;

12.9.1.3. Restoration of vegetation (consistent and compatible with surrounding vegetation).

12.9.2. Provisions shall include a decommissioning plan. This plan will identify:

12.9.2.1. When and how a facility is to be decommissioned;

12.9.2.2. Estimated cost of decommissioning;

12.9.2.3. Financial resources to be used to accomplish decommissioning.

12.9.3. It may also be prudent to include provisions that ensure financial resources will be available for decommissioning. This may include establishing an escrow account into which the project developer/owner will deposit funds on a regular basis over the life of the project. The unit of government shall then have access to the escrow account for the explicit purpose of decommissioning. Financial provisions shall not be so onerous as to make wind power projects unfeasible.

12.10. Subdivision 10 — Waste Management

12.10.1. Solid Waste: Construction of wind power facilities, as with other facilities, will lead to the generation of various types of waste: packaging, equipment parts, litter, and debris generated by site clearing. Removal of such material shall be accomplished in a timely manner. Similarly, ongoing operation and maintenance of these machines results in the generation of various waste products. This may include worn parts and packaging of new parts. All such material shall be removed from the site immediately and managed in an appropriate manner.

12.10.2. Hazardous Waste: Operation and maintenance of wind power facilities will result in the generation of some hazardous materials. This will primarily be used lubricating materials. All such material shall be removed from the site immediately and managed in a manner consistent with all appropriate rules and regulations.

12.11. Subdivision 11 — Tower Type

12.11.1. Smaller co-generators of 40 kilowatts or less are exempt from this rule and may use lattice construction towers but must meet all other standards.

12.11.2. All commercial installed wind turbines must utilize self-supporting, tubular towers. Such towers provide several benefits.

12.11.2.1. Improved aesthetics, including intra- and inter-project visual consistency;

12.11.2.2. Minimized impact on farming activities;

12.11.2.3. Reduced potential for unauthorized climbing;

12.11.2.4. Improved maintenance access increasing the total turbine operating availability;

12.11.2.5. Reduced need for ancillary structures to house control equipment;

12.11.2.6. Clearance: The WECS blade must be a minimum of thirty (30) feet above ground level;

12.11.2.7. Safety Design: The safety design and construction of the WECS must be certified by the manufacturer's engineer or a certified Minnesota professional engineer.

12.12. Subdivision 12 — Signage

12.12.1. It is important that signage be properly controlled. Signage regulations are to be consistent with Chippewa County's zoning ordinance.

12.12.2. Each WECS must have a sign posted at the base of the tower that specifies the following information:

12.12.2.1. Warning of high voltage;

12.12.2.2. Manufacturer's name;

12.12.2.3. Emergency shutdown procedures;

12.12.2.4. Emergency phone numbers.

12.12.2.5. No permitted sign may exceed three (3) square feet in area.

12.12.3. Signs other than warning signs, equipment labels, emergency information, or owner identification are prohibited on a WECS.

12.13. Subdivision 13 — Aesthetics

12.13.1. The following items are recommended standards to mitigate visual impacts:

12.13.1.1. Coatings and Coloring: Non-reflective unobtrusive color. Black blades are acceptable for mitigation of icing.

12.13.1.2. Signage: (See Subdivision 12, above.) Including anything on the tower or nacelle shall be consistent with other county ordinances pertaining to signage.

12.13.1.3. Turbine Consistency: To the extent feasible, the project shall consist of turbines of similar design and size, including tower height. Further, all turbines shall rotate in the same direction. Turbines shall also be consistent in design, color, and rotational direction with nearby facilities.

12.13.1.4. Lighting: Projects shall utilize minimal lighting.

12.13.1.4.1. A WECS may not be illuminated other than for normal security lighting unless required by a state or federal agency;

12.13.1.4.2. The proposed WECS must be in compliance with all Federal Aviation Administration (FAA) regulations and

shall comply with the notification requirements of the FAA;

12.13.1.4.3. It may be appropriate for permits to allow for some infrared lights or heat lamps to prevent icing of sensors.

12.13.1.5. Intra-Project Power and Communication Lines: All power lines used to collect power from individual turbines and all communication lines shall be buried underground. Allowances shall be provided where shallow bedrock interferes with the ability to bury underground lines.

12.13.1.6. Screening: There may be critical vistas or views from public roads to scenic locations that are negatively impacted by wind turbines, which may be determined by the administrator. It may be appropriate to require landscaping materials at a scenic overlook that screens the view of or distracts attention from the turbines in order to minimize visual impact.

12.13.1.7. Interference: No WECS shall be permitted that causes any interference with commercial or private use and enjoyment of other legally operating telecommunication device including, but not limited to, radios, televisions, telephones, personal communication devices, and other electronic equipment and devices.

12.14. Subdivision 14 — Public Services

12.14.1. Roads: If construction is large enough or during spring restrictions, roads can sustain severe damage.

12.14.1.1. Enforcement of road limits may make construction impossible. The local unit of government may choose to require either remediation or road repair upon completion of the project.

12.14.1.2. Local units are authorized to collect fees for oversized load permits.

12.14.1.3. Contractor and county will conduct re-construct evaluation of current conditions. If damage occurs to road, contractor will be required to pay appropriate amount or repair road to pre-construction condition.

12.14.1.4. Contractor will be required to obtain all required permits.

12.14.2. Fire: The following permit standards shall be followed to reduce risk of fire:

12.14.2.1. Adherence to electrical codes and standards;

12.14.2.2. Removal of fuel sources, like vegetation, from immediate vicinity of electrical gear and connections;

12.14.2.3. Utilization of twistable cables on turbines.

12.14.3. Sewer and Water: There shall be little issue with sewer and water facilities. Any facility shall simply comply with existing septic ordinances and state well regulations. There may not be need for on-site staff; therefore, there may not be any need for water or sewer services.

12.15. Subdivision 15 — Orderly and Efficient Use of the Resource

12.15.1. The Chippewa County zoning ordinance calls for the orderly and efficient use of resources. Applications shall be reviewed to ensure that the project area does not adversely impact wind development potential on adjacent lands.

12.15.2. Further, ordinances to keep non-compatible development from encroaching upon wind power facilities would be appropriate.

12.15.2.1. New structures shall maintain the same setbacks from wind turbines as are implemented for wind turbines.

12.16. Subdivision 16 — Other Pertinent Information

12.16.1. A description of the project, including number and capacity of turbines, height and diameter of turbine rotors, turbine color, and rotor direction.

12.16.1.1. A site plan detailing the location of the project area boundaries, turbines, roads, transformers, power lines, communication lines, interconnection point with transmission lines, and other ancillary facilities or structures;

12.16.1.2. Topographic map of the project site and surrounding area;

12.16.1.3. Current land use on the site and of the surrounding area.

12.16.1.4. Distance to impacted properties;

12.16.1.5. Decommissioning plan;

12.16.1.6. Engineering certification of tower and foundation design suitability for turbine and soils;

12.16.1.7. Evidence of power purchase contracts and power transmission contracts or documentation that the power will be utilized on-site;

12.16.1.8. Evidence of control of wind easements in the entire project area;

12.16.1.9. Description and identification of adjoining wind easements/neighboring wind power facilities.