

Chapter 12

Highlights from the Winona County Comprehensive Plan:

Sustainability Value Statement

Winona County promotes a sustainable community through the encouragement of sustainable development. A sustainable community uses its resources to meet current needs while ensuring that adequate resources are available for future generations. A sustainable community seeks a better quality of life for all its residents while maintaining nature's ability to function over time by minimizing waste, preventing pollution, promoting efficiency and developing local resources to revitalize the local economy. Decision-making in a sustainable community stems from a rich civic life and shared information among community members. A sustainable community resembles a living system in which human, natural and economic elements are interdependent and draw strength from each other.

CHAPTER 12: RENEWABLE ENERGY

12.1 Purpose

The purpose of the Chapter is to promote the installation and construction of renewable energy systems throughout Winona County to ensure residents have the access to affordable, efficient, reliable, and environmentally sound energy options. The provisions contained in this Chapter have the function through reasonable restrictions and standards, to preserve the public health and safety without significantly increasing the cost or decreasing the efficiencies of renewable energy systems, and to protect esthetic resources within the County. The types of systems covered in this chapter include Wind Energy Conversion Systems (WECS), Solar Energy Systems, and Geothermal Energy Systems.

12.2 Wind Energy Conversion Systems (WECS)

Establish regulations relating to the installation and operation of public and private Wind Energy Conversion Systems (WECS) within Winona County Zoning authority not otherwise subject to siting and oversight by the State of Minnesota under applicable State Statues.

12.2.1 Procedures

WECS, public and/or private based upon total kW output, require a Development Certificate located in Chapter 6, or a Conditional Use Permit and shall be applied for and reviewed under the procedures established in Chapters 5 and 6.

The application for all WECS shall include the following information in addition to the requirements of the Development Certificate located in Chapter 6:

1. Recorded property easments.
2. A description of the project including: number, type, tower height, rotor diameter, and total height of all wind turbines.
3. Site layout, including the location of property lines, roads, wind turbines, electrical wires, interconnection points with the electrical grid, and all related accessory structures.

The application for WECS larger than 100 kW shall also include the following information in addition to the requirements of the Development Certificate located in Chapter 6:

1. The latitude and longitude of individual wind turbines.
2. A USGS topographical map, or map with similar data, of the property and surrounding area, including any other WECS within ten (10) rotor diameters of the proposed WECS.
3. Location of wetlands, floodplain, shoreland, sensitive natural features, scenic, and natural areas, including bluffs, within quarter (1/4) mile of the proposed WECS.
4. Engineer's certification.

5. Location of all known Communications Towers within two (2) miles of the proposed WECS.
6. Decommissioning Plan outlining the anticipated means and cost of removing WECS at the end of their serviceable life or upon becoming a discontinued use. The cost of removing the WECS shall be estimated by a competent party; such as a Professional Engineer, a contractor capable of decommissioning or a person with suitable expertise or experience with decommissioning. The plan shall also identify the financial resources that will be available to pay for the decommissioning and removal of the WECS and accessory facilities, in the form of a bond, or a line of credit, or cash deposit in an amount one hundred and five (105) percent of the total decommission cost.
7. Mitigation plan, in reference to public infrastructure for construction and decommissioning.
8. Plan for On-Site Storage of materials, if applicable.

12.2.2 Conditional Use Permit

Section 5.5.4.6 of Chapter 5 of this Ordinance describes the procedure for obtaining a Conditional Use Permit for WECS larger than 100 kW.

12.2.3 Aggregated Projects – Procedures

Aggregated Projects may jointly submit a single application and be reviewed under joint proceedings, including notices, hearings, reviews and as appropriate approvals. Development Certificates will be issued and recorded separately.

Joint applications will be assessed fees as one (1) project. Aggregated projects having a combined capacity equal to or greater than the threshold for State oversight as set forth in MS Statutes shall be regulated by the State of Minnesota.

12.2.4 District Regulations

WECS will be permitted, conditionally permitted or not permitted based on the generating capacity and land use district as established in the Table 12.1.

Zoning District	WECS 100 kW and smaller	WECS larger than 100 kW	Meteorological Tower
A/RC - RH	DV	CUP	DV
RR	DV	CUP	DV
CD/ CD2	DV	CUP	DV
UR	DV	CUP	DV
B	DV	CUP	DV
I	DV	CUP	DV
Shoreland	CUP	CUP	CUP
Floodplain	CUP	CUP	CUP

A/RC - RH	Agricultural / Resource Conservation
RR	Rural Residential
CD/CD2	Community Development
UR	Urban Residential
B	Business and Recreation
I	Industrial

DV	Development Certificate
CUP	Conditional Use Permit

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As a reminder to installation of WECS shall comply with all State and Federal rules.

12.2.5 Performance Standards

1. Setbacks:

*measured from the center of the tower base:

- a. WECS larger than 100kW: 1.1 times the total height from all Meteorological Towers and property lines.
- b. WECS 100 kW and smaller: 1.1 times the total height from property lines.
- c. Road Right of Ways: 1.1 times the total height from all Wind Turbines and Meteorological Towers.
- d. Other above ground right of ways (railroad, utility lines, gas lines, etc.): 1.1 times the total height from all WECS and Meteorological Towers.
- e. Wetlands USFW Types III, IV, and V: 1.1 times the total height from all WECS and Meteorological Towers.
- f. Bluffs: WECS 100kW and smaller: two (2) times the total height of turbine from the top or toe of a bluff.

	WECS 100 kW and smaller	WECS larger than 100 kW	Meteorological Tower
Property Lines	1.1 th*	1.1 th	1.1 th
Road Right of Ways	1.1 th	1.1 th	1.1 th
Other above ground Right of Ways (railroad, utility, gas lines)	1.1 th	1.1 th	1.1 th
Wetlands USFW Types III, IV, and V	1.1 th	1.1 th	1.1 th
Bluffs	2 times the total height of turbine from top or toe of bluff	Review through CUP process (see Chapter 5)	N/A

* "th" is an abbreviation for "Total Height".

2. Safety Design Standards:

- a. For WECS larger than 100kW, the manufacturers engineer or another qualified engineer shall certify that the turbine, foundation and tower design of the WECS is within accepted professional standards, given local soil and climate conditions.
- b. Rotor blades or air foils must maintain at least sixteen (16) feet of clearance between their lowest point and the ground.

3. Design Standards

- a. Finishes shall be matte or nonreflective.

- b. Lighting, including lighting intensity and frequency of strobe, shall adhere to but not exceed requirements established by Federal Aviation Administration permits and regulations. Red strobe lights are preferred for night-time illumination to reduce impacts on migrating birds. Red pulsating incandescent lights should be avoided. Exceptions may be made for Metrological Towers, where concerns exist relative to aerial spray applicators.
- c. The manufacturer's or owner's company name and logo, relating to the WECS, may be placed upon the nacelle, tail or the compartment containing the electrical generator of the WECS. No off site advertising may be placed, attached, or hung upon the nacelle, tower, blades or upon a substation.
- d. All communications and feeder lines, less than or equal to 34.5 kV in capacity and installed as part of a WECS shall be buried where reasonably feasible.
- e. WECS larger than 100kW shall be anchored to objects that have been approved by the manufacture of the WECS. If an alternative mounting structure is desired a statement from a licenced structural engineer shall be submitted to Winona County stating that the WECS can be safely mounted to an alternative structure.
- f. WECS larger than 100kW shall be considered a discontinued use after one (1) year without energy production, unless a plan is developed and submitted to Winona County outlining the steps and schedule for returning the WECS to service.

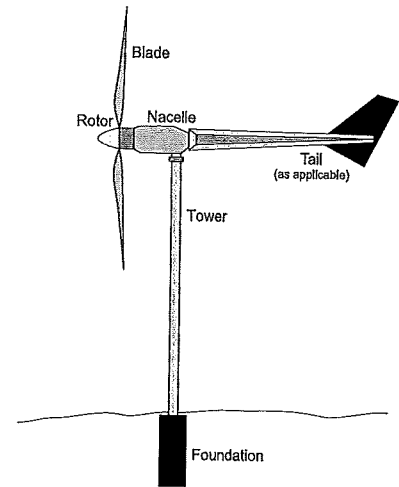


Figure 12.1 WECS Parts Identified

12.2.6 Interference

The applicant of WECS larger than 100kW shall notify all communication tower operators registered with the Federal Communication Commuission (FCC) within five (5) miles of the proposed WECS location upon application to the county for permits to construct the WECS.

12.2.7 Avoidance and Mitigation of Damages to Public Infrastructure

Applicants of WECS larger than 100kW shall:

- 1. Identify all county, city or township roads to be used for the purpose of transporting WECS, substation parts, cement, and/or equipment for construction, operation or maintenance of the WECS and obtain applicable weight and size permits from the impacted road authorities prior to construction.
- 2. The Applicant shall be responsible for immediate repair of damage to public drainage systems stemming from construction, operation or maintenance of the WECS.

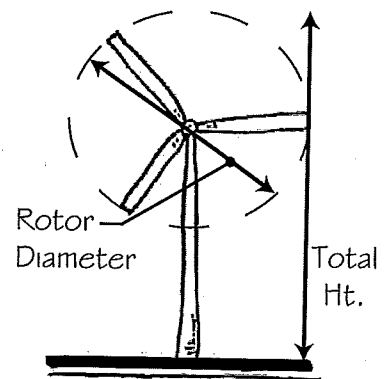


Figure 12.2 WECS Dimensions

12.3 Solar Energy Systems

Solar Energy Systems are a permitted accessory use in all zoning districts, subject to the following standards.

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As a reminder to installers of Solar Energy Systems, the system shall comply with the Minnesota State Electric Code.

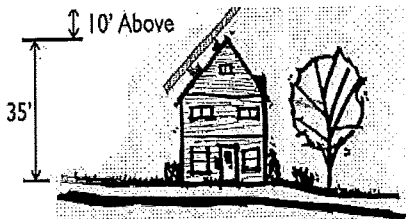


Figure 12.3 Roof Mounted Solar Energy Systems Height

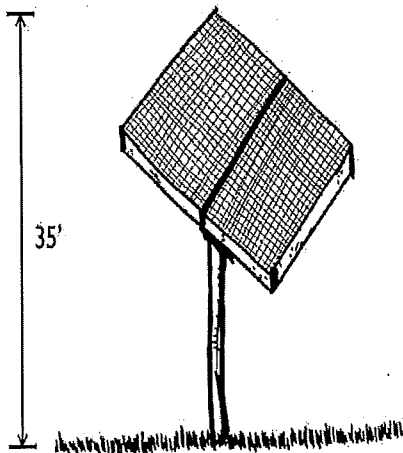


Figure 12.4 Ground Mounted Solar Energy Systems Height

1. Height.
 - a. Building or roof mounted Solar Energy Systems shall not exceed ten (10) feet above the highest portion of the building.
 - b. Ground-mounted Solar Energy Systems shall not exceed thirty five (35) feet in overall height.
2. Location within Lot. Solar Energy Systems must meet the accessory structure setback for the zoning district.
 - a. Roof-mounted Solar Energy Systems. In addition to the building setback, the collector surface and mounting devices for roof-mounted Solar Energy Systems that are parallel to the roof surface shall not extend beyond the exterior perimeter of the building on which the system is mounted or built.
 - b. Ground-mounted Solar Energy Systems. Ground-mounted Solar Energy Systems may not extend into the side-yard or rear setback when oriented at minimum design tilt.
 - c. Large Ground-mounted Systems. In the A/RC Ground-mounted Solar Energy Systems that result in the creation of (1) one or more acres of impervious surface must:
 - I. apply for a Conditional Use Permit and,
 - II. Follow MPCA Stormwater Standard
3. No owner, occupier or person in control of property shall allow vegetation or structures to be placed or grow so as to cast a shadow on a Solar Energy System which is greater than the shadow cast by a hypothetical wall ten (10) feet high located along the boundary line of said property between the hours of 9:30 a.m. and 2:30 p.m. Central Standard Time on December 21 provided, however, this standard shall not apply to vegetation or structures which casts a shadow upon the Solar Energy System at the time of installation of said Solar Energy System or to vegetation existing at the time of installation of said Solar Energy System.
 - a. Violation of this standard shall constitute a private nuisance, and any owner or occupant whose solar energy system is shaded because of such violation, so that performance of the system is impaired, may have in tort for damages sustained thereby and may have such nuisance abated.
 - b. As a means of evidencing existing conditions, the owner of a Solar Energy System may file notarized photographs of the affected area with the County prior to installation of said system.

12.4 Geothermal Energy Systems

Geothermal Energy Systems are allowed in all zoning districts, subject to the following standards.

12.4.1 Land Disturbance Permit

A Land Disturbance Permit, located in Chapter 6 is required for the following situations when installing a Geothermal Energy System:

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- a. When there is to be excavation or filling of land that would deprive an adjoining property owner of lateral support.
- b. When there is to be excavation of earthen material of more than one thousand (1,000) cubic yards, for the installation of a geothermal heat pump system.
- c. When there is to be excavation of earthen material, for the installation of a geothermal heat pump system located within Shoreland, Floodplain, or on steep slopes as described in Chapter 11.

More Information regarding Geothermal Energy Systems can be found here:
<http://www.health.state.mn.us/divs/eh/wells/geothermal.html>

5.5.4.6 Criteria for the Issuance of a Conditional Use Permit for WECS Larger than 100kW.

The Planning Commission, before making a recommendation to the County Board regarding a Conditional Use request for a WECS larger than 100kW shall ensure the request fulfils all specific standards of the Winona County Zoning Ordinance, and shall find adequate evidence that the use adequately addresses the issues/concerns:

1. The parcel under consideration for the installation of a WECS demonstrates the capacity to safely accommodate the proposed WECS by not posing a risk to adjacent residential uses, public infrastructure, and/or thoroughfares.
2. The proposed WECS will not have adverse effects of stray voltage, or interfere with cellular, radio, or television signals.
3. The evaluation of the potential fall zone based on Table 12.4 (pg.242) to determine the absence of obvious conflict points.
4. Consideration shall be given in that the proposed location shall not create undue burden onto neighboring properties and structures in which the WECS could create a moving shadow created by the sun shining on rotating turbine blades.
5. For all WECS, the manufacture's engineer or another qualified engineer shall certify that the overall design of the apparatus and its installation is within accepted professional standards.
6. The proposed WECS shall consider visual impacts.