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5 WABASH COUNTY  
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7 WIND ENERGY CONVERSION SYSTEMS  
8 ORDINANCE  
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55 SECTION 1 TITLE, REPEALER

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59 101 TITLE AND REPEALER

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63 101.1 The title of this ordinance is the Wabasha County Wind Energy Conversion Systems Ordinance, and will  
64 be referred to herein as "THIS ORDINANCE".

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71 101.2 The existing Wabasha County Zoning Ordinance Article 3 Section 14B - Wind Generators, previously  
72 adopted/amended August 2006, is hereby repealed. The adoption of this Ordinance, however, shall not effect nor  
73 prevent any pending or future prosecution or legal action to abate, any existing violation of the previous Wabasha  
74 County Zoning Ordinance Article 3 Section 14B provided the violation is also a violation of this Ordinance.

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83 SECTION 2 PURPOSE

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87 201 PURPOSE

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91 201.1 This ordinance is established to regulate the installation and operation of Wind Energy Conversion  
92 Systems (WECS) within Wabasha County not otherwise subject to siting and oversight by the State of  
93 Minnesota pursuant to Minnesota Statutes, Chapter 216F, Wind Energy Conversion Systems, as  
94 amended.

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98 SECTION 3 JURISDICTION

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101 301 JURISDICTION

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105 301.1 The jurisdiction of this Ordinance shall apply to all areas of Wabasha County outside of incorporated  
106 municipalities.

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110 SECTION 4 INTERPRETATION

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401 INTERPRETATION

401.1 This Ordinance, shall at a minimum, promote and protect the public health, safety, and general welfare. Where the provisions of this Ordinance impose greater restrictions than those of any statute, ordinance or regulations, the provisions of this Ordinance shall be controlling. Where the provisions of any statute, ordinance or regulation impose greater restrictions than this Ordinance, the provisions of such statute, other ordinance or regulation shall be controlling.

**216F.081 APPLICATION OF COUNTY STANDARDS.**

A county may adopt by ordinance standards for LWECS that are more stringent than standards in commission rules or in the commission's permit standards. The commission, in considering a permit application for LWECS in a county that has adopted more stringent standards, shall consider and apply those more stringent standards, unless the commission finds good cause not to apply the standards.

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130 SECTION 5 DEFINITIONS

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134 501 DEFINITIONS – For the purpose of this Ordinance, the following terms shall have the meaning given to  
135 them in this section. To the extent a term is used in this Ordinance is not defined in this section, the term shall  
136 have the meaning given in the Wabasha County Zoning Ordinance.  
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140 1. Aggregated Project - Aggregated projects are those which are developed and operated in a coordinated fashion,  
141 but which have multiple entities separately owning one or more of the individual WECS within the larger  
142 project. Associated infrastructure such as power lines and transformers that service the facility  
143 may be owned by a separate entity but are also included as part of the aggregated project.  
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150 2. Airfoil – A part such as a blade, with a flat or curved surface, designed to provide a desired reaction  
151 force when in motion relative to the surrounding air.  
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157 3. Azimuth – A clockwise measurement around the horizon in degrees, beginning and ending at true north.  
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161 Bluff - A natural topographic feature such as a hill, cliff, or embankment having the following characteristics:  
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- 163 A. The slope rises at least twenty-five (25) feet above the toe of the bluff; and
- 164 B. The grade of the slope from the toe of the bluff to a point twenty-five (25) feet or more  
165 above the toe of the bluff averages thirty (30) percent or greater;
- 166 C. An area with an average slope of less than eighteen (18) percent over a horizontal  
167 distance of fifty (50) feet shall not be considered part of the bluff.  
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173 4. Board of Adjustment and Appeals - An officially constituted quasi-judicial body appointed by the  
174 County Board whose principle duties are to hear appeals from decisions of the Zoning Administrator  
175 and, where appropriate, grant variances from the strict application of this Ordinance.  
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181 5. C-BED Project - As defined in Minnesota Statutes 216B.1612, as amended. Based on the total name  
182 plate generating capacity, C-BED Projects are considered to be (1) Micro-WECS, (2) Non-Commercial  
183 WECS or (3) Commercial WECS as defined in this Section.  
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6. Campground – A facility licensed by the Minnesota Department of Health for the purposes of camping.

7. Church - As defined in Minnesota Statutes Chapter 272.

8. Commercial WECS - A WECS which is equal to or greater than two hundred (200) feet in total height.

9. Comprehensive Plan - Comprehensive plan means the policies, statements, goals, and interrelated plans for private and public land and water use, transportation, and community facilities including recommendations for plan execution, documented in texts, ordinances and maps which constitute the guide for the future development of the unincorporated area of the county.

10. Conditional Use - Means a specific type of structure or land use listed in the official control that may be allowed but only after an in-depth review procedure and with appropriate conditions or restrictions as provided in the official zoning controls or building codes and upon a finding that: (1) certain conditions as detailed in the zoning ordinance exist and (2) the structure and/or land use conform to the comprehensive land use plan if one exists and are compatible with the existing neighborhood.

11. County - Wabasha County, Minnesota.

12. County Board - Wabasha County Board of Commissioners.

13. Decibel: A unit of measure of sound pressure.

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14. dB(A), A-Weighted Sound Level - A measure of over-all sound pressure level in decibels, designed to reflect the response of the human ear.

15. Dwelling – A residential building or portion thereof intended for occupancy by a single family, but not included hotels, motels, boarding or rooming houses or tourist homes.

16. Electromagnetic Communications – The use of an electromagnetic wave to pass information between two points.

17. Fall Zone - The area, defined as the furthest distance from the tower base, in which a tower may collapse in the event of a structural failure.

18. Flicker – The moving shadow cast by the rotating blades of a WECS, or any intermittent, repetitive, or rhythmic lighting effect that is a direct result of rotating WECS blades.

19. Flicker Analysis - A study showing the duration and location of flicker potential.

20. Generator nameplate capacity - The maximum rated output of electrical power production of a generator under specific conditions designated by the manufacturer with a nameplate physically attached to the generator.



298 21. Health Care Facilities - Facilities principally engaged in providing services for health maintenance and  
299 the treatment of mental or physical conditions including but not limited to hospitals, clinics, and nursing  
300 homes.

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307 22. Hub Height (HH) - The distance from the ground to the center axis of the turbine rotor.  
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313 23. Meteorological Tower - For the purposes of this Ordinance, meteorological towers are those towers  
314 which are erected primarily to measure wind speed and directions plus other data relevant to siting  
315 WECS. Meteorological towers do not include towers and equipment used by airports, the Minnesota  
316 Department of Transportation, or other similar applications to monitor weather conditions.  
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322 24. Micro-WECS – A WECS which is less than one hundred (100) feet in total height.  
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329 25. Mississippi River Valley – For the purpose of this Ordinance, the Mississippi River Valley shall be  
330 considered to be any point that is within 3.5 miles of the center of Minnesota State Highway 60.  
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336 26. Native Prairie Plan - The plan shall address steps to be taken to identify native prairie within the project  
337 area, measures to avoid impacts to native prairie, including foundations, access roads, underground  
338 cable and transformers, shall not be placed in native prairie unless addressed in the prairie protection and  
339 management plan.  
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346 27. Noise Profile – A study certifying the WECS is in compliance with Minnesota Chapter 7030, as  
347 amended, of the Minnesota Pollution Control Agency noise standards.  
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353 28. Non Commercial WECS - A WECS equal to or greater than one hundred (100) feet in total height, but

354 less than two hundred (200) feet in total height.

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361 29. Non Prevailing Wind – The non-dominant wind direction in Wabasha County.

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368 30. Power Line – An overhead or underground conductor and associated facilities used for the transmission  
369 or distribution of electricity.

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375 31. Power Purchase Agreement - A legally enforceable agreement between two or more persons where one  
376 or more of the signatories agrees to provide electrical power and one or more of the signatories agrees to  
377 purchase the power.  
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383 32. Preliminary Acoustic Study – A study certifying the WECS will be in compliance with Minnesota  
384 Chapter 7030, as amended, of the Minnesota Pollution Control Agency.  
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392 33. Prevailing Wind – The predominant wind direction in Wabasha County.  
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399 34. Project – A WECS or combination of WECS.  
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405 35. Project Boundary/Property line - The boundary line of the area over which the entity applying for a  
406 WECS permit has legal control for the purposes of installation of a WECS. This control may be attained  
407 through fee title ownership, easement, or other appropriate contractual relationship between the project  
408 developer and landowner.  
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415 36. Project Owner – An individual or entity with legal ownership of a WECS project.  
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421 37. Public conservation lands - Land owned in fee title by State or Federal agencies and managed  
422 specifically for conservation purposes, including but not limited to State Wildlife Management Areas,  
423 State Parks, State Scientific and Natural Areas, Federal Wildlife Refuges and Waterfowl Production  
424 Areas. For the purposes of this section public conservation lands will also include lands owned in fee  
425 title by non-profit conservation organizations. Public conservation lands do not include private lands  
426 upon which conservation easements have been sold to public agencies or non-profit conservation  
427 organizations.  
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433 38. Qualified Independent Acoustical Consultant - A person with Full Membership in the Institute of Noise  
434 Control Engineers (INCE), or other demonstrated acoustical engineering certification. The Independent  
435 Qualified Acoustical Consultant can have no financial or other connection to a WECS developer or  
436 related company.  
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442 39. Receptor - Structures intended for human habitation, whether inhabited or not, including but not limited  
443 to churches, schools, hospitals, public parks, state and federal wildlife areas, the manicured areas of  
444 recreational establishments designed for public use, including but not limited to golf courses, and camp  
445 grounds.  
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448 40. Rotor – A system of airfoils connected to a hub that rotates around an axis.  
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455 41. Rotor Blades – See Airfoil.  
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462 42. Rotor Diameter (RD) - The distance across as measured passing through the center of the circle ascribed by the  
463 moving rotor blades.  
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470 43. School – As defined in Minnesota Statutes 120A.05, as amended, and private schools excluding home  
471 school sites.  
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478 44. Substation - Any electrical facility containing power conversion equipment designed for interconnection  
479 with power lines.  
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486 45. Transmission line – See Power Line.

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- 495 46. Total Height - The highest point, above ground level, reached by a rotor tip or any other part of the  
496 WECS.  
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- 502 47. Total Name Plate Capacity - The total of the maximum rated output of the electrical power production  
503 equipment for a WECS project.  
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- 509 48. Tower - Towers include vertical structures that support the electrical generator, rotor blades, or  
510 meteorological equipment.  
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- 516 49. Tower height - The total height of the Tower exclusive of the rotor blades.  
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- 523 50. Wake Loss – The loss of wind resource downwind of an operating wind turbine.  
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- 530 51. Wake Loss Study – A study of potential impacts to the wind resource downwind of operating wind  
531 turbines.  
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- 537 52. Wind Energy Conversion System (WECS) - A device such as a wind charger, windmill, or wind turbine  
538 and associated facilities that converts wind energy to electric energy, including, but not limited to:  
539 power lines, transformers, substations, and meteorological towers. The energy may be used on-site or  
540 distributed into the electrical grid.  
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- 547 53. Wind Turbine - Any equipment that converts the kinetic energy of blowing wind into electrical energy  
548 through the use of airfoils or similar devices to capture the wind.  
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54. Zoning Ordinance - The Wabasha County Zoning Ordinance regulating the use of land and water in Wabasha County; adopted 2001, as amended.

55. Zumbro River Valley – For the purpose of this Ordinance, the Zumbro River Valley shall be considered to be any point that is within 3.5 miles of the center of the Zumbro River channel at the time of application.

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565 SECTION 6 PROCEDURES

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601.1 PERMIT APPLICATION

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601.2 MICRO AND NON COMMERCIAL TURBINES

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1. The name(s) and address(es) of all project applicant(s).

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2. The name(s) and address(es) of the project owner(s). For C-BED projects, must provide percent of ownership for each of the project owners.

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3. The legal description(s) of all properties within the project boundary.

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4. A description of the project including: Number, type, total name plate generating capacity, tower height, rotor diameter, total height of all wind turbines, and means of interconnecting with the electrical grid.

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5. Site layout, including the location of project area boundaries (purchased and leased wind rights), property lines, roads, wind turbines, electrical wires, interconnection points with the electrical grid, and all related accessory structures. The site layout shall include distances and be drawn to scale.

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An aerial photo showing all Project Parcels, participating Parcels, and Non-Participating Parcels located within 2,640 feet of any boundary of a Project Parcel.

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621 The location and description of all structures located on Project parcels, Participating Parcels and any Non-  
622 Participating Parcel located within 2,640 feet of any boundary of a Project Parcel.  
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625 6. Documentation of land ownership or legal control of the property and current land use on the site and  
626 surrounding area.  
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632 7. Signed copy of the Power Purchase Agreement or documentation that the power will be utilized on-site.  
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638 8. Location of wetlands, and natural areas including bluffs within a one (1) mile radius of the  
639 proposed WECS.  
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645 9. Copies of all permits or documentation that indicates compliance with all other applicable State and  
646 Federal Regulatory Standards including, but not limited to:

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652 a. Uniform Building Code, as amended.  
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655 b. The National Electrical Code, as amended.  
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658 c. Federal Aviation Administration (FAA), as amended. (Including private landing areas)  
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661 d. Minnesota Pollution Control Agency (MPCA)/Environmental Protection Agency (EPA), as  
662 amended.  
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665 e. Microwave Beam Path Study  
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668 f. Minnesota Pollution Control Agency Chapter 7030, Noise Standards, as amended  
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671 g. Flicker Analysis  
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10. Location of all known telecommunication towers within a two (2) mile radius of the proposed WECS.

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- 688 11. Location of all known public or private Airports or Heliports within a five (5) mile radius of the  
689 proposed WECS.  
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- 694 12. Detailed Decommissioning Plan including how decommissioning costs would be covered.  
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- 700 13. Engineer’s Certification of the proposed WECS.  
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- 706 14. Documentation of land ownership or legal control of all property within a project boundary and current  
707 land use on the site and surrounding area.  
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- 716 601.3 COMMERCIAL TURBINES  
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- 720 1. If required, a letter from the State Agency responsible for size determination of a project, pursuant to  
721 Minnesota Statutes, Chapter 216F.011, as amended.  
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- 727 2. The names and addresses of project applicant.  
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- 733 3. The names and addresses of the project owner(s). For C-BED projects, must provide percent of  
734 ownership for each of the project owners.  
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- 740 4. The legal description(s) and address(es) of the project.  
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5. A description of the project including: Number, type, total name plate generating capacity, tower height, rotor diameter, total height of all wind turbines, and means of interconnecting with the electrical grid.

An aerial photo showing all Project Parcels, participating Parcels, and Non-Participating Parcels located within 2,640 feet of any boundary of a Project Parcel.

The location and description of all structures located on Project parcels, Participating Parcels and any Non-Participating Parcel located within 2,640 feet of any boundary of a Project Parcel.

6. Site layout, including the location of project area boundaries (wind rights purchased, leased, or acquired by easement), property lines, roads, wind turbines, electrical wires, interconnection points with the electrical grid, and all related accessory structures. The site layout shall include distances and be drawn to scale.

7. Documentation of land ownership or legal control of all property within a project boundary and current land use on the site and surrounding area.

8. Signed copy of the Power Purchase Agreement or documentation that the power will be utilized on-site.

9. The latitude and longitude of individual wind turbines.

10. A USGS topographical map, or map with similar data, of the property and surrounding area, including any other WECS within 10 rotor diameters of the Proposed WECS.

11. Location of wetlands, scenic and natural areas including bluffs within a one (1) mile radius of the proposed WECS and location of historic sites within a two (2) mile radius as listed by Minnesota's State Historic Preservation Office or the National Register of Historic Places.

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12. Copies of all permits or documentation that indicates compliance with all other applicable State and Federal Regulatory Standards including, but not limited to:

a. Uniform Building Code, as amended.

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- 819 b. The National Electrical Code, as amended.  
820  
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822 c. Federal Aviation Administration (FAA), as amended.  
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825 d. Minnesota Pollution Control Agency (MPCA)/Environmental Protection Agency (EPA), as  
826 amended.  
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829 e. Microwave Beam Path Study  
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832 f. Preliminary Acoustic Study  
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835 g. Noise Abatement Mitigation Plan  
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838 h. Flicker Analysis  
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841 i. Minnesota Pollution Control Agency, Chapter 7030, Noise Standards, as amended  
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844 j. Wake Loss Study, if proposed project boundary is within a one (1) mile radius of another WECS  
845 project boundary  
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853 13. Location of all known Communications Towers and Microwave Beam paths within a five (5) mile  
854 radius of the proposed WECS.  
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860 14. Location of all known public or private Airports or Heliports within a five (5) mile radius of the  
861 proposed WECS.  
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866 15. Detailed Decommissioning Plan including how decommissioning costs would be covered.  
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872 16. Additional information stated in Minnesota Rules, part 7836.0500 (subpart 1), as amended.  
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17. Identification of any and all Haul Routes to be utilized for material transportation and construction activities including State, Federal, County, Township, or private roads within Wabasha County.

18. Locations and site plans for all temporary, non-residential construction sites and staging areas.

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891 SECTION 7 DISTRICT REGULATIONS

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897 701.1 PERMITTED AND CONDITIONAL USES

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901 WECS will be permitted, conditionally permitted or not permitted based on the land use district as established  
902 in the table below (P=Permitted, C=Conditionally Permitted, NP=Not Permitted):

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	Micro	Non Commercial	Commercial
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A-1	P	C	C
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A-2, A-3 & R-1	P	NP	NP
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Miss & Zumbro Valley	P	NP	NP
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Bluff ¼ mile setback	NP	NP	NP
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Floodplain	NP	NP	NP
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Shoreland	NP	NP	NP
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930 SECTION 8 SETBACKS

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932 801.1 SETBACKS

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934  $[\text{Rotor Diameter (RD)} + \text{Hub Height (HH)}] \times 1.5 = (\text{RD} + \text{HH}) \times 1.5$

935	936	937 Micro Tower	938 Non- Commercial	939 Commercial
940 Project Boundary/ 941 Property Lines		(RD+HH)x1.5	(RD+HH)x1.5	(RD+HH)x1.5
942				
943				
944 Dwellings, other than		(RD+HH)x1.5	1,000 feet and sufficient distance to meet state noise standards	2,640 feet and sufficient distance to meet state noise standards
945				
946				
947				
948				
949 Noise Standard		Minnesota Rule 7030, as amended	Minnesota Rule 7030, as amended	Minnesota Rule 7030, as amended
950				
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954 Road Right-of-Way		(RD+HH)x1.5	(RD+HH)x1.5	(RD+HH)x1.5
955				
956 Other Right-of-Way (Railroads, Power lines, 957 Recreational Trails, etc.)		(RD+HH)x1.5	(RD+HH)x1.5	(RD+HH)x1.5
958				
959				
960 Public Conservation 961 Lands		(RD+HH)x1.5	3 RD Non-Prevailing and 5 RD Prevailing*	3 RD Non-Prevailing and 5 RD Prevailing*
962				
963 Wetlands, USFW Types 964 III, IV, and V		(RD+HH)x1.5	3 RD Non-Prevailing and 5 RD Prevailing*	3 RD Non-Prevailing and 5 RD Prevailing*
965				
966 Other Structures		N/A	(RD+HH)x1.5	(RD+HH)x1.5
967				
968 Other Existing WECS 969 and Internal Turbine 970 Spacing		N/A	3 RD Non-Prevailing and 5 RD Prevailing*	3 RD Non-Prevailing and 5 RD Prevailing*
971				
972 Bluff		¼ mile	¼ mile	¼ mile
973				
974 Incorporated City Limits		N/A	2 miles	2 miles

975  
976 \*See Appendix A

977  
978 . The setback for dwellings, schools, churches, health care facilities, and campgrounds shall be reciprocal  
979 in that no new dwellings, schools, churches, health care facilities, or campgrounds shall be constructed  
980 within one thousand (1,000) feet of an existing non commercial WECS or two thousand six hundred  
981 forty (2,640) feet of an existing commercial WECS other than those owned by the project owner.

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984 . Setbacks shall be measured from future rights-of-way if planned, changed, or expanded rights-of-way  
985 are known.

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993 . Prevailing and Non Prevailing Rotor Diameter setbacks shall be measured horizontally from the tower  
994 base.  
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1001 o Prevailing Wind - True North Azimuth between 290° to 30° and between 130° and 230°.\*  
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1008 o Non Prevailing Wind – True North Azimuth between 30° and 130° and between 230° and 290°.\*  
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1014 \*See Appendix A  
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#### 1019 801.2 ADDITIONAL SETBACK REQUIREMENTS 1020 1021 1022

1023 1. Based on the total height, Micro WECS, Non-Commercial WECS, or Commercial WECS as defined in  
1024 this Ordinance, will follow the setbacks established for the category for which they fall under, as listed  
1025 in Section 8 of this Ordinance.  
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1031 2. Native Prairie – WECS and associated facilities shall not be placed in native prairie unless approved in a  
1032 native prairie protection plan. A native prairie protection plan shall be submitted if native prairie is  
1033 present. The permittee shall, with the advice of the DNR and any others selected by the permittee,  
1034 prepare a prairie protection and management plan and submit it to the County and DNR Commissioner  
1035 60 days prior to the start of construction.  
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1041 3. Sand and Gravel Operations –WECS shall be prohibited in active sand and gravel operations.  
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1047 4. Aviation (public and private airports) – No WECS shall be located so as to create an obstruction to  
1048 navigable airspace of public and private airports

1049 in Wabasha County. Setbacks or other limitations  
1050 determined in accordance with MnDOT Department of Aviation and Federal Aviation Administration  
1051 (FAA) requirements.  
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1057 5. Setbacks – Substations, accessory facilities, and power lines associated with the WECS not located  
1058 within a public right-of-way or any utility easement required by the Wabasha County Zoning Ordinance  
1059 shall be setback from the edge of the Right-of-Way as regulated in the Zoning Ordinance.  
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1065 6. The setback for new dwellings shall be reciprocal in that no dwelling shall be constructed within the  
1066 same setback as a new wind turbine would need to meet to an existing dwelling.  
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1071 7. Wind turbines shall be prohibited within the Shoreland, and Floodplain Districts.  
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1078 SECTION 9 REQUIREMENTS AND STANDARDS

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1084 901.1 SAFETY DESIGN STANDARDS

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1088 1. Engineering Certification - For all WECS, the manufacturer's engineer or another qualified engineer  
1089 shall certify that the turbine, foundation and tower design of the WECS is within accepted professional  
1090 standards, given local soil and climate conditions.

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1096 2. Clearance - At all times, rotor blades or airfoils must maintain at least thirty (30) feet of clearance  
1097 between their lowest point and grade/ground surface.

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1103 3. Warnings -

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1109 a. For all WECS, a sign or signs shall be posted on the tower, transformer and substation warning  
1110 of high voltage. Signs with emergency contact information shall also be posted on the turbine or  
1111 at another suitable point.

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1117 b. For all guyed towers-

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1126 i. Visible and reflective objects, such as plastic sleeves, reflectors or tape, shall be placed  
1127 on the guy wire anchor points and along the outer and innermost guy wires up to a height  
1128 of eight (8) feet above grade/ground surface.

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1135 ii. Four marker balls placed sixteen (16) feet above grade and at fifty (50) foot intervals  
1136 along the guy wires from grade/ground surface.  
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1142 iii. Visible, anti-climbing fencing shall be installed around anchor points of guy wires and  
1143 tower base.  
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1152 902.1 TOWER CONFIGURATION STANDARDS  
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1156 1. All wind turbines, which are part of a commercial and C-BED WECS project, shall be installed with a  
1157 tubular, monopole type tower.  
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1162 2. Meteorological towers, Micro, and Non Commercial wind turbines may be guyed.  
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1169 3. Color and Finish - All wind turbines and towers that are part of a WECS shall be white, grey or another  
1170 nonobtrusive color. Blades may be black in order to facilitate deicing. Finishes shall be matte or nonreflective.  
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1177 4. Lighting - Lighting, including lighting intensity and frequency of strobe, shall adhere to but not exceed  
1178 requirements established by Federal Aviation Administration permits and regulations. Red strobe lights  
1179 are preferred for night-time illumination to reduce impacts on migrating birds. Red pulsating  
1180 incandescent lights are prohibited.  
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1192 903.1 ABANDONMENT AND DECOMMISSIONING

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1196 A WECS shall be considered a discontinued use after one (1) year without energy production, unless a  
1197 plan is developed and submitted to the Zoning Administrator outlining the steps and schedule for  
1198 returning the WECS to service.  
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1202 1. Removal Requirements - When the WECS is scheduled to be decommissioned, the project  
1203 owner/property owner shall notify the County by certified mail of the proposed date of discontinued  
1204 operations and plans for removal. The owner/operator shall physically remove the WECS no more than  
1205 60 days after the date of discontinued operations. At the time of removal, the WECS site shall be  
1206 restored to the state it was in before the WECS was constructed or any other legally authorized use.  
1207 More specifically, decommissioning shall consist of:  
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1214 a. All WECS and accessory facilities shall be physically removed to four feet below grade level  
1215 within sixty (60) days of the discontinuation of use.  
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1222 b. Disposal of all solid and hazardous waste in accordance with local, state, and federal waste  
1223 disposal regulations.  
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1230 c. Stabilization or re-vegetation of the site as necessary to minimize erosion. The conditional use  
1231 permit granting authority may allow the owner to leave landscaping or designated below-grade  
1232 foundations in order to minimize erosion and disruption to vegetation.  
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1239 2. Abandonment - Absent notice of a proposed date of decommissioning, the project shall be considered  
1240 abandoned when the project fails to operate for more than one year without the written approval of the  
1241 Zoning Administrator. The Zoning Administrator shall determine in its decision what proportion of the  
1242 project is inoperable for the project to be considered abandoned. If the property owner/project owner  
1243 fails to remove the WECS in accordance with the requirements of this section within sixty (60) days of  
1244 abandonment or the proposed date of decommissioning, the County shall have the authority to enter the  
1245 property and physically remove the WECS.  
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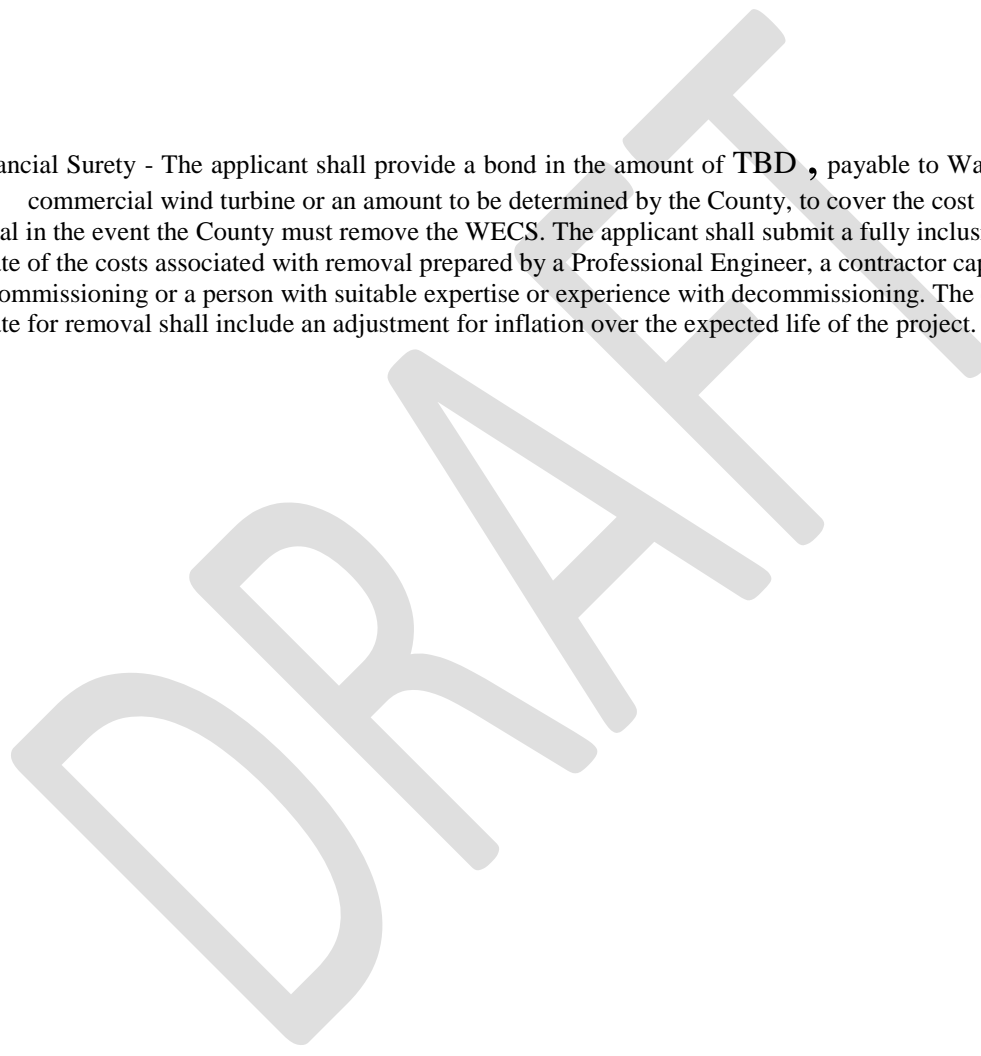


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3. Decommissioning Plan – The plan shall outline the anticipated means and cost of removing WECS at the end of their serviceable life or upon becoming a discontinued use. The cost estimates shall be made by a competent non-affiliated party; such as 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. The plan shall also address road maintenance during and after completion of the decommissioning in compliance with Section 909 of this ordinance.

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4. Financial Surety - The applicant shall provide a bond in the amount of TBD , payable to Wabasha County, per commercial wind turbine or an amount to be determined by the County, to cover the cost of removal in the event the County must remove the WECS. The applicant shall submit a fully inclusive estimate of the costs associated with removal prepared by a Professional Engineer, a contractor capable of decommissioning or a person with suitable expertise or experience with decommissioning. The cost estimate for removal shall include an adjustment for inflation over the expected life of the project.



1282 904.1 FLICKER ANALYSIS

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A Flicker Analysis shall include the duration and location of flicker potential for all receptors and road ways within a one (1) mile radius of each turbine within a project. The applicant shall provide a site map identifying 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 account for topography but not for obstacles such as accessory structures and trees. Flicker at any receptor shall not exceed thirty (30) hours per year within the analysis area.

1293 **STRAY VOLTAGE ASSESSMENT AND REQUIREMENTS (TBD)**

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905.1 PRELIMINARY ACOUSTIC STUDY FOR COMMERCIAL WECS PROJECTS

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An acoustic study that demonstrates the project will be compliant with Minnesota Rules 7030, as amended. This shall include the estimated dB(A) levels at all receptors within a one (1) mile radius of the nearest turbine within a project area and shall include accumulated sound within the project.

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906.1 LOCAL EMERGENCY SERVICES NOTIFICATION REQUIREMENTS FOR COMMERCIAL WECS PROJECTS

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1. The Applicant shall provide a copy of the project summary and site plan to local emergency services, including paid or volunteer Fire Department(s) that serve the WECS project area.

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2. The Applicant shall coordinate with local emergency services to develop and implement an emergency response plan for the WECS Project. A copy of the plan shall be submitted to the Environmental Services Department.

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907.1 PRE-CONSTRUCTION MEETING FOR COMMERCIAL WECS PROJECTS

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The applicant shall conduct a Pre-Construction meeting prior to construction commencement with a written notice sent to the following individuals a minimum of one (1) week prior to said meeting:

A. Township Chairman

1337 B. Wabasha County Engineer  
1338  
1339 C. Wabasha County Sheriff  
1340  
1341 D. Wabasha County Zoning Administrator  
1342  
1343 E. Area Hydrologist, Minnesota Department of Natural Resources  
1344  
1345 F. Minnesota Pollution Control Agency  
1346  
1347 G. United States Farm Service Agency ??  
1348  
1349 H. Wabasha County Soil & Water Conservation District  
1350  
1351 I. US Fish & Wildlife Service  
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1353 J. Minnesota State Historical Society ??  
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1355 K. MnDOT  
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1374 908.1 OTHER APPLICABLE STANDARDS

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1. Other Signage. All signage on site shall comply with the Wabasha County Zoning Ordinance. The manufacturer's or owner's company name and/or logo may be placed upon the nacelle, compartment containing the electrical generator, of the WECS.
  
2. All power lines associated with the WECS subject to Wabasha County Authority equal to or less than 34.5 kV in capacity shall be buried and located within the right-of-way, subject to prior approval of the road authority. Power lines installed as part of a WECS shall not be considered an essential service. If not buried, must apply for a variance and shall follow Section 5 of the Zoning Ordinance for variance procedures.
  
3. Waste Disposal - Solid and Hazardous wastes, including but not limited to crates, packaging materials, damaged or worn parts, as well as used oils and lubricants, shall be removed from the site promptly and disposed of in accordance with all applicable local, state and federal regulations.
  
4. Orderly Development - Upon issuance of a conditional use permit, all WECS, as defined by 216F, as amended, if applicable shall notify the Minnesota Public Utilities Commission (PUC) Energy Facilities Permitting program Staff of the project location and details on the survey form specified by the PUC.
  
5. Noise - All WECS shall comply with Minnesota Rule 7030, as amended, governing noise.
  
6. Electrical Code and Standards- All WECS and accessory equipment and facilities shall comply with the National Electrical Code and other applicable standards.
  
7. Federal Aviation Administration - All WECS shall comply with FAA standards and permits.

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909.1 AVOIDANCE AND MITIGATION OF DAMAGES TO PUBLIC INFRASTRUCTURE

909.2 ROADS

1. Identify all public roads to be used for the purpose of transporting WECS, substation parts, materials, and/or equipment for construction, operation or maintenance of the WECS and obtain applicable weight and size permits from the impacted road authority(ies) prior to construction.

2. Contact the road authority for road closures, road signage removals, road signage re-locating, road signage restoring, moving permits, culverts, access/driveway permits, tile outlet permits, widening road intersections, standard utility permits and any other road activities that may require permits.

3. Contact the Wabasha County Dispatch prior to any road closures for the re-routing of emergency vehicles during the closure.

4. Contact the road authority to conduct an inspection of the road conditions of the haul routes prior to and after construction.

5. The applicant shall retain a registered engineer to analyze bridges along the haul routes to determine if the bridges have the capacity to support the oversized vehicles. The applicant shall provide a signed

1482 report by the registered engineer to the road authority prior to the use of the bridges identified on the  
1483 haul routes.  
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1489 6. Provide a bond, in an amount determined by the road authority, to be held by the County until the  
1490 Township and/or County road authority(ies) have provided the County Auditor-Treasurer with a written  
1491 release that all haul routes within their jurisdiction in Wabasha County have been returned to preconstruction  
1492 condition.  
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1499 909.3 DRAINAGE SYSTEM

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1503 1. The Applicant shall be responsible for immediate repair of damage to public and private drainage  
1504 systems stemming from construction, operation, maintenance, or decommissioning.  
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1513 910.1 INTERFERENCE

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1517 The applicant shall minimize or mitigate interference with electromagnetic communications including, but not  
1518 limited to radio, telephone, microwaves, or television signals caused by any WECS. The applicant shall notify  
1519 all communication tower operators within a five (5) mile radius of the proposed WECS location upon  
1520 application to the county for permits. No WECS shall be constructed so as to interfere with County or  
1521 Minnesota Department of Transportation microwave transmissions.  
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1527 SECTION 10 ENFORCEMENT, VIOLATIONS, REMEDIES AND PENALTIES

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1533 1000.1 VIOLATIONS

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1537 Enforcement of this Ordinance shall be done in accordance with the process and  
1538 procedures established in  
1539 Article 21 of the Wabasha County Zoning Ordinance.

1540 **Or add section specifically for WECS**

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1543 APPENDIX A

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The shaded area represents the prevailing, or dominant wind direction in Wabasha County. The non-shaded area represents non-prevailing wind direction.

Turbines shall be spaced as defined in section 801.1 based on this diagram where setbacks are determined by Rotor Diameter (RD).

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1647 APPENDIX B

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1651 SUPPORTING DOCUMENTS

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1654 APPENDIX B - SUPPORTING DOCUMENTS  
1655 WECS SUPPORTING DOCUMENTS  
1656 NAME OF DOCUMENT DISTRIBUTED BY: DATE  
1657 Public Health Impacts of Wind Turbines  
1658 Minnesota Department of Health 05/22/09  
1659 Ice Shedding and Ice Throw – Risk Management  
1660 GE Energy 04/06  
1661 GAO – Report to congress Wind Power Impacts on Wildlife  
1662 US Government accountability Office 09/05  
1663 WHO - Night Noise Guidelines for Europe  
1664 World health Organization 2009  
1665 US Fish & Wildlife Region 3 Hydro & Wind Power Coordinator  
1666 Jeff Gosse 2009  
1667 Wind Turbine Ice Throw Studies in the Swiss Alps  
1668 Rene' Cattin 2008  
1669 Risk Analysis of Ice Throw from Wind Turbines – Seifert  
1670 BOREAS 04/03  
1671 Disconnect Between Turbine Noise Guidelines & Health Authority Recommendations  
1672 John P. Harrison  
1673 Wind Energy Guide for County Commissioners  
1674 U.S. Dept of Energy - Energy Efficiency &  
1675 Renewable Energy 10/1/06  
1676 The "How to" Guide to siting Wind Turbines to Prevent Health Risks from  
1677 Sound George W. Kamperman, P.E. 10/1/08  
1678 Wind Turbine Noise: Perspectives for Control Geoff Leventhall 10/1/05  
1679 Noise Ordinances  
1680 Why noise criteria are necessary for proper siting of Wind Turbines George W. Kamperman, P.E. 11/02/08  
1681 Facts about wind energy and noise - Wind energy fact sheet American Wind Energy Association  
1682 Infrasound from Wind Turbines - Fact, Fiction or Deception Geoff Leventhall 06/28/05  
1683 Wind Turbine Acoustic Noise Renewable Energy Research Laboratory 6/1/02  
1684 Wind Turbine Noise - Is Low Frequency Noise a Problem for Wind  
1685 Turbines?  
1686 Neil Kelley, U.S. National Renewable Energy  
1687 Laboratory  
1688 "Health, Hazard and Quality of Life Near Wind Power Installations. How  
1689 Close is Close? Dr. Geoff Leventhall 6/25/05  
1690 Adverse Health effects of noise  
1691 Guidelines for Community Noise - "World  
1692 Health Organization"  
1693 Addressing Wind Turbine Noise Daniel J. Alberts 10/1/06  
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