

ORDINANCE NO. 5412
AN ORDINANCE AMENDING CHAPTER 17.50 BY ADDING SECTION
17.50.217 TO ADD VERTICAL AXIS WIND TURBINES AS AN ACCESSORY
USE TO THE RAPID CITY MUNICIPAL CODE.

WHEREAS, Rapid City has adopted a comprehensive plan and zoning regulations pursuant to the authority granted to it in Chapter 11-4 of the South Dakota Codified Laws; and

WHEREAS, Rapid City has adopted Chapter 17.50: Supplementary Regulations Applicable to Some or all Districts *Article II. Accessory Uses* which regulates accessory uses in the City's Zoning Districts.

WHEREAS, vertical axis wind turbines not currently listed as an accessory use in any zoning district.

WHEREAS, the Common Council of the City of Rapid City has determined that it is in the City's best interest to allow Vertical Axis Wind turbines as an accessory use in certain zoning districts by adding Section 17.50.217 to the Rapid City Municipal Code.

NOW THEREFORE, BE IT ORDAINED by the City of Rapid City that, Chapter 17.50 of the Rapid City Municipal Code be and hereby is amended by adding Section 17.50.217 to read as follows:

17.50.217 Vertical Axis Wind Turbines.

- A. General. Vertical Axis Wind Turbines shall be allowed as a Conditional Use accessory to principle Permitted or Conditional Uses in certain zoning districts. In addition to the standards set forth in Chapter 17.54.030 regarding all conditional use permits, all vertical axis wind turbines also meet all requirements of § 17.50.217 herein.
- B. Commercial sale of power prohibited. Any vertical axis wind turbine shall be used only for the purpose of generating power for the property on which the vertical axis wind turbine is located, or for the purpose of transmitting power to the electrical grid of an electric utility company through an approved interconnection.
- C. Utility interconnections. Any vertical axis wind turbine shall be constructed and operated, and any interconnection between a vertical axis wind turbine and an electric utility company shall be allowed only in accordance with all local, state, and federal regulations including regulations issued by the Public Utilities Commission and the Federal Aviation Administration. Additionally, electrical interconnections shall be allowed only in accordance with the applicable standards of the electric utility company.
- D. Required setbacks. A minimum setback of one times the height of the vertical axis wind turbine as measured from the ground or rooftop if mounted on a

- rooftop, shall be maintained between the vertical axis wind turbine system and any property line, overhead utility line or other tower support base.
- E. *Tower height.* In no event shall the height of a vertical axis wind turbine exceed 60 feet as measured from the ground to the center of the rotor hub. Further, there shall be no less than 30 feet between the vertical axis wind turbine and the ground.
- F. *Rotor size/operation.* The maximum size of the vertical axis wind turbine shall be reviewed upon application for a Conditional Use. In determining the appropriate size, the city shall consider such factors as noise, proximity to surrounding residences, safety and aesthetic issues. All systems shall be equipped with appropriate braking devices or similar protective devices to slow down or stop the rotors if the wind exceeds the capacity of the system.
- G. *Noise.* No vertical axis wind turbine shall produce more than 60 decibels of sound measured at the closest point on the closest property line from the base of the system. Information from the manufacturer shall be submitted at the time of the submittal of the Conditional Use, ensuring that this requirement can be met once the system is operational. The owner may be required to submit independent noise studies to verify that the noise standard is met during actual operations.
- H. *Electromagnetic interference.* No vertical axis wind turbine shall produce electromagnetic interference so as to disrupt transmissions such as those from radio, television or microwave towers. At the time of application for the Conditional Use, the petitioner must submit information from the manufacturer indicating that, once operational, the vertical axis wind turbine will not adversely affect the transmissions. If necessary, generators and alternators shall be filtered, shielded or both so as to prevent the interference of radio and television signals.
- I. *Tower access.* Appropriate safety measures must be undertaken to discourage unauthorized climbing of a vertical axis wind turbine. Appropriate measures shall include either:
1. The construction of a 6-foot tall chain link fence with locking gate around the tower;
 2. The tower shall be constructed so that the lowest climbing access shall be at least 12 feet above the ground; or
 3. A locked anti-climb device shall be installed on the tower.
- J. *Warning information.* Information related to the maximum power output, nominal voltage and maximum current, and emergency shut-down procedures for the vertical axis wind turbine shall be posted near the base of the tower in a visible location.
- K. *Lighting.* Unless required by a more restrictive regulation, no lighting shall be installed on a vertical axis wind turbine.
- L. *Tower color and design.* The tower and turbine shall be a neutral color and shall have a non-reflective finish. In reviewing the Conditional Use for a vertical axis wind turbine, the City shall also consider the design of the tower to ensure that no significant adverse impacts are occurring to neighboring property owners, including, but not limited to, infringement into natural and urban viewsheds,

historic property, major community entryways, parks, schools, churches, playgrounds or similar public and recreational uses.

- M. Manufacturer warranty/maintenance information. Upon application for a Conditional Use for a vertical axis wind turbine, the petitioner shall submit a manufacturer's statement documenting that the system has been successfully and safely operated in atmospheric conditions that are similar to conditions in Rapid City. Further, the petitioner shall provide a copy of the manufacturer's warranty indicating that the system is warranted against any system failures reasonably expected during severe weather conditions. Further, the petitioner shall submit system specifications including maximum power output and a maintenance schedule for the system.
- N. Construction standards. Any vertical axis wind turbine shall be constructed in accordance with all applicable life, safety, building and fire codes including but not limited to the following:
1. An applicant for a building permit for a vertical axis wind turbine shall submit plans and specifications stamped by a registered engineer.
 2. Lightning Protection. Any vertical axis wind turbine shall have appropriate lightning protection to sufficiently protect all connected and adjacent equipment and structures from damage. The lightning protection system shall effectively discharge lightning energy from the structure to the ground through the application of shielding, lightning arresters and deep earth grounding.
- O. Abandonment/removal.
1. Any vertical axis wind turbine which has not been used for a period of 6 months or more shall be declared abandoned. Upon abandonment of the system, the City shall revoke the Conditional Use and the system shall be removed at the expense of the property owner. The City shall determine that a vertical axis wind turbine has not been used if the following criteria apply:
 - a. The vertical axis wind turbine has not been operating for a substantial period of time and the owner of the system is unable to provide documentation demonstrating that the system has produced a minimum of 25% of the power output as stated in the system specifications over the past 6 months;
 - b. The vertical axis wind turbine has fallen into obvious disrepair and/or has been deemed unsafe by the City of Rapid City.
 - c. The vertical axis wind turbine has become violative of some other local, state or federal law and the owner of the system has not taken appropriate actions to remedy the problem.
 2. If deemed appropriate, the City may stipulate through the Conditional Use that the vertical axis wind turbine shall be removed at the owner's expense, upon the rezoning of the subject property to a zoning district classification in which the vertical axis wind turbines are not allowed as either a Permitted use or Conditional Use.