

**Title 10 - Unified Development Code  
Chapter 10 – Wind Turbines**

**WIND TURBINES**

**SECTIONS**

- 10.1 Purpose**
- 10.2 Applicability**
- 10.3 Standards of Small Wind Turbines**
- 10.4 Commercial Wind Turbines**
- 10.5 Application Process**

**10.1 PURPOSE**

Madison County recognizes the generation of electrical power in the County has been studied by the Department of Physics at Brigham Young University Idaho in cooperation with the Idaho National Laboratory (INL) and it has found that it is potentially a valuable resource for alternate energy production.

Madison County also recognizes the increased demand for alternative and renewable energy. In order to balance this need, with public health, safety and welfare of County residents, the County finds these regulations necessary. Proper location and construction of small and commercial wind turbine facilities must be consistent with sound land use planning while allowing private and commercial providers to meet their generating objectives.

This Chapter establishes the regulations and criteria which allow wind turbines to be located within the various land use zones. Unless otherwise provided, all wind turbine uses are subject to the same regulations as the sponsoring primary use.

**10.2 APPLICABILITY**

**New Turbine Towers and Facilities:** All new wind turbine towers and facilities in Madison County shall be subject to these regulations in all zones in the County and as provided in the Chapter 4.0 Zoning of this Title.

### 10.3 STANDARDS OF SMALL WIND TURBINES

- 10.3.1. **Turbine mounting:** Small wind turbines are to be mounted on a non-guyed pole. The Planning and Zoning Department must approve all other turbine towers. Turbines are not to be installed on top or within the setback distance of inhabited homes.
- 10.3.2. **Maximum Height:** Small wind turbines shall be 60 feet to the top of the tower, and must not exceed the Federal Aviation Administration (FAA) regulations for the area of installation. Those regulations may be different on hilltops and in flight landing patterns near the Rexburg Municipal Airport.
- 10.3.3. **Setback:** The minimum setbacks from property lines, inhabited structures, utility lines, and road right-of-ways for wind turbine towers shall not be less than tower height, plus rotor radius, plus ten (10) feet. Abutting property owners may submit signed easements as an alternative to this setback distance from property lines.
- 10.3.4. **Sound Level:** At or beyond property lines for small wind turbines must not exceed 45 dba. (To compare, an operating refrigerator is about 40 dba.)
- 10.3.5. **Minimum Distance:** At least 20 feet between the ground and any part of the rotor blade system.
- 10.3.6. **Insurance:** All applicants for small wind turbines must show proof of liability insurance before a permit is issued. This must be added to an applicant homeowner's policy. No additional insurance shall be required. This insurance must be kept current for every subsequent year the wind turbine exists.
- 10.3.7. **Safety:** During catastrophic storms, all small residential wind turbines must have an automatic breaking, governing, or feathering system to prevent uncontrolled rotating, creating excessive pressure on any part of the equipment.
- 10.3.8. **Power Lines:** All power transmission lines from the wind turbine to the on-site electrical panels shall be underground.
- 10.3.9. **Emergency Shutoff:** Procedures shall be posted and predominantly and permanently posted within three (3) feet of the electrical panels.
- 10.3.10. **Minimum Parcel Size:** For a small wind turbine the minimum acreage is one (1) acre. Up to three (3) small wind turbines are allowed on three (3) acres. Numbers larger than three (3) turbines are considered wind farms and must meet requirements under the Commercial Wind Turbine Section 10.4 of this Chapter.

- 10.3.11. Engineered Drawings:** Building permit applications for small wind turbines shall be accompanied by standard drawings of the wind turbine, tower structure, electrical components, base and footings as supplied by the manufacturer and/or installer. All engineered drawings must have an Idaho engineer's stamp attached to it.

This engineer stamp will be kept on file in the Planning and Zoning/Building Department. An engineered analysis of the tower showing compliance with the Building Code and certified by a licensed professional engineer, shall also be submitted. A structural engineer should be used. All turbine units must meet the local and National Electric Codes and Building Codes of Madison County.

- 10.3.12. Homemade Systems:** Applications for experimental, homebuilt, or prototype of small wind turbines must be accompanied by documentation of blade throw distance and tower tip-over damage that would accompany any failure of the equipment. Setbacks must be adequate to these calculations. This is in addition to all other regulations of this Chapter.

- 10.3.13. Utility Notification:** No small wind turbine system shall be installed until evidence has been presented that the utility company has been informed of the customer's intent to install an inter-connected customer-owned generator. Notification in writing by certified letter shall be required. Off-grid systems shall be exempt from this requirement.

- 10.3.14. Abandonment:** If any small wind turbine is inoperable for six (6) consecutive months, the owner shall be notified, by certified mail, that they must, within six (6) months of receiving the notice, restore their system to operating condition. If there is no intent to restore the equipment by the owner, the owner shall be required, at their own expense, to remove the small wind turbine from the tower for safety reasons. The Planning and Zoning Department may also require removal of the tower.

- 10.3.15. Access Safety:** Any climbing foot pegs or rungs below 12 feet of a free-standing tower shall be removed to prevent unauthorized climbing.

- 10.3.16. Electromagnetic Interference:** Small Wind Turbines can cause interference within microwave communication links, fixed broadcast equipment, retransmission facilities, reception antenna (including residential television), radio, satellite television, wireless phone, or all other communication systems. This must be taken into consideration before installing a small wind turbine. Those who have prior installations of the above communication facilities shall have prior rights. No turbine shall be installed in the proximity of these facilities. The wind turbine manufacturer and County will have information and advice concerning this potential problem.

- 10.3.17. Be a Good Neighbor:** It is suggested that before a small wind turbine is installed, that all nearby neighbors be contacted to determine if the turbine will obstruct a special view, cause noise pollution, or be a nuisance in any way.
- 10.3.18. Advertisement:** No advertisement shall be allowed.
- 10.3.19. Fall Down Area:** Must have a radius of the height of the tower, plus 10 feet, in case it should collapse. The minimum required setback distance between each Small Wind Turbine Tower and all surrounding property lines, overhead utility lines, and any other Small Wind Turbine towers, above-ground generation facilities, shall be no less than the proposed structure height plus the rotor radius diameter plus ten (10) feet.
- 10.3.20. Color:** Wind Turbines shall be painted a non-reflective, non-obtrusive color.

#### **10.4 STANDARDS OF COMMERCIAL WIND TURBINES**

- 10.4.1. Setbacks:** Each Commercial Wind Turbine shall comply with the following requirements:
- **Communication and Electrical Lines:** Two (2) times the total height from the nearest above-ground public electric line or telephone line.
  - **Inhabited Structures:** One (1) mile from the nearest existing residence, school, church, hospital, place of employment or public library (facility), unless mitigation has taken place and agreed by owner/operator and affected property owners involved and recorded in the Madison County Recorder's Office which describes the benefitted and burdened properties and which advises all subsequent owners of the burdened property.
  - **Property Line:** Three (3) times its total height from the nearest property line unless mitigation has taken place and agreed by owner/operator and affected property owners involved and recorded in the Madison County Recorder's Office which describes the benefitted and burdened properties and which advises all subsequent owners of the burdened property.
  - **Public Roads:** One and a half (1.5) plus 100 feet times the total height from the nearest public road and right-of-way.
  - **Railroads:** Two (2) times its total height from all railroads and right-of-ways.
- 10.4.2. Spacing:** Commercial Wind Turbines shall have a minimum separation distance of two (2) times the total height of the tallest

Commercial Wind Turbine tower from other Commercial Wind Turbines.

- 10.4.3. Minimum Ground Clearance:** The tip of the blade shall be, at its lowest point, have a ground clearance of no less than 75 feet.
- 10.4.4. Height:** Tower height cannot exceed ~~450~~ 300 feet.
- 10.4.5. Design:** The design of the buildings and related structures shall, to the extent reasonably possible, use materials, colors, textures, screening and landscaping that will blend the facility to the natural setting and existing environment. Commercial Wind Turbines shall be painted a non-reflective, non-obtrusive color.
- 10.4.6. Lighting:** Shall not be artificially lighted, except to the extent required by the Federal Aviation Administration (FAA) or other applicable authority. During the night time and overcast daytime conditions, strobe lighting may be required to satisfy tower facility lighting requirements for the Federal Aviation Administration (FAA)
- 10.4.7. Advertising:** Commercial Wind Turbines shall not be used for displaying any advertising except for reasonable identification of the manufacturer or operator. Any such identification shall not appear on the blades or other moving parts or exceed six (6) square feet.
- 10.4.8. Control Panels:** Electrical controls and control wiring and power-lines shall be wireless or not above ground except where wind farm collector wiring is brought together for connection to the transmission or distribution network, adjacent to that network.
- 10.4.9. Public Access Roads:** Routes of public travel to be used during the construction phase shall be documented by the Madison County Road Department. The public travel route will be re-inspected 30 days after completion; any and all repairs must be completed on the public roadway within 90 days of the end of the construction project paid entirely by the developer.
- 10.4.10. Reclamation:** A signed statement by the landowner acknowledging that the operator and owner are financially responsible if the owner/operator fails to reclaim the site as required, and that any removal and reclamation costs incurred by Madison County will become a lien on the property and may be collected from the landowner in the same manner as property taxes.
- 10.4.11. Wiring:** All wiring between Commercial Wind Turbines and the substation shall be underground.
- 10.4.12. Access:** Commercial Wind Turbines shall not be climbable up to fifteen (15) feet above ground level. All access doors to the Wind Turbine Towers and electrical equipment shall be lockable and locked when unattended.

- 10.4.13. Signage:** Appropriate warning signage shall be in place on all Commercial Wind Turbine Towers, electrical equipment and facility entrances.
- 10.4.14. Wind Measurement:** A certified wind study using an anemometer shall be performed during the five-month prime wind period of May until September at the proposed site prior to the hearing application filing. Any certified study within a one-half mile distance of the proposed installation site shall meet with the requirements of this Chapter. This study shall be provided to the Administrator. Confidential data may be marked out for the public access file.
- 10.4.15. Emergency Shut Off:** No Commercial Wind Turbine Tower Facility shall be permitted that lacks an automatic braking, governing or feathering system to prevent uncontrolled rotation, over speeding, and excessive pressure on the tower structure, rotor blades, and turbine components. Procedures for emergency shutdown of the power generation units shall be established and posted prominently and permanently within three (3) feet of the meter panel.
- 10.4.16. Minimum Site Allowance:** The minimum distance between the ground and any part of the rotor blade system shall be 20 75 feet.

## 10.5 APPLICATION PROCESS

**For Commercial Wind Turbines:** An application shall be considered complete when a site plan and the following specifications that are required are submitted and fees are received by the Planning and Zoning Department.

- 10.5.1. Site Plan:** Must submit a site plan identifying all property lines, existing buildings, proposed buildings, parking areas, utilities, signs, neighboring property, proposed transmission lines, and any other information that may be required to determine if the use is within the intent and requirements of this Chapter.
- 10.5.2. Phasing:** If the project will be developed in phases, lines must be identified on the detailed site plan. Each phase must be completed within twenty-four (24) consecutive months or the project will become null and void and the owner/operator must reapply for a new permit and pay the fees and comply with current regulations.
- 10.5.3. Construction Timeline:** A timeline prior to the construction phase of the project shall be submitted to the Administrator identifying the starting and completion date of all construction.
- 10.5.4. Engineered Drawings:** Building permit applications for shall be accompanied by standard drawings of the wind turbine, tower structure, electrical components, base and footings as supplied by the manufacturer and/or installer. All engineered drawings must have an

Idaho engineer's stamp attached to it. This engineer stamp will be kept on file in the Planning and Zoning Department. An engineered analysis of the tower showing compliance with the Building Code and certified by a licensed professional engineer shall also be submitted. A structural engineer should be used. All turbine units must meet the local and National Electric Codes and Building Codes of Madison County.

- 10.5.5. Compliance:** Must submit evidence of compliance with the Federal Aviation Administration (FAA), United States Fish and Wildlife services, Idaho Fish and Game, DEQ, and the Rexburg/Madison County Fire and Emergency Services. These shall be submitted by the applicant to the Administrator prior to the issuance of a building permit. If an area is identified by any Fish and Game or Wildlife Services to house a significant population of Bald or Golden Eagles, a monopole tubular-type tower shall be used instead of a lattice type tower.
- 10.5.6. Elevation Model:** Commercial Wind Generating Facilities shall provide a digital elevation model-based project visibility map showing the impact of topography upon visibility of the project from other locations throughout the region, to a distance of five (5), ten (10) and twenty (20) miles from the center of the project. The scale used shall depict the radius no smaller than 2.7 inches, and the base map shall be a published topographic map showing cultural features and other landmarks.
- 10.5.7. Color photographs:** At least three (3) inches by five (5) inches, taken from several locations within a five (5), ten (10) and twenty (20) mile radius of the boundaries of the commercial facility site, shall be provided. Said photographs shall be computer enhanced to simulate the appearance of the as-built above ground site facilities as such would appear from said locations.
- 10.5.8. Bond:** An appropriate **continuous renewal bond amount** with a minimum amount of one million dollars (\$1,000,000) will be set for each Commercial Wind Turbine for decommissioning should the owner/operator fail to comply with this Chapter's requirements or the Commercial Wind Turbine does not operate for a period of **12** consecutive months. The bond must be active for the life of the Commercial Wind Turbine project. Each commercial contractor shall be bonded by the State of Idaho when they get their contractor's license.
- 10.5.9. Liability Insurance:** Prior to issuance of a building permit for a Commercial Wind Turbine and continuing after construction until such facility is removed from the site, the applicant shall provide documentation satisfactory to Madison County and at such reasonable intervals as determined by the Administrator of existence of liability insurance coverage of one million dollars (\$1,000,000) per project on for property damage, injury or death resulting from the

construction, placement, use, maintenance, and operation of a Commercial Wind Generation Facility, by the developer of the site.

**10.5.10 Public Access Roads:** Routes of public travel to be used during the construction phase shall be documented by the Madison County Road Department. Developer must submit approval letter from the Madison County Road Department.