

# IRON COUNTY

## PROPOSED WIND ENERGY ORDINANCE

### Document 1 of 3: Planning Commission Recommendation for Amendments to Iron County Code Chapter 17.34

#### CHAPTER 17.34 Wind Energy Systems and Facilities

##### **17.34.010 Purpose:**

The purpose of this Chapter (17.34) is to establish minimum requirements and regulations for the placement, construction and modification of small wind energy systems, commercial wind energy systems, and wind metering towers and equipment, as defined herein, while promoting the safe, effective and efficient use of such systems.

##### **17.34.020 Definitions:**

- A. Shadow Flicker:** Alternating changes in light intensity caused by the moving blade of a wind energy system casting shadows on an object, such as a window.
- B. Total Extended Height** means the distance measured from ground level to the tip of the blade, extended at its highest point of travel.
- C. Tower** means the supporting structure on which the turbine is mounted.
- D. Turbine** means that portion of the wind system that is used to capture the energy of the wind and transform it into electrical or mechanical energy. The turbine includes a rotor (blades) and nacelle (generator), and on many wind systems a tail.
- E. Wind Energy System, Commercial** means a wind energy conversion system consisting of one or more wind turbine(s) and tower(s), with associated control or conversion electronics, which will be used for on-site and/or off-site consumption of power with a rated capacity in excess of 100 kW.
- F. Wind Energy System, Small** means a wind energy conversion system consisting of a wind turbine, a tower or other support structure, and associated control or conversion electronics with a rated capacity appropriate to the on-site electric usage of the end-use and which will be used primarily to reduce on-site consumption of utility power. A small wind energy system may have a rated capacity of up to 100 kW.
- G. Wind Monitoring Tower and Equipment-Meteorological (Met) Tower** means a tower

that houses or supports wind measuring equipment, such as an anemometer, for the purpose of measuring and monitoring wind velocity, duration, intensity, regularity, air temperature and pressure, etc... Met towers are typically permitted only on a temporary basis (2-5 years) to help determine the viability of a wind energy system project; although more permanent met towers may also be considered.

**H. Wind Turbine, Horizontal-Axis (HAWT)** means a wind turbine designed to have the axis of rotation aligned with the direction of the wind, such as with the common propeller type models.

**I. Wind Turbine, Vertical-Axis (VAWT)** means a wind turbine designed to have the axis of rotation perpendicular to the wind direction.

### **17.34.030 Requirements - Wind Energy System, Small**

**A. Permitted Locations and Number.** A small wind energy system that complies with the provisions of this section is permitted only as described in Section 17.16.030, Table of Uses, Iron County Zoning Ordinance, and in accordance with the following:

Only one small wind energy system may be authorized per lot, with the following exceptions:

a. Up to four small wind energy systems may be authorized as permitted uses on lots that are 20 acres or larger and zoned A-20, C, LI, I, or I-A.

b. In the R-5, R-2 and R-1 zones, up to two small wind energy systems may be authorized as permitted uses when the small wind energy systems are vertical-axis wind turbines and do not exceed 35 feet in height.

c. Schools, churches, public service entities, and similar public and non-profit entities located on lots larger than five acres may request additional wind turbines through the conditional use permit review process.

Note that multiple small wind energy systems may require greater noise setbacks than single systems, as addressed in C(5) below.

**B. Minimum Lot Size.** A horizontal-axis small wind energy system may only be erected on a lot that is at least two acres in size and capable of meeting the setback requirements of this section. A vertical-axis small wind energy system, whether mounted vertically or horizontally, may only be erected on a lot that is at least one acre in size and capable of meeting the setback requirements of this section.

### **C. Design Standards.**

**1. Pole or Tower Design.** The design of the small wind energy system may include a monopole/freestanding design, or a guy-wired tower, whether mounted on the ground or on a building.

**2. Total Extended Height.** The total extended height of the small wind energy system shall not exceed 35 feet if located on a lot zoned R-1, 80 feet if located on a lot zoned R-2; 100

feet if located on a lot zoned R-5; or, 125 feet if located on a lot that is zoned A-20, C, LI, I or IA. Sufficient clearance to lower and raise the tower and turbine is to be provided and maintained.

**3. Safety.**

- a. The minimum height of the lowest extent of a turbine blade/rotor shall be 20 feet above the ground, if on a horizontal axis turbine. There is no minimum rotor height for a vertical-axis turbine, provided the blades/rotor must be located or isolated (e.g. fenced) such that they are not easily accessible to anyone but maintenance personnel.
- b. No tower shall have an external climbing apparatus within 12 feet of the ground. All access doors or access ways to towers and electrical equipment shall be locked when not in use.
- c. Appropriate warning signage/markings is to be placed on towers, guy wires, and electrical equipment.
- d. All small wind energy systems must have a manufacturers' maximum RPM (revolutions per minute) rating of less than 500.

**4. Setbacks.** In determining the required separation of a small wind energy system from the uses listed, all applicable setbacks are to be followed—where multiple setbacks are applicable, the most restrictive applies.

- a. **Property lines.** For safety purposes, a small wind energy system shall be set back from the nearest property line, public road right-of-way, tanks containing combustible/flammable liquids, and above-ground communication or electrical lines not less than 1.1 times its total extended height if located on a freestanding tower or pole, or if mounted on a building, the distance of the likely fall zone.
- b. **Inhabitable or Public Structures.** For safety, aesthetic, and noise purposes, a small wind energy system shall be set back from all existing inhabitable structures (residences, places of work, etc.) not on the property, and from all public buildings and gathering places (e.g. church, hospital, school, library, park, playground, etc.) not on the property at least 1.5 times the total extended height of the system, or 50 feet, whichever is greater.

Additional setbacks from neighboring residences and residentially-zoned lots are set forth in (C)(5) below.

**5. Noise Limitations and Additional Setbacks.**

To reduce noise impacts to neighboring residential properties, no small wind energy system or combination of small wind energy systems shall produce noise that exceeds 50 dBA, as measured at the property line of any neighboring residentially-zoned lot not owned by the small wind energy system developer (Note: Public road right-of-way counts towards the setback); nor shall any small wind energy system or combination of small wind energy systems produce noise that exceeds 45 dBA, as measured immediately outside any neighboring residence that is existing or permitted at the time the permit for the wind energy system is submitted.

- a. **Separation of Multiple Systems:** If more than one small wind energy system is proposed and the setback from a neighboring residence or residential property line is

applicable, professional documentation (e.g. a noise study) shall be submitted indicating that the above noise limitations will be met. A situation with multiple small wind energy systems must consider the effects of combined noise levels (may add up to 3 dB) and the appropriate sound propagation calculations (whether line source properties apply to the situation).

b. **Single Systems:** To establish the minimum setback(s) necessary to comply with the above noise limitations in situations of single wind energy systems, the applicant shall provide from a reliable source the noise emission level (a.k.a. noise rating) of the system, as measured at a specified distance from the rotor or tower and at a given wind speed (e.g. 52 decibels at 100 feet from the tower, 30 mph wind). Any noise rating must be based on at least a 10 m/s (22.3 mph) wind speed to qualify for use. If the proposed setback is at least as far as the distance used for the noise rating, and the noise rating is less than the above noise limits, then no further calculations are necessary. Otherwise, the following calculations can be utilized to determine if the proposed setback is sufficient to comply with the above noise limits:

Step 1: Calculate the difference in decibels (dB) that would occur at the neighboring residential property line and/or residence, as applicable, versus the noise level at the distance used for the noise rating statement.

Equation: 
$$\text{dB difference} = 20 \times \text{Log}_{10} \text{ of } (\text{Distance A} / \text{Distance B})$$

Where “Distance A” is the distance from the system used to establish the noise rating, and “Distance B” is the proposed distance between the wind energy system and the neighboring residential property line and/or residence.  $\text{Log}_{10}$  stands for Logarithm to the base 10. (Note: Simplified calculators are available on the internet. The above equation is based on the general rule that sound in the clearly audible frequency range will reduce 6 dB for every doubling of distance from the source, assuming a single source of sound.)

Step 2: The result of the above equation is a negative number, which represents the reduction in decibels from Distance A to Distance B. Subtract the absolute value (positive equivalent) of that number from the noise rating of the system and compare the answer to the applicable maximum allowable noise level (50 dbA and/or 45 dbA). If the result is less than the maximum allowable noise level, the proposed location is acceptable, provided all other applicable setbacks are met.

In situations where a noise rating is not available on a specific model, the County may either require a noise study to be performed by a qualified professional, or make a conservative estimate based on a wind energy system of similar characteristics (blade type and size, RPM speed, rated output, rotor diameter, start-up speed, etc.) plus a safety factor of 3 dB to establish the required setback.

Compliance with the setbacks established through the above equation shall be deemed sufficient to comply with the noise limitations of this sub-section (C)(5), for permitting and enforcement purposes; provided, failure of the system to operate at or below the rated

noise emission level due to worn, damaged, or broken parts, shall constitute non-compliance and the system shall be shut down until repairs are made to bring the system back into compliance. High-wind occurrences may result in noise levels above that calculated, as the noise ratings are based on high, but not extreme wind speeds—noise resulting from such high-wind occurrences does not constitute non-compliance with this section.

If the noise rating is based on 100' from the source, the following table may be used for quick reference. If the noise rating is based on 50' from the source, simply subtract 6 dB from the noise rating and follow the row across to find the setback equivalents. If the noise rating is based on some other distance, use the equation above. (Note: The following table is not applicable to situations with multiple small wind energy systems or to commercial wind energy systems)

dB Rating at 100' from Source	Setback Equivalent of 50 dB, in feet	Setback Equivalent of 45 dB, in feet
65	563	1,000
64	501	891
63	447	794
62	398	708
61	355	631
60	317	563
59	282	501
58	252	447
57	224	398
56	200	355
55	178	317
54	159	282
53	142	252
52	126	224
51	113	200
50	100	178
49	89	159
48	79	142
47	71	126
46	63	113
45	56	100
44	50	N/A
43	45	N/A
42	40	N/A
41	35	N/A
40	31	N/A
39	28	N/A

38	25	N/A
37	22	N/A
36	20	N/A
35	18	N/A

**6. Visual Standards.**

- a. Small wind energy systems are to be finished and maintained as manufactured.
- b. No small wind energy system shall be lighted unless required by the Federal Aviation Administration (FAA). When lighting is required by the FAA, it shall be the red, intermittent, glowing style, rather than the white, strobe style, unless disclosed and justified through the application review process.
- c. No advertising signs of any kind or nature whatsoever shall be permitted on any small wind energy system.
- d. The design of any accessory buildings or related structures shall, to the extent reasonably possible, use materials, colors, textures, screening and landscaping that will blend the facility into the natural setting and existing environment.
- e. The property owner shall reasonably attempt to site the system at a location that minimizes the potential for shadow flicker impacts to their own and neighboring residences.

**7. Electrical Interconnections.** All electrical interconnection or distribution lines shall be underground and comply with all applicable codes and public utility requirements.

**8. Signal Interference.** Efforts shall be made to site small wind energy systems to reduce the likelihood of blocking or reflecting television and other communication signals. If signal interference occurs, both the small wind energy system owner and individual receiving interference shall make reasonable efforts to resolve the problem. No small wind energy system shall cause permanent and material interference with television or other communication signals.

**9. Overspeed Controls.** Every small wind energy system is to be equipped with an automatic overspeed control, braking system, or feathering system.

**10. Fire Protection.** All small wind energy systems are to be provided with a defensible space for fire protection, in accordance with the Iron County Wildland-Urban Interface Code.

**D. Permit Applications.** A building permit is required for a small wind energy system. The application is to include the following information.

- 1. A Site Plan,** drawn to scale, showing the location of the proposed small wind energy system; the locations of all existing buildings and structures, dimensioned to the property lines; the location of any septic system, well, utility line or easement, access easement, or any tank containing flammable materials on the property; the area required for raising and lowering the tower; the defensible space area required by the Urban-Wildlands Interface Code; and the applicable setbacks for the small wind energy system.

2. **Noise Compliance Documentation.** Provide the information necessary to demonstrate that the applicable noise requirements of 17.34.030(C)(5) will be met.
3. **Standard drawings.** Engineered plans and calculations shall be required to obtain a building permit for a small wind energy system. Plans and calculations shall be stamped, dated and signed in accordance with Utah state codes, ordinances, and laws governing such actions, by an engineer licensed and in good standing with the state of Utah. Plans and calculations must verify that the structure is designed and capable of withstanding the conditions of the site, including but not limited to wind load, snow load, seismic conditions, and soil conditions, as required by the Iron County Building Department. Soils testing by a qualified soils engineer that is licensed by, and in good standing with, the state of Utah may be required.
4. **Specific information** on the type, model, size, rotor material, rated power output, rated rotor speed, overspeed safety features, and survival wind speed, as well as the name and address of the manufacturer is to be provided. These items are typically included in a specification sheet available from the manufacturer.
5. **A line drawing** of the electrical components of the system in sufficient detail to establish that the installation conforms to all applicable electrical codes.
6. **Net metering agreement.** If the system will be connected to the electricity grid the applicant must provide documentation with the building permit that the required net metering agreement is being considered by the utility company (e.g. work order number status). The fully-executed net metering agreement must be provided to the building inspector prior to operation of a system that will be connected to the grid.

**17.34.035 The Wind Energy Overlay Zone.** The Wind Energy Overlay Zone is established by Iron County Code 17.16.020(G) and on the official zoning map, to regulate where commercial wind energy systems may, and may not, be considered.

To qualify for a rezone to the Wind Energy Overlay Zone, the rezone applicant must demonstrate the following, in addition to the criteria of Iron County Code 17.12.060:

- A. That there has been site-specific wind testing conducted within the proposed rezone area and that the results indicate wind resources in an amount that is likely to support a viable commercial wind energy system. If the applicant has a concern about revealing the wind data, or if the County is unable to determine if the wind data represents a viable wind resource, a simple “yes or no” determination from a qualified third party may be required.
- B. That the following viewshed preservation policy will be met: It is the intent of the County to protect the natural scenic views that are most prominent from the developing areas of the Parowan Valley, Cedar Valley, and New Harmony/Kanarraville Valley from significant alteration. As such, any proposed wind energy rezone that may negatively

affect these natural scenic views will be highly scrutinized for potential visual impacts, must be limited to a small area of the viewshed, and cannot result in an unacceptable cumulative impact to the viewshed when combined with any other wind energy project(s). Applications for the wind energy overlay zone must include sufficient visual simulations and analysis to support such a determination.

- C. That unless the land use authority finds that circumstances are such that a reduced setback is justified, no Wind Resource Overlay zone is to be located:
- a. Within three miles of a Tier II or III growth area;
  - b. Within three miles of the Enterprise annexation area;
  - c. Within three miles of a national monument or national park.

Circumstances that may justify a reduced setback include, but are not limited to, situations where: the rezone applicant and primary user of the power is a city/town and the property is in close proximity to the town; there is an intervening physical feature, such as a hill or mountain, that would prevent the negative impacts of the commercial wind energy systems from reaching the protected area; or, the nearest portion of the growth area is in a conservation easement or open space designation that prevents its use for residential purposes.

#### **17.34.040 Requirements - Wind Energy System, Commercial**

The following standards shall apply to all commercial wind energy systems:

- A. Wind Energy Overlay Zone Requirement and Notice of Application.** A commercial wind energy system may be permitted as described in Section 17.16.030, Table of Uses, Iron County Zoning Ordinance, only when the Wind Energy Overlay Zone has been applied to the property. If a property is not currently within the Wind Energy Overlay Zone a rezone must be authorized before a development permit (conditional use permit) may be considered. Notice of a conditional use permit application for a Commercial Wind Energy System, shall include notice through U.S. mail of the date, time and place of the public hearing to owners of all properties within 1¼ miles of any proposed wind turbine location, based on the County Assessor's records. The notice shall be mailed by the County at least 10 days prior to the hearing, at the applicant's expense.
- B. Design Standards.** A commercial wind energy system shall comply with the design standards set forth below.
- 1. Pole or Tower Design.** The design of the commercial wind energy system shall be of monopole or freestanding design with no guy wired towers. No open-lattice style towers are permitted, unless they are entirely clad with a suitable cover, such as an architectural fabric, and engineered to consider the additional forces related to the covering.
  - 2. Minimum Blade Height.** The minimum height of the lowest extent of a turbine blade shall be 30 feet above the ground and 15 feet above any structure or obstacle within the fall zone of the tower.

**3. Safety / Access.**

- a. No tower shall have an exterior climbing apparatus within 12 feet of the ground. All access doors or access ways to towers and electrical equipment shall be locked.
- b. Appropriate warning signage shall be placed on towers, electrical equipment and wind energy system entrances.

**4. Setbacks.** In determining the required separation of a commercial wind energy system from the uses listed, all applicable setbacks are to be followed—where multiple setbacks are applicable, the most restrictive applies.

- a. **Project Boundary Lines.** A commercial wind energy system tower shall be set back from all project boundary lines, existing publicly-maintained roads, tanks containing combustible / flammable liquids, and above-ground communication or electrical lines, not less than 1.25 times its total extended height.
- b. **Other uses.** No commercial wind energy system shall be located within one-half (½) mile of a park, church, hospital, school, playground, or residentially-zoned lot not owned or leased by the wind energy developer. Additional separation may be required to sufficiently mitigate noise and shadow flicker resulting from the commercial wind energy system.
- c. **Spacing.** Commercial wind energy system towers shall be spaced on center no closer than 1.1 times the total extended height.

Additional setbacks from neighboring residences and residentially-zoned lots are set forth in subsequent sections for noise and shadow flicker—(B)(5) and (B)(7)(e).

- 5. Noise.** Except when a professional noise study is submitted that properly demonstrates that the noise thresholds specified below will not be exceeded with a lesser setback, all commercial wind energy turbines shall be located a minimum of 2 km (1.24 miles or 6,562 ft.) from all existing inhabitable structures (residences, places of work, etc.) and residentially-zoned lots that are not owned or leased by the wind energy developer. Provided, in situations of mountainous topography where the sound could be reflected/channeled towards a residential area, or when the proposed wind turbines are rated more than 3.0 MW, the land use authority may determine that a noise study is warranted to ensure sufficient setbacks to meet the following noise thresholds. With the exception of such an instance, compliance with the 2 km setback shall be deemed sufficient to be in compliance with the noise restrictions for commercial wind energy systems and a noise study is not needed. A noise study, when required, shall be peer reviewed by an independent qualified party, with the associated costs born by the developer. If a reduced setback is authorized, failure to operate within the noise limits specified constitutes a violation of this ordinance.

Thresholds for Noise Studies:

No commercial wind energy system shall produce sound at any time, as measured at any neighboring residentially-zoned lot or 100 feet from any existing inhabitable building that is not owned or leased by the wind energy developer, that exceeds the lesser of:

- a) 35 dBA (LAeq);
- b) 5 dB above the pre-existing (L90), nighttime background noise level of the area

- (measured in contiguous 10-minute intervals), whether measured as dBA (LAeq) or dBC (LCeq);
- c) 55 dBC (LCeq) if measured in a rural environment (outside a Tier I, II or III area);
  - d) 60 dBC (LCeq) if measured in a suburban environment (within a Tier I, II or III area);
  - e) Provided, a 5 dB penalty shall be applied for amplitude modulation-- meaning the maximum sound threshold is 5 dB less than the amount specified in “a” above.

All procedures relating to sound measurement are to comply with standard professional practices, such as ANSI 12.9, Part 3, and be conducted by qualified acoustical consultants. To avoid errors in the estimates and to properly account for worst-case scenarios of sound generation, the calculations must include the 5 dBA penalty/addition for amplitude modulation (the spike above the average noise level as a blade passes the tower, which is a 5 dBA spike when the blades from two or more turbines are synchronized), the addition of 3 dB for coherent reflection (additional sound reflecting off the ground), and consideration of the additional sound created by turbulent inflow (atmospheric turbulence due to wind shear, etc.).

- 6. Setback and Noise Waivers.** Voluntary waivers or reductions of the setback and noise limits established by 17.34.040(B)(4)(a) and (b), and 17.34.040(B)(5) may be accepted from those neighboring property owners that otherwise would be within a setback required by one or more of these sections. The agreement(s) must specifically state the County setback and/or noise standard(s) being waived or reduced, the extent of the waiver, and be in the form of a legally binding contract or easement between the landowner (including assignees in interest) and the wind energy developer, effective for the life of the project. Notwithstanding any such voluntary agreement between the landowner and the wind energy developer, the agreement shall only be effective and reflected in the County’s authorization of the project when it has been reviewed and determined acceptable to the County. The County shall consider the likely impacts and consequences of the waiver or reduction of the setback and/or noise limit, based on the specific circumstances of the situation, in determining whether to grant the request. Any voluntary waiver or reduction agreement must be submitted with the conditional use permit application and if authorized by the County, must be filed with the County Recorder upon issuance of the conditional use permit.

**7. Visual Appearance.**

- a. Commercial wind energy systems shall be finished and maintained in color and material as manufactured.
- b. No commercial wind energy system shall be lighted unless required by the Federal Aviation Administration (FAA). When lighting is required by the FAA, it shall be the red, intermittent, glowing-style, rather than the white, strobe-style, unless disclosed and justified through the application review process.
- c. No advertising signs of any kind or nature shall be permitted on any commercial wind energy system.
- d. Accessory buildings or related structures shall, to the extent reasonably possible, use

materials, colors, and textures that will blend the facility into the existing environment.

e. Commercial wind energy systems must be located such that they will not result in any significant amount of shadow flicker on a major public roadway, or on any inhabitable structures or residentially-zoned lots not owned or leased by the wind project developer/lessor, unless an easement to do so is obtained from the affected property owner and presented with the application. A shadow flicker analysis is required with the application if there are any inhabitable structures or residentially-zoned lots not owned or leased by the wind energy developer, or major public roadways, within 1.25 miles of the turbine.

f. Appropriate landscaping or screening materials may be required to help screen accessory structures from major roads and adjacent residences. Lighting of accessory structures and substations shall be limited to the minimum necessary and full cut-off lighting (e.g. dark sky compliant) may be required for accessory structures when determined necessary to mitigate visual impacts.

**8. Electrical Interconnections.** All electrical interconnection and distribution lines within the project boundary shall be underground, unless determined otherwise by the planning commission because of severe environmental constraints (e.g. wetlands, cliffs, hard bedrock), and except for power lines within a substation. All electrical interconnections and distribution components must comply with all applicable codes and public utility requirements. Transmission lines (33.5 kV lines and above) coming to or leaving the project may be overhead.

**9. Signal Interference.** Efforts shall be made to site commercial wind energy systems to reduce the likelihood of blocking or reflecting television and other communication signals. If signal interference occurs, both the commercial wind energy system owner and individual receiving interference shall make reasonable efforts to resolve the problem. No commercial wind energy system shall cause permanent and material interference with television, cellular, or other communication signals.

**10. Fire Protection.** All wind energy systems shall have a defensible space for fire protection in accordance with the Iron County Wildland-Urban Interface Code.

**C. Permit Applications.** An application for a conditional use permit to establish a commercial wind energy system shall include a complete description of the project and documentation to sufficiently demonstrate that the requirements set forth in 17.34.040(B) will be met. Supporting documentation for addressing the review criteria of 17.34.040(D) and 17.28.050(A) is also to be provided. The land use authority may require any information reasonably necessary to determine compliance with this section.

It is preferred that any related conditional use permit applications for substations or transmission lines be considered in conjunction with the conditional use permit application for the commercial wind energy system; however, if the details of those improvements are not available at the time of application for the commercial wind energy system, they may be considered later, through subsequent conditional use permit review. At a minimum, the intended route for connecting to the power grid and the alternative locations of any substation

shall be disclosed with the application for the commercial wind energy system.

Due to the complexity of large-scale commercial wind energy projects, the County may require a development agreement or other appropriate instrument to address taxing, land use, property assessment, and other issues related to the project. For example, the County is interested in preventing large tax shifts that may otherwise be incurred by County residents each year the centrally-assessed wind energy project is depreciated; therefore, cooperation to establish an agreement for payment in lieu of taxes (PILT), or other acceptable solutions may be necessary. A development agreement or substitute agreement may be required as a condition of the permit, and must be approved by the Board of County Commissioners prior to commencing construction.

**D. Conditional Use Permit.** Following the provisions of Chapter 17.28, Iron County Code, additional or more thorough consideration shall be given to the following as the County determines whether the project needs to be approved, denied, or conditionally approved:

1. **Project Rationale**, including estimated construction schedule, project life, phasing, and likely buyers or markets for the generated energy.
2. **Siting Considerations**, such as avoiding areas/locations with a high potential for biological conflict such as wilderness study areas, areas of critical environmental concern, county and state parks, historic trails, special management areas or important wildlife habitat; avoiding visual corridors that are essential view sheds or scenic areas designated by the County after analyzing the applicant's wind energy system proposal and considering public hearing comments; avoiding areas of erodible slopes and soils, where concerns for water quality, landslide, severe erosion, or high stormwater runoff potential have been identified; and, avoiding known sensitive historical, cultural or archeological resources.
3. **Site and Development Plans**, which locate and describe the project boundaries, all existing and proposed structures, setbacks, access routes, proposed road improvements, existing inhabitable structures and residentially-zoned lots within 1¼ miles of the project, existing utilities / pipelines / transmission lines, proposed utility lines / structures, existing topography, existing and proposed drainageways, proposed grading, natural vegetation removal, revegetation actions, dust and erosion control, any floodplains or wetlands, and other relevant items identified by county staff or planning commission. All maps and visual representations need to be drawn at an appropriate scale.
4. **Analysis of Local Economic Benefits**, describing estimated: project cost, generated property taxes and local sales taxes, percent of construction dollars to be spent locally, and the number of local construction and permanent jobs.
5. **Visual impacts, appearance and scenic view sheds.** Potential visual impacts include, but are not limited to, wind towers, rotors, above-ground electrical lines, accessory structures, access roads, utility trenches and installations, and alteration of vegetation. The applicant must provide a viewshed analysis of the project, including visual

simulations of the wind energy systems and any significant planned structures or improvements, such as new roads on a hillside or substations. The number of visual simulations shall be sufficient to provide adequate analysis of the visual impacts of the proposal, which shall be from no less than four vantage points that together provide a view from all sides of the project. More visually-sensitive proposals may require analysis from significantly more vantage points, such as different distances and sensitive locations. The Planning Commission may also require a Zone of Theoretical Visibility/ Zone of Visual Impact (ZVI) Analysis, which is a 360-degree computer analysis to map the lands within a defined radius of a location that would likely be able to see an object—in this case the proposed wind energy system (or a portion thereof).

- 6. Wildlife habitat areas and migration patterns, including avian and bat data for the project area.** Specifically include information on any use of the site by endangered or threatened species and whether the project is in a biologically significant area. If threatened or endangered species exist, consultation with USDFW will be necessary. A plan for ongoing monitoring after the project is operational for bird, bat, or other wildlife impacts may be required.
- 7. Environmental Analysis.** In the absence of a required State or Federal Agency environmental review for the project, (e.g. NEPA), the Planning Commission may require an impact analysis on historic, cultural and archaeological resources; soil erosion; and flora in the area of the project. The land use authority is to consider any impacts to such resources when determining whether to approve, condition or deny a project.
- 8. Solid waste or hazardous waste.** The application must include plans for the spill-prevention, clean-up, and disposal of fuels, oils, and hazardous wastes, as well as collection methods for solid waste disposal. Verification that all construction waste generated from the project has been removed from the area will be required before a certificate of occupancy may be issued.
- 9. Height restrictions and FAA Hazard Review.** Compliance with any applicable airport overlay zoning requirements and the ability to comply with FAA regulations pertaining to hazards to air navigation must be demonstrated.
- 10. Transportation Plan, for Construction and Operation Phases.** Indicate by description and map what roads the project will utilize during the construction and operation/maintenance phases of the project, along with their existing surfacing and condition. Specify any new roads and proposed upgrades or improvements needed to the existing road system to serve the project (both the construction and O&M periods)—remember to identify needed bridges, culverts, livestock fence crossings (gates and cattleguards), etc. Also identify all areas where modification of the topography is anticipated (cutting/filling) to construct or improve the roadways. Address road restoration or maintenance needs associated with the construction, ongoing maintenance/repair, and potential dismantling of the project. Provide projected traffic counts for the construction period, broken down by the general type/size of vehicles, and identify approximately how many trips will have oversized or overweight loads. The

County may require financial guarantees to ensure proper repair/restoration of roadways or other infrastructure damaged or degraded during construction or dismantling of the project. To provide a proper reference for restoration, the “before” conditions of the roadways and other infrastructure must be documented through appropriate methods such as videos, photos, and written records.

- 11. Public Safety.** Identify and address any known or suspected potential hazards to adjacent properties, public roadways, communities, aviation, radar systems, etc. that may be created by the project.
- 12. Noise limitations.** Submit sufficient information regarding noise, so as to demonstrate compliance with 17.34.040(B)(5).
- 13. Shadow flicker.** Identify the potential of any shadow flicker effects from the project and provide sufficient documentation to demonstrate compliance with 17.34.040(B)(7)(e).
- 14. Telecommunications interference.** Demonstrate that the potential for adverse electromagnetic fields and communications interference generated by the project has been evaluated and determined unlikely—conduct a Licensed Microwave Search and Worst Case Fresnel Zone (WCFZ) Analysis, including consultations with the National Telecommunications Information Administration (NTIA), Interdepartmental Radio Advisory Committee (IRAC) and the National Weather Service.
- 15. Agreement/easement for life of the project and final reclamation.** If the land on which the project is proposed is to be leased, rather than owned, by the wind development company, all property within the project boundary must be included in a recorded easement(s), lease(s), or consent agreement(s) specifying the applicable uses for the duration of the project.

Also describe the decommissioning and final land reclamation plan to be followed after the anticipated useful life, or abandonment, or termination of the project, including evidence of an agreement or other commitment (i.e. bond and/or sinking fund) with affected parties (county, any lessor or property owner, etc.) that ensures proper final reclamation of the wind energy project, as well as repairing any road impacts associated with the work. Any required leases, easements, bonds, or other agreements must be in place prior to commencing construction.

- 16. Other probable and significant impacts,** as identified through the review process.

#### **17.34.050 Requirements of Wind Monitoring Tower and Equipment (Met Tower)**

- A. Permissible Locations.** A wind monitoring tower may be located as described in Section 17.16.030, Table of Uses, Iron County Code; provided, a wind monitoring tower may be permitted in the R-1, R-2, and R-5 zoning districts only when it is for the purpose of investigating the feasibility of a small wind energy system, and when the monitoring tower

complies with the height and setback requirements for small wind energy systems, as identified in Sections 17.34.030(C)(2) and (4).

On lands containing the Wind Energy overlay zone, a wind monitoring tower located in an area zoned A-20, I, or IA for three years or less is deemed a permitted use, subject to compliance with 17.34.050(B)(1-6), provided that no road improvements are necessary, the tower is 100' or less in height, and FAA compliance is demonstrated. If road improvements are necessary, or the tower exceeds 100' in height, or more than three years is desired, a conditional use permit is required.

**B. Permit application.** A Wind Monitoring Tower and associated equipment may be permitted subject to the following:

1. **Owner Consent:** Evidence that the applicant is the owner of the property, or has written permission of the owner(s) to make such application.
2. **Use Duration:** Typically permitted for a maximum of 2-5 years, as specified in the permit, and as determined by evidence given at the time of application regarding known wind source data.
3. **Height:** The allowable height of a monitoring tower not otherwise limited by 17.34.050(A) will be established through the Conditional Use Permit review.
4. **Setbacks:** The setbacks for a met tower from the exterior property lines of the project, publicly maintained road rights-of-way, above-ground communication or electrical lines, and tanks containing combustible/flammable liquids shall be at least 1.1 times its total height.
5. **Tower Security:** Any climbing apparatus must be located at least 12 feet above the ground and the tower must be designed to prevent climbing within the first 12 feet; or, the tower must be protected by an 8-foot tall security fence. The tower is recommended to be enclosed with an appropriate fence when there is OHV or livestock use in the area.
6. **Other:** As determined by County Staff and/or Planning Commission, other significant health, safety and general welfare issues may need to be addressed.

#### **17.34.060 Non Use**

- A. Any small wind energy system or commercial wind energy system that has been permitted by this ordinance which is not used for two consecutive years, excluding up to six months for repairs, shall be removed within the following six months. Failure to remove the system shall be deemed a violation of this ordinance.
- B. Any small wind energy system or commercial wind energy system which is non-conforming with this ordinance and which is not operable for one year shall be removed within the following six months. Failure to remove the system shall be deemed a violation of this ordinance.

**17.34.070      Applicability**

The requirements of this ordinance shall apply to all small wind energy systems and commercial wind energy systems proposed after the effective date of this ordinance. Wind energy systems for which a required permit has been properly issued prior to the effective date of this ordinance shall not be required to meet the requirements of this ordinance; provided, however, that any such system shall be installed and functioning within 24 months of the date of the permit. Any system that has been installed but not used for two consecutive years may not be subsequently used without meeting the requirements of this ordinance. No preexisting system shall be altered in any manner that would increase the degree of nonconformity with the requirements of this ordinance and no alterations shall be made to a nonconforming preexisting system during its life which exceeds 50% of its fair market value. If such system is destroyed or damaged to the extent of more than 50 % of its fair market value at the time of destruction or damage, it shall not be reconstructed except in conformity with this ordinance.

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