

**Wind Energy Siting Handbook:
Guideline Options
for
Kansas Cities and Counties**

KANSAS ENERGY COUNCIL

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Wind energy in Kansas is potentially a strong and viable resource. Ranked first in the nation for wind energy potential in a 2003 study by the U.S. Public Interest Research Group, Kansas could make a major contribution to meeting the electricity needs of the entire country. However, this potential is largely undeveloped.

The growing interest in wind energy is multi-fold. Continuing advances in technology are making electricity from wind energy increasingly economically competitive with traditional power generation. Recent price increases and volatility of fossil fuels also make wind energy more attractive because of long term commitment on the price of electricity generated. A third factor is that wind power does not produce atmospheric pollutants or emissions of greenhouse gases.

Purpose

This handbook is a compilation of wind energy siting guidelines developed in four Kansas counties, following extensive research, public discussion and debate.

This handbook offers voluntary guideline options for Kansas cities and counties to consider in response to possible wind energy development in their areas. Power generation from wind is a new type of development in Kansas. In order for wind energy development to proceed in a manner that is carefully planned, inclusive, and expeditious, it is necessary to anticipate potential impacts and engage in a process that addresses various components and issues.

How to Use This Handbook

This handbook is arranged in three sections:

- Section I: General Project Guidelines/Standards
- Section II: Siting and Performance Guidelines Adopted or Under Consideration in Four Kansas Counties
- Section III: Application Templates

The first section outlines general issues most often associated with wind energy development projects gathered from state and national sources. The second section is arranged in table form, highlighting the language each of four Kansas counties used in addressing these various issues. Finally, the third section is a table highlighting the components required in applications for wind energy projects in each of the four Kansas counties.

Planners are encouraged to review the ways in which these four counties—Butler, Geary, Riley, and Wabaunsee—developed wind energy regulations for consideration in the development of their own regulations if they so desire. The use of any of the guideline options contained in this handbook is completely voluntary.

Land Use in Kansas

The authority to regulate land use in Kansas is under the purview of local governments through the state's planning and zoning statutes (K.S.A. 12-741 et seq.). The statutes outline how land-use regulations are to be accomplished at the local level, and the state generally does not engage in their enactment, administration, or enforcement. Cities and counties in Kansas vary with regard to the exercise of this power—for example, numerous counties have chosen not to adopt zoning or subdivision regulations.

Because the state is characterized by a mix of zoned and unzoned counties, it is necessary for wind energy siting guideline options to be broad-based and flexible while being sufficiently detailed to be of use to those units of local government that choose to utilize them in the development of wind projects. This handbook contains examples of actual wind energy siting rules and policies already adopted or under consideration in four Kansas counties in an effort to demonstrate a variety of approaches and options for implementation.

Unzoned Counties

Unzoned counties have a number of options for approaching wind energy project development. They can (1) accept the status quo, (2) adopt zoning, (3) utilize another type of regulation, such as licensing, or (4) adopt a moratorium on wind energy development.

1. *Status Quo.* Unzoned counties may simply choose not to regulate the siting of wind energy development, which delegates the ultimate decision on the siting of such development with the developers and landowners, either individually or collectively.
2. *Adopt Zoning.* Unzoned counties may decide to utilize their statutory authority to adopt zoning regulations, which could then be used to regulate wind energy development. If a county chose this option, they could adopt zoning regulations for the entire county or a portion of the county, or they could cooperate with a city

to zone a portion around a city. If they chose to adopt zoning regulations, they would have to:

- follow the process specified in K.S.A. 12-741 et seq.,
- create and appoint a planning commission, and
- prepare and adopt zoning regulations in accordance with the public hearing process.

As part of the process of adopting zoning, counties are encouraged to:

- prepare and adopt a comprehensive plan, and
- prepare and adopt subdivision regulations in accordance with the public hearing process.

Zoning and subdivision regulations must be enforced to be effective. Counties are advised not to pursue these regulations unless they are prepared administratively and financially to enforce them using local staff and/or the local court system.

3. *Other Regulations.* Unzoned counties may be able to utilize a licensing requirement or some other special legislation to control or regulate certain aspects of a wind energy development. Check with local counsel to determine whether or not these alternatives are available and/or advisable. For local government units that do not have the necessary staff support or infrastructure to adequately implement wind energy siting procedures, fees can be charged to developers to cover the costs of reviewing wind energy proposals. These fees can be used to pay for consultants, temporary staff, or contracts with other jurisdictions for use of local government staff to provide the expertise and resources to review applications and process them through the system.
4. *Moratorium.* Cautionary note: Under no circumstances can it be assumed this would be legally binding upon actions of the property owner. It is merely advisory, at best. Unzoned counties may adopt a moratorium on wind energy development to allow sufficient time to study alternatives and to determine whether or not regulation of wind energy development is necessary or desired. If a county decides to adopt a moratorium, it should be for a specified and limited amount of time (e.g., six months or one year) and should state the reasons for the action (e.g., to study the issues and determine options or to adopt zoning regulations).

Zoned Counties

Counties that already have some form of zoning may either use existing zoning regulations to guide wind energy development or adopt regulations that are specific to such development. Zoned counties should first review their current zoning regulations to determine how wind energy developments are addressed. If they are not specifically mentioned in the regulations or if they are listed as a permitted use without any public

review process, the county may want to consider developing special regulations to regulate wind energy developments.

Wind Energy Leases

The Kansas Energy Council adopted a sample wind energy leasing agreement between landowners and wind developers, to help ensure that landowners make informed decisions in dealing with this new land use. Counties can consider requiring that landowners in any wind energy development be given copies of the sample lease agreement as a condition of the project application.

Acknowledgements

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References

- Kansas Energy Council's Wind and Prairie Task Force Report, Appendix 5 – *Wind and Prairie Task Force Siting Guidelines/Standards Related to Wind Development in Kansas and the Flint Hills*, adopted June 7, 2004
- Kansas Renewable Energy Working Group, *Siting Guidelines for Windpower Projects in Kansas*, dated January 22, 2003
- National Wind Coordinating Council, *Permitting of Wind Energy Facilities, A Handbook*, revised in 2002
- Butler County Zoning Regulations, Article 7, Section 18
- Geary County Zoning Regulations, proposed amendments to Article 11, Sections 801-808, and Article 13, Part 2, Section 13-201.
- Riley County Resolution No. 111804-65, amending Section 23 of the Zoning Regulations of Riley County
- Wabaunsee County Zoning Regulations, proposed amendments to Sections 1-104, 24-103, 25-102, 31-105, and 31-109

I. GENERAL PROJECT GUIDELINES/STANDARDS

The following checklist of general issues and concerns is intended to serve as a guide to identify the topics and issues for developing regulations for wind energy development. This list is drawn from regulations prepared or adopted by Kansas counties, and siting guidelines developed by local and national organizations (Kansas Energy Council, Kansas Renewable Energy Working Group, and the National Wind Coordinating Council). Specific examples and the range of options adopted by Kansas counties are presented in Section II of this report.

1. *Definitions.* At the very least, wind energy regulations need to define the difference between commercial and non-commercial projects. A definition of total height and how it is measured should also be included.
2. *Project Guidelines/Standards.* Counties should consider developing guidelines or standards in the following categories:
 - **Land Use**
 - Appropriate agencies, property owners, and other stakeholders should be contacted early in the process to identify potentially sensitive land uses and issues.
 - When reviewing proposed wind developments, be sensitive to their impacts on rare and disappearing ecosystems such as intact tallgrass, shortgrass or mixed grass prairies. When feasible, wind energy development should be located on already altered landscapes, such as extensively cultivated land and/or areas already disturbed. An undeveloped buffer adjacent to intact landscapes is also desirable.
 - Encourage or require efficient use of the land, through the consolidation of necessary infrastructure requirements wherever possible.
 - **Noise Management**
 - Consider whether there are adequate setbacks from residential areas and rural homes, especially where the residential unit is in a relatively less windy or quieter location than the turbines; recognize that residents who support the wind system may some day be replaced by others who will object to the noise.
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 - **Natural and Biological Resources**
 - Consider the biological setting during zoning or approval process. Encourage the use of biological and environmental experts to conduct preliminary reconnaissance of the prospective site area. Such experts could be with a wildlife agency or university personnel.

- When necessary, require that the appropriate resource management agencies be contacted early in the planning process to determine if there are any resources of special concern in the area under consideration.
 - A key tool for avoiding unnecessary negative ecological impacts of wind power development is planning. Encourage the involvement of local officials early in the process.
 - Require careful review if legally protected wildlife, such as threatened and endangered species, are present or potentially present at a wind development site. Recognize that other seriously declining or vulnerable species that have no legal protection may also be present. Requiring that wildlife issues be researched at each site will help the understanding of how a wind energy project might impact individual species of concern.
 - Sites where native vegetation is scarce or absent will have substantially fewer biological resource concerns. Where possible, discourage development in large, intact areas of native vegetation.
 - Power lines should be buried when feasible. In regions where grassland burning is practiced, infrastructure should be able to withstand periodic burning of vegetation. Roads and fences should be minimized.
 - No perches should be allowed on the nacelles (the enclosure located at the top of a wind turbine tower that houses the gearbox, generator, and other equipment); towers should not utilize lattice-type construction or other designs that provide perches for avian predators. Potential adverse effects of turbine warning lights on migrating birds should be addressed.
 - Turbines should be situated in a way that does not interfere with important wildlife or livestock movement corridors and staging areas.
 - When it is impossible to avoid significant ecological damage in the siting of a wind power facility, mitigation for habitat loss should be considered. Appropriate actions may include ecological restoration, long-term management agreements, and conservation easements to enhance or protect sites with similar or higher ecological quality to that of the developed site.
 - Consider potential cumulative regional impacts from multiple wind energy projects when making environmental assessments and mitigation decisions. Failure to consider multiple projects will prevent analysis at a scale that could potentially yield a much different picture.
- **Visual Impact**
 - The visual impact of windpower projects is an important consideration in siting deliberations. The impact on the quality of the surrounding landscape and viewsheds, especially in areas with high aesthetic qualities and where neighbors' property may be impacted by the siting should be evaluated fully. Accurate visual representations of potential

projects (including visual simulations and viewshed analyses) are useful ways to give the public a sense of a projects visual impact.

- Encourage project designs to minimize visual exposure from visually sensitive areas.
- Projects should minimize the need for developed roads or cut-and-fill.
- When possible, encourage the use of road-less project designs or designs that rely on existing roads.
- Consider the impact of projects on scenic byways and popular vistas.
- Consider establishing requirements pertaining to tower color and tower layout uniformity; maximum height requirements; blade glint; buffer zones; ridge line versus lower land areas; and lighting requirements on towers.

- **Soil Erosion and Water Quality**

- Wherever possible, sites that require construction activities on steep slopes should be avoided.
- In considering the appropriate erosion control measures required for a specific use, be aware that although some measures may require greater expense initially, significant savings will occur over the life of the project in reduced maintenance and replacement costs. A well-developed erosion and sediment control plan may also reduce regulatory delays in approving and monitoring the project.
- Ideally, construction and maintenance should be done when the ground is frozen or when soils are dry and the native vegetation is dormant.
- Improved roads and construction staging areas should be kept to a minimum, and care should be given to avoid sensitive habitats.
- Ongoing operation and maintenance activities should be carried out as practical by use of light conveyances to minimize habitat disturbance and the need for improved roads.
- Native vegetation of local ecotypes should be used when reseeding disturbed areas. Wildlife and plant composition should be considered in determining the frequency and timing of mowing near turbines.

- **Safety**

- Include the need for safety setbacks when evaluating specific parcels for development. Sufficient spacing from public access ways, and particularly from residential areas and structures, can mitigate many siting issues.
- Consider safe access to the site by roads.
- Account for ice throw (ice build-up that is thrown by the spinning blades).

- **Cultural, Archeological and Paleontological**

- Encourage developers to consult with the Kansas State Historical Society and qualified professional specialists familiar with cultural and fossil resources in the project development area.

- Some sensitive resources and sites may be confidential to Native Americans. Respect this confidentiality and plan to work closely with tribal representatives to avoid disruption of these resources.
 - Project site layouts should be designed to avoid sensitive resources.
 - Consider monitoring and mitigation for protection of sensitive resources during construction and operation of the project.
 - Encourage adequate time in the project schedule for data and specimen recovery, mapping analysis, and reporting.
- **Socioeconomic, Public Service, and Infrastructure**
 - Assess if and how a project will affect community services, costs, and infrastructure.
 - If possible, plan the project's operation and construction to avoid or minimize potential impacts on community services and infrastructure.
 - Ask for information related to possible future project expansions. Note that developers may not have precise information about future expansions, and that expanded projects may involve impacts not specifically addressed during the initial project.
 - Anticipate and require provisions for future site decommissioning and restoration.
 - **Public Interaction**
 - Encourage a public outreach program on the benefits and trade-offs involved in wind generation.
 - Ask for objective background resources that will allow your entity to make fully informed decisions. Decision making will be enhanced when accurate and comprehensive information is shared and ample opportunity for two-way communication is available. Public involvement through meetings and public forums should be incorporated into the siting process.

3. *Application Process and Procedures.* The regulations should outline the application and hearing process and should specify, in some detail, the type of information that should be requested as part of the application for a wind energy development. If it doesn't already exist, the county should consider a zoning process that enables the elected officials to make the final decision. Specific types of information that counties may want to consider requiring in an application include the following:

- **Site plan** with sufficient detail to understand the nature and scope of the proposed project and the attributes of the specific location.
- **Visual impact assessment** that will provide a simulation of how the project will look from various vantage points.
- **Environmental assessment** to include

- wildlife and wildlife habitat;
 - noise impacts;
 - soil erosion and dust;
 - safety issues;
 - water quality and quantity;
 - historic, cultural, and archeological impacts;
 - fire risks (e.g., grassland fires at site); and
 - other impacts of local importance.
- **Economic assessment** to include
 - tax revenues and public infrastructure enhancements required;
 - business and job generation;
 - impact on tourism; and
 - other areas of local importance.
- **Decommissioning and reclamation plan** to include
 - when and under what circumstances decommissioning and reclamation occurs;
 - the expected end of the project life; and
 - how the decommissioning and reclamation plan is secured (e.g., bonds, contract).

II. SITING AND PERFORMANCE GUIDELINES ADOPTED OR UNDER CONSIDERATION IN FOUR KANSAS COUNTIES

Following are actual siting and performance guidelines or standards adopted or under consideration in four Kansas counties:

- **Butler County** – Article 7, Section 18 of the Butler County Zoning Regulations (adopted 2003) *Butler County Planning Director, (316) 322-4325*
- **Geary County** – Article 11, Part 8, and Article 13, Part 2, of the Geary County Zoning Regulations (under consideration) *Geary County Metropolitan Planning Commission, (785) 238-3103, ext 138*
- **Riley County** – Resolution No. 111804-65 amending Section 23 of the Riley County Zoning Regulations (adopted November 18, 2004) *Riley County Planning Director, (785) 537-6332*
- **Wabaunsee County** – proposed amendments to Wabaunsee County Zoning Regulations developed at request of Wabaunsee County Planning Commission. (Proposed amendments were rejected by Wabaunsee County Commission in June 2004; language was instead added to Article 31-112, Supplementary Use Regulations, Prohibited Uses, stating that no application for a commercial wind energy conversion system shall be considered. This action currently is under challenge.) Contact: *Wabaunsee County Zoning Director, (785) 765-3432*

Additional assistance is available from the Kansas Association of Counties, 300 SW Eighth, Third Floor, Topeka, Kansas 66603; phone (785) 272-2585.

<i>Land Use</i>	
Butler	<ul style="list-style-type: none"> • Applicant shall identify potential effects in terms of constraints or benefits the Commercial Wind Energy Project (CWEP) may place on the current or future use of the land within the project site and the surrounding area. The extent of any limitations due to public health and safety risks shall be specifically addressed, and the effects on the following activities shall also be addressed: (a) existing or proposed tourist or recreation activities; (b) residential activities; (c) industrial activities; (d) agricultural activities; (e) local and regional tourism; and (f) commercial activities.
Geary	<ul style="list-style-type: none"> • In considering a request for a special use authorization and permit, the Metropolitan Planning Commission (MPC) shall

	<p>balance the public interests to be served by the construction or expansion of the special use as opposed to the impact upon interests intended to be protected by the Geary County Zoning Regulations. In balancing such interests, the MPC shall consider the following factors:</p> <ul style="list-style-type: none"> a. extent of the public interest to be served by the special use; b. effect that regulation of the special use or expansion, either by the imposition of requirements necessary to mitigate impacts or by a complete denial of the request, will have upon the county as a whole and upon the applicant or owners to continue with project; c. impact that construction or expansion of the special use will have upon legitimate interests of that portion of the community in which it is proposed to be located; d. conformance of the special use with the Comprehensive Plan; e. contingency plans in the event the special use is abandoned; and f. such other factors as the MPC deems appropriate and relevant.
<p>Riley</p>	<ul style="list-style-type: none"> • In considering a request for a special use authorization and permit, the Planning Board shall consider the public and private interests affected by the construction or expansion of the special use. In weighing such interests, the Planning Board shall consider the following factors: <ul style="list-style-type: none"> a. nature and extent of the public interest to be served by the special use; b. economic impact/benefit on the landowner and/or surrounding property owners; c. effect that regulation of the special use or expansion, either by the imposition of requirements necessary to mitigate impacts or by a complete denial of the request, will have upon the county as a whole and upon the applicant or owners to continue with project; g. impact that construction or expansion of the special use will have upon the public health, safety, and general welfare of the community; h. conformance of the special use with the guidelines/standards specified for each unique special use; i. conformance of the special use with the Comprehensive Plan; j. adequacy of applicant’s contingency plans in the event the special use is constructed and later abandoned; k. impact on the economic interests of the landowner of any modifications to or denial of the proposed special use; and l. such other factors as the MPC deems appropriate and

	relevant.
Wabaunsee	

<i>Noise Management</i>	
Butler	<ul style="list-style-type: none"> The commercial wind energy project shall comply with current noise standards of Butler County at all times in all appropriate locations. Turbines shall be moved, modified, or removed (and decommissioned) from service if necessary to comply with this condition.
Geary	<ul style="list-style-type: none"> Commercial wind energy conversion systems should be located in areas where there are adequate setbacks from residential areas and rural homes so that noise from the turbines is not an intrusion. The noise level measured at the property line of the project property shall not exceed 55 decibels at any time (“A” or “C” weighted). At the nearest existing residence or residence where a permit has been issued prior to the time an application has been filed pursuant to these regulations, the following shall be the standard: 26dB – IEC 61-4400 or actual measured at nearest residence – noise baseline + 10. Residences inside the project boundary/property line and part of the applicant group are exempt from these requirements.
Riley	<ul style="list-style-type: none"> The noise level caused by the operation of the project, measured at five feet above ground level at the property line coincident with or outside the project boundary, shall not exceed 65 decibels (A-weighted) and shall not exceed 50 decibels (C-weighted) if it is determined that a pure tone noise is generated by the project. Upon receipt by the Riley County Planning & Development Department of a complaint regarding noise from an existing commercial wind energy conversion system (commercial wind energy conversion systems) project, which the department determines to be reasonable, the project owner shall be required, at the owner’s expense, to have prepared, by an independent acoustical consultant, approved by the Planning & Development Department, an acoustical study that shall demonstrate compliance with the above noise standard on the basis of equivalent sound pressure levels. “Equivalent sound pressure levels” means the steady sound level that, over 10-minute measurement periods, would produce the same energy equivalence as the fluctuating sound level actually occurring. Low Frequency Noise Criteria. Commercial wind energy

	<p>conversion systems that are not designed in “accordance with proven good engineering practices” shall be prohibited. commercial wind energy conversion systems designed with the following characteristics shall be deemed in “accordance with proven good engineering practices”:</p> <ol style="list-style-type: none"> a. at least 3 blades; b. upwind rotor; c. no furling, where “furling” means that the wind turbine is designed to limit its power output in high winds by changing the rotor’s plane of rotation to a plane that is not perpendicular to the prevailing wind direction; d. tapered and twisted blades; and e. a well-designed braking system.
Wabaunsee	<ul style="list-style-type: none"> • A noise report shall be prepared that identifies current decibel levels surrounding the project site and the decibel levels and source noise if development occurs. Any proposed increase in noise levels on residential properties within <u> </u>-mile of the project shall be indicated and mitigation plans identified.

<i>Natural and Biological Resources</i>	
Butler	<ul style="list-style-type: none"> • Applicant shall provide information regarding flora (vegetation species, officially listed threatened species, critical habitat, and habitat conditions for such species). • Applicant shall provide information regarding fauna (species, habitat assessment, officially listed threatened species, migratory species, critical habitat, and habitat conditions for such species). • Applicant shall address geo-conservation, including sites of geoconservation significance listed on the state/national database (all of Butler County is located in the Flint Hills).
Geary	<ul style="list-style-type: none"> • Commercial wind energy conversion systems should not be located in areas that have a large potential for biological and/or environmental conflicts. • Commercial wind energy conversion systems should not be located where there are large intact areas of native vegetation as determined on the 2004 Kansas Energy Council Map by the Kansas Geological Survey and the Kansas Biological Survey. • Commercial wind energy conversion systems should not be situated in a way that interferes with important wildlife movement corridors and staging areas.

	<ul style="list-style-type: none"> • No perches are permitted on the nacelles of turbines. Commercial wind energy conversion systems towers shall not use lattice-type construction or other designs that provide perches for avian predators. • Improved roads and construction staging areas should be kept to a minimum, and sensitive habitats should be avoided.
Riley	<ul style="list-style-type: none"> • In areas where grassland burning is practiced, appropriate “buffer” areas shall be used to enable infrastructure to withstand periodic burning of vegetation. • No perches are permitted on the nacelles of turbines. Commercial wind energy conversion systems towers shall not use lattice-type construction or other designs that provide perches for avian predators.
Wabaunsee	<ul style="list-style-type: none"> • Applicant will provide an environmental assessment of the potential adverse impacts from the proposed development and measures to be taken to mitigate such impacts. The Assessment and Mitigation Plan must include information about impact to the following: <ul style="list-style-type: none"> a. wildlife and wildlife habitat both on the site and in a biologically significant area surrounding the site; b. any endangered or threatened species on the site and in a biologically significant area surrounding the site; c. avian population, including migratory birds; and d. flora on the site and in a biologically significant area surrounding the site.

<i>Visual Impact</i>	
Butler	<ul style="list-style-type: none"> • There shall be no lights on the towers other than those required by the Federal Aviation Administration (FAA). This restriction shall not apply to infrared heating devices used to protect the wind monitoring equipment. • Structures for wind turbines shall be self-supporting tubular towers painted a neutral color such as a white or pale gray. No lattice structure shall be used. No logos or advertisements are allowed on these structures. Each turbine shall be marked with a visible identification number located no higher than 15 feet above ground level. • Applicant shall take reasonable measures such as planting trees, installing awnings, etc., to mitigate specific adverse visual

	<p>impacts such as reflections, shadow flicker, and blade glint affecting residences within or immediately adjacent to the project area.</p>
Geary	<ul style="list-style-type: none"> • Commercial wind energy conversion systems should avoid sites that are readily visible from state-designated scenic byways or popular vistas. • Individual wind turbine heights, lighting, and markings shall comply with but not exceed FAA requirements. Installation shall use non-reflective, neutral-color finishes. If lighting of turbines or other structures is required, “daytime white-nighttime red” shall be the only type of lighting allowed with shielding from the ground and area residences. • The total height of any single turbine shall not exceed 400 feet.
Riley	<p><i>Guidelines</i></p> <ul style="list-style-type: none"> • Commercial wind energy conversion systems should avoid sites that are readily visible from government-designated scenic byways or government-designated scenic overlooks. • To avoid clutter, the visual effects of ancillary structures, roads, and fences on the site should be minimized. • A commercial wind energy conversion systems project should maintain visual unity among clusters of turbines. • To promote visual uniformity, the rotors, nacelles, and towers of all turbines in an array should appear similar. • To avoid objectionable density, there should be adequate spacing between turbines. • To avoid visual clutter, intra-project power lines having a voltage of 34,500 volts or less, should be buried unless the applicant can sufficiently demonstrate that burying the lines will violate other guidelines/standards, violate applicable law, render the project economically infeasible or be hidden from public view. • To avoid cluttering the skyline, transformers and other electric equipment should be hidden from view or otherwise constructed in harmony with the surrounding landscape. <p><i>Standards</i></p>

- To provide visual order to a commercial wind energy conversion systems project, all individual turbines shall have the same number of rotor blades and all rotor blades shall spin in the same direction (i.e., clockwise or counter-clockwise) in relation to the wind.
- To promote visual uniformity, all turbines at a similar ground elevation shall have the same height from blade tip to the ground.
- Distinct groupings or clusters of machines shall be limited to no more than 12 machines per cluster. A cluster shall be defined as a grouping of machines that are greater than 1320 feet (1/4 mile) from another grouping.
- In light wind conditions, turbine rotor blades shall not be kept in a locked position except as necessary to meet operational or maintenance requirements.
- Except during construction, re-construction, or removal, outdoor storage is not permitted within the project boundary except at locations that are screened from view.
- If turbines become inoperable for any reason, they shall be repaired as soon as reasonably possible in accordance with the reclamation standards outlined under “Decommissioning and Reclamation” below.
- To avoid cluttering the skyline, inverters and pendant power cables shall be located inside the wind turbine tower, nacelle, or structure.
- No telecommunications dishes, antennas, cellular telephone repeaters, or other similar devices shall be attached to wind turbine towers.
- Aircraft obstruction markings of the turbines by use of alternating red and white bands shall be prohibited.
- No billboards, logos, and advertising signs of any kind shall be located on the turbines.
- The maximum height of the turbines shall be 355 feet. Greater height, but not in excess of 400 feet, may be considered on a case-by-case basis if the applicant can sufficiently demonstrate that the increased height will result in increased energy efficiencies,

	<p>thereby reducing the overall number of turbines in the project. However, in all cases, due consideration shall be given to the scale of the turbines in relation to the surrounding landscape.</p>
Wabaunsee	<ul style="list-style-type: none"> • All towers and blades shall be painted in an off-white color, except for limited markings for names of manufacturers or logos or similar identifying markings of the owners of the system. No advertising signs of any kind shall be located on the system. • The layout of the system shall be such to eliminate shadow flicker and blade glint from impacting on public roads and mitigate any such impacts on residential structures within the vicinity of the system. • All lighting necessary to comply with the FAA lighting requirements shall be installed on the minimum numbers of structures to comply with the requirements and shall consist of dual lighting structures with daytime strobe lights on medium intensity and nighttime red lights only. No high-intensity strobes or nighttime strobes shall be permitted. • The lowest point of the rotor blades shall be at least 50 feet above ground level at the base of the tower. • No system may be located within 300 feet of another system or a commercial wind energy conversion system. • No system shall be located on a parcel of less than 20 contiguous acres, and no more than one system shall be located on each 20 acres of a parcel.

<i>Soil Erosion and Water Quality</i>	
Butler	<ul style="list-style-type: none"> • Applicant shall develop a Soil Erosion, Sediment Control, and Storm Water Runoff Plan. Plan shall address what types of erosion control measures will be used during each phase of the project. It shall identify plans for: <ul style="list-style-type: none"> a. grading; b. construction and drainage of access roads and turbine pads; c. necessary soil information; d. design features to maintain downstream water quality; e. re-vegetation to ensure slope stability; f. restoring the site after temporary project activities; g. disposal or storage of excavated materials; h. protecting exposed soil; i. stabilizing restored material and removal of silt fences or

	<p>barriers when the areas is stabilized; and</p> <p>j. maintenance of erosion controls throughout the life of the project.</p> <ul style="list-style-type: none"> • Applicant shall provide information pertaining to flood zones. • Surface Water – Applicants shall identify effects of the commercial wind energy project (especially during construction) and methods to be used to mitigate these effects, if any. • Groundwater – Applicant must demonstrate that the commercial wind energy project is consistent with the objectives and requirements of all relevant water management policies of the county, including (a) protection of the quality and quantity of the areas groundwater resources; and (b) maintenance of existing groundwater quality. • Applicant shall submit a plan to control dust on turbine access roads, especially during construction. • Applicant shall also address the direct and indirect effects of the commercial wind energy project on greenhouse gasses and ozone-depleting substances over the life span of the project.
Geary	<ul style="list-style-type: none"> • Wherever possible, commercial wind energy conversion systems should avoid sites that require construction activities on steep slopes. • Construction, maintenance, and reclamation shall be done when the ground is frozen or when soils are dry and the native vegetation is dormant, keeping in mind erosion control. Disturbed areas shall be reclaimed using a grass/forb seeding mix meeting the standards established for the location by the Geary County Office of the Natural Resource Conservation Office.
Riley	<ul style="list-style-type: none"> • Construction and maintenance shall be done in strict accordance with the erosion and sediment control plan submitted with the building permit so as to minimize soil erosion and damage to native vegetation. If native vegetation is damaged during construction, it shall be restored after construction is complete in areas not occupied by the commercial wind energy conversion systems and related facilities and roads.
Wabaunsee	<ul style="list-style-type: none"> • Applicant shall provide information pertaining to flood zones. • Surface Water – Water quality standards utilized for construction sites in Kansas under the requirements of the Clean Water Act shall be in effect during all construction, operation, and

	<p>maintenance of all facilities in the project, including using appropriate methods to be used to mitigate impacts.</p> <ul style="list-style-type: none"> • Groundwater – It must be demonstrated that the project is consistent with the objectives and requirements of all relevant water management policies of the county and state. The following issues shall be addressed by a hydrologist licensed by the State of Kansas: <ul style="list-style-type: none"> a. protection of the quality and quantity of the area’s groundwater resources; b. maintenance of groundwater quality; and c. preparation of a hydrology survey of the property within the project. • Construction, operation, and decommissioning shall be done in a manner so as to minimize soil erosion. Facilities should avoid steep or erodible slopes, and the number and width of roadways and construction staging areas should be kept to a minimum. • Dust emission control measures shall be utilized during construction phase and from all access roads that impact all non-agricultural uses, including farm residences, during the life of the project.
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<i>Safety</i>	
Butler	<ul style="list-style-type: none"> • Applicant shall identify the potential fire risk associated with the project, including both prescribed burning and non-prescribed burning (natural or accidental). This shall include a fire within the site, escape from the site, and the effects of fire originating from outside the site. Also address high angle rescue. • It is important to be aware of the fact that prescribed burning, or range burning, is a common practice in this area. Mitigation plans are to show how the towers and equipment are protected from fire within the site and from fire originating from outside the site. Prescribed burning is defined as the controlled application of fire to naturally occurring or naturalized vegetative fuels under specified environmental (weather) conditions in accordance with a written prescription that (a) is designed to confine the fire to a predetermined area and to accomplish planned land management objectives; and (b) conforms to the standards established by the Kansas State University Research and Extension Office-Butler County.

	<ul style="list-style-type: none"> • Lowest point of the rotor blades shall be at least 100 feet above ground level at the base of the tower. • No turbines shall be located closer than 500 feet or the total height of the turbine plus 50 feet, whichever is greater, from public roads. • No turbines shall be located closer than 500 feet or the total height of the turbine plus 50 feet, whichever is greater, from property lines of any property not included in the Conditional Use Permit. • No turbine shall be located closer than 1000 feet from a residential structure. Turbines shall be located no closer than the total height of the turbine plus 50 feet from a common agricultural/residential accessory structure. • If lubricants and/or hazardous materials need to be located on the premises in connection with the commercial wind energy project, said materials shall be kept and transported in accordance with all state and federal regulations. • An owner, lessee, or occupant of agricultural land is not liable for property damage caused by or resulting from prescribed burning conducted on the land owned by, leased by or occupied by the person if the prescribed burning is conducted under the procedures established by the Kansas State University Research and Extension Office-Butler County.
Geary	<ul style="list-style-type: none"> • In areas where grassland burning is practiced, infrastructure should be able to withstand periodic burning of vegetation. • Individual wind turbines shall be set back from all property lines a distance equal to at least two times the turbine height. • Individual wind turbines shall be set back from residential structures a minimum of 1500 feet. • Individual wind turbine heights, lighting, and markings shall comply with but not exceed FAA requirements. Installation shall use non-reflective, neutral-color finishes. If lighting of turbines or other structures is required, “daytime white-nighttime red” shall be the only type of lighting allowed with shielding from the ground and area residences.
Riley	<ul style="list-style-type: none"> • Individual wind turbines shall be set back from all property lines coincident with or outside of the project boundary a distance equal to one and one-half times the turbine height.

	<ul style="list-style-type: none"> • Individual wind turbines shall be set back from all public roads a distance equal to at least one and one-half times the turbine height. • Individual wind turbine heights and markings shall comply with Federal Aviation Administration (FAA) regulations. If lighting of turbines, or other structures, is required, “daytime white-nighttime red” shall be the only type of lighting allowed unless prohibited by law. All turbines and towers shall be a shade of white in color.
Wabaunsee	<ul style="list-style-type: none"> • Every system shall meet the following minimum setbacks: <ul style="list-style-type: none"> a. a setback from the nearest property line a distance equal to twice the height of the system, including the rotor blades; and b. a setback from the nearest public road right-of-way a distance equal to the height of the system, including the rotor blades, plus an additional 50 feet. • The lowest point of the rotor blades shall be at least 100 feet above ground level at the base of the tower. • All tower structures shall be located such that the maximum potential distance of ice throw from any individual structure shall be on the land owned by the leasor on which the structure is located. Specific documentation shall be provided to quantify the basis of the distance assumed and shall be included with the application materials. Ice throw shall not be allowed onto public roads or adjoining property. • Specific measures shall be documented to assure that risks from fire caused by any individual structure be minimized. These include redundant mechanical equipment to shut down any rotor suffering from high heat from internal failure and safety plans to be utilized during construction and maintenance. In addition, mitigation plans are to show how the towers and equipment are protected from fire originating from outside the site, especially in the event of a fire originating from a controlled burn or other source that might encroach into the project area. • No significant quantities of lubricants shall be kept on site. No hazardous materials shall be kept on site.

<i>Roads</i>	
Butler	<ul style="list-style-type: none"> • Applicant shall identify all county and township roads that will be used for the commercial wind energy project and shall notify the

	<p>used for the commercial wind energy project and shall notify the governing body having jurisdiction over the roads (County Engineering Department) to determine if said body needs to inspect the roads prior to their use. Where practical, existing roadways shall be used for all activities associated with the commercial wind energy project.</p> <ul style="list-style-type: none"> • Applicant and governing body having jurisdiction over said roads shall enter into a road agreement for maintenance and repair of roads subject to the extra wear and tear due to transportation of equipment and turbine components. • Applicant shall be held liable for any damage to county/township roads or rights-of-way resulting from tower construction, deconstruction, and /or maintenance activity. • Applicant shall not be held responsible to maintain or repair a road to a condition better than what existed before applicant began using it for commercial wind energy project purposes. • Applicant shall construct the smallest number of turbine access roads it can. • Access roads shall be low-profile roads so farming equipment can cross them. • Where an access road is to cross a stream or drainage way, it shall be designed and constructed so runoff from the upper portions of the watershed can readily flow to the lower portions of the watershed. • Where an access road is to cross a stream or drainage way, applicant must follow FEMA regulations pertaining to building a structure in a floodzone.
Geary	<ul style="list-style-type: none"> • Roads and fences on the site should be minimized.
Riley	<ul style="list-style-type: none"> • The anticipated volume and designated route for traffic generated during the construction phase, including routes for oversized and heavy equipment, and the proposed method of providing assurances to the public entities responsible for the roads of repairs and ongoing maintenance to the roads and bridges needed to support the project. • The anticipated volume and designated route for traffic generated during the utilization of the facilities, including routes for oversized and heavy equipment, and the proposed method of providing assurances to the public entities responsible for the roads of repairs and ongoing maintenance to the roads and bridges

	needed to support the project.
Wabaunsee	<ul style="list-style-type: none"> • All roads not a part of the primary highway system of the State of Kansas intended to be used by the applicant as a means of ingress and egress to the proposed facility shall be designated on the application. Final approval of the designated roads to be used shall be made a part of the Conditional Use Permit, if approved. A construction and maintenance agreement between the applicant and Wabaunsee County and/or the appropriate township officials shall be required. Such agreement shall specify the standards to which such roads will be reconstructed, if necessary, and the standards to which such roads will be subsequently maintained by the owner/operator of the commercial wind energy conversion system. The agreement also shall specify the form, manner, timing, and frequency of maintenance and upkeep. The responsibility of determining sufficiency of compliance with the road agreement shall be with Wabaunsee County or its designee. • In addition, documentation shall be provided indicating any proposed changes or upgrades to electrical substations, existing power transmission systems, or realignment of other utility systems required to support the project. Acknowledgement from the owners of those systems shall be provided that they are aware and have reached agreement with the applicant to provide for those changes and that any additional approvals required by these regulations for such expansions have been or will be made prior to any construction by the applicant or that utility system.

<i>Cultural, Archeological, and Paleontological</i>	
Butler	<ul style="list-style-type: none"> • Applicant shall conduct an archeological reconnaissance survey within the site that will be impacted by the construction or operation of the commercial wind energy project. The survey shall be provided to the State Historic Preservation Office (SHPO) to determine if cultural resources are present. Any unrecorded cultural resources that are found shall be evaluated for integrity and potential listing on the National Register of Historic Places. Undocumented resources that are eligible for listing on the National Register of Historic Places shall be avoided. All archeological investigations shall meet the SHPO standards and guidelines.
Geary	<ul style="list-style-type: none"> • Wherever possible, commercial wind energy conversion systems should avoid sites with potentially sensitive cultural or historical resources.
Riley	<ul style="list-style-type: none"> • Commercial wind energy conversion systems should avoid sites in close proximity to known sensitive historical, cultural, or

	archeological resources.
Wabaunsee	<ul style="list-style-type: none"> Applicant shall provide an overview of existing environment, including a map of the known or mapped archeological, cultural, or historical sites or structures within a mile of the project.

<i>Communication Lines/Power Lines</i>	
Butler	<ul style="list-style-type: none"> Communication lines and power collection lines are to be installed underground in the area covered by the Conditional Use Permit. Said lines are to be located under or at the edge of turbine access roads. Aboveground transmission lines may be used only in public rights-of-way or easements. Applicant shall not operate the commercial wind energy project and its associated facilities so as to cause microwave, television, radio, telecommunications, or navigation interference contrary to FCC regulations or other law. In the event the commercial wind energy project and its associated facilities or its operations cause such interference, applicant shall take timely measures necessary to correct the problem.
Geary	<ul style="list-style-type: none"> Power lines should be buried when feasible.
Riley	
Wabaunsee	<ul style="list-style-type: none"> Provide documentation regarding the risk of interference to other communication signals (radio, television, microwave, and radar) and actions to mitigate potential adverse effects. All communication lines and power collection lines shall be installed underground, under or at the edge of the access roads. Aboveground transmission lines may be used only in public rights-of-way or easements.

<i>Decommissioning and Site Reclamation</i>	
Butler	<ul style="list-style-type: none"> Applicant shall submit a Decommissioning Plan describing the manner in which the commercial wind energy project (CWEP) will be dismantled and removed from the site at the end of its useful life. All aboveground components of the commercial wind energy project shall be removed. Foundations shall be removed to four feet below ground level. Remainder of foundation may be left intact. Access roads shall be removed to the owner's

	<p>satisfaction.</p> <ul style="list-style-type: none"> • Applicant shall submit documentation showing financial capability to carry out the decommissioning and restoration requirements. • Applicant shall submit an escrow account/surety bond/insurance policy in an amount approved by the Board of County Commissioners as reasonably necessary to restore the site to its pre-CWEP topography and topsoil quality. The purpose of this account/bond/policy is to assure removal of all improvements subject to the Conditional Use Permit at the end of the project's life, or in the event of abandonment of the CWEP. • Abandonment shall include any one-year period following delivery by certified mail of written notice of abandonment to the owner of record when a completed wind turbine does not produce any electric energy and there is no demonstrated plan to restore the equipment to operating condition. • Upon termination of the aforesaid one-year period, abatement shall proceed as set forth in the Butler County regulations. The Board of County Commissioners may require applicant (hold of the Conditional Use Permit) to decommission any abandoned turbine. • At the end of the CWEP's useful life, or if the CWEP is abandoned, the site shall be restored in accordance with the requirements of this condition within 18 months.
<p>Geary</p>	<ul style="list-style-type: none"> • Approval of the commercial wind energy conversion systems project shall be accompanied by creation of an escrow account/surety bond in an amount approved by the Board of County Commissioners (BOCC) as is reasonably necessary to restore the site to its pre-construction condition. The purpose of the account/bond is to assure removal of individual turbines or all project improvements subject to permit in the event of abandonment of the individual turbines or the entire project. • An individual turbine shall be considered to have been abandoned when the turbine has not produced electricity for a period of at least six months and there is no demonstrated plan to restore the equipment to operating condition. An entire project shall be considered to have been abandoned when at least 50% of the individual turbines have not produced electricity for a period of at least six months and there is no demonstrated plan to restore the equipment to operating condition. An extension of the six-month

	<p>time period may be granted by the BOCC upon the presentation of sufficient justification by the project owner.</p>
Riley	<ul style="list-style-type: none">• Approval of commercial wind energy conversion systems shall include a requirement that the project owner shall, at its expense, and not later than 30 days before commencement of project construction, obtain and submit for approval of the county a letter of credit, a cash escrow account, a performance bond, or other form of security which is acceptable to the county. The purpose of the security requirement is to insure that adequate funding is available to be used to pay the costs of decommissioning and site reclamation, including removal of individual turbines and other above-ground project improvements subject to permit in the event of abandonment of individual turbines or abandonment of the entire project. The entity providing the letter of credit or the performance bond must be authorized to provide such security instruments in the State of Kansas. The security must be written in a form that is acceptable to the county and must contain such provisions, terms, or conditions as the county deems to be necessary, including but not limited to those set out in the amended zoning regulations, unless specifically waived in writing by the county. The security shall be in an amount equal to 100% of the estimated decommissioning and reclamation costs, and shall provide for an annual adjustment of the amount of the security based on the annual rate of inflation. Such amount shall be determined by the Board of County Commissioners (BOCC) based upon estimates from knowledgeable contractors and such other information or factors that the board deems to be relevant. The security may not be cancelled, released, or in any way terminated without prior written approval from Riley County, and shall be maintained and continued in force as long as such turbines or other above-ground improvements exist and until all decommissioning and site reclamation has been completed and paid for. If the board has any reason to believe that the security is insufficient, it may demand such other security as it deems to be necessary. The security must be written so as to survive any sale or transfer of the turbines and related project property or the insolvency of the project owner. It shall further apply to all successors and assigns of the project owner. Any entity providing security must be authorized to provide such security in the State of Kansas, and must be acceptable to the BOCC.• An individual turbine shall be considered to have been abandoned when the turbine is incapable of producing more than 20% of the average amount of electricity produced by such turbine in comparable previous time periods (adjusted for actual wind conditions), as determined by the Planning & Development

	<p>Department, for a period of at least six consecutive months and there is no demonstrated viable plan to restore the equipment to operating condition. An entire project shall be considered to have been abandoned when at least 50% of the individual turbines have not produced electricity for a period of at least six consecutive months and there is not demonstrated viable plan to restore the equipment to operating condition. An extension of the six-month time period may be granted by the BOCC upon the presentation of sufficient justification by the project owner.</p> <ul style="list-style-type: none"> • All underground equipment and foundation systems of commercial wind energy conversion systems shall be removed to a depth of at least three feet to allow for cultivation of crops or restoration of pasture.
Wabaunsee	<ul style="list-style-type: none"> • Approval of the Conditional Use Permit for a commercial wind energy conversion system shall be accompanied by a letter of credit, cash escrow account, or surety bond in an amount approved by the Board of County Commissioners as reasonably necessary to pay for the cost of decommissioning the facility and reclaiming the site to its pre-construction condition. The purpose of this financial assurance is to assure removal of all improvements subject to permit in the event of abandonment of the facility and reclamation of the site. Decommissioning shall include the requirement that all equipment shall be removed from the site; the foundations shall be removed to a depth of four feet below the ground surface, access roads removed to the landowner's satisfaction, and the ground restored to the condition specified in the reclamation plan. Access roads may be maintained if so requested by the landowner(s) and not included within the reclamation requirements. • Abandonment shall include any six-month period following delivery by certified mail or written notice of abandonment to the owner of record of the system and the landowner(s) when a completed commercial wind energy conversion system does not produce any electric energy and there is not demonstrated plan to restore the equipment to operating condition. Upon termination of the aforesaid six-month period, abatement shall proceed as set forth in the Wabaunsee County regulations.

<i>Public Review Process</i>	
Butler	

Geary	<ul style="list-style-type: none"> • Upon receipt of a request for a special use authorization and permit, including commercial wind energy conversion systems, a public hearing shall be scheduled with the Metropolitan Planning Commission. Notice of such hearing shall be given pursuant to Kansas statutes, as though such request were an amendment to the zoning of said property. Therefore, the Metropolitan Planning Commission shall proceed to conduct such public hearing on said request. • Upon receipt of a recommendation from the Metropolitan Planning Commission to the Board of County Commissioners to consider a request for a special use authorization and permit for a commercial wind energy conversion system, the BOCC shall schedule a public hearing.
Riley	<ul style="list-style-type: none"> • Upon receipt of a request for a special use authorization and permit, including for commercial wind energy conversion systems, a public hearing shall be scheduled with the Planning Board. Notice of such public hearing shall be given pursuant to Kansas statutes for rezoning of property. Thereafter, the Planning Board shall proceed to conduct such public hearing on said request. • Upon receipt of a recommendation from the Planning Board to the Board of County Commissioners to consider a request for a special use authorization and permit for a commercial wind energy conversion system, the BOCC shall schedule and conduct a public hearing.
Wabaunsee	

<i>Power Purchase Agreements (PPAs)</i>	
Butler	<ul style="list-style-type: none"> • The Conditional Use Permit does not authorize construction of the project until the applicant has obtained a Power Purchase Agreement (PPA) for the electricity to be generated by the commercial wind energy project. The applicant shall advise the Director of Planning & Development when it obtains a PPA and shall provide such documentation confirming said agreement. • The PPA must be obtained within one year of the date of publication of the resolution approving the Conditional Use Permit. This one-year period may receive up to a six-month extension upon written request by the applicant and approval of the Planning Commission and the Board of County Commissioners. In the event the applicant does not obtain a PPA

	<p>within the 12- to 18-month time span, the Conditional Use Permit shall be null and void.</p> <ul style="list-style-type: none"> • Building permits shall be issued only after the Director of Planning & Development receives documentation confirming said PPA, and all conditions pertaining to the commercial wind energy project have been satisfied. Once the PPA has been received, the 12-month rule established in Section 21-503 of the Butler County Zoning Regulations, with respect to revocation of the Conditional Use Permit and building permits, shall apply.
Geary	<ul style="list-style-type: none"> • Power lines should be buried when feasible.
Riley	
Wabaunsee	

<i>Monitoring and Review</i>	
Butler	<ul style="list-style-type: none"> • This section shall provide an outline of a monitoring, review, and reporting program for each part of the project. Details shall include any pre-construction monitoring/studies, sites to be sampled, sampling procedures, the parameters to be analyzed, frequency of sampling, and reporting. A site plan showing sampling locations is required.
Geary	
Riley	
Wabaunsee	<ul style="list-style-type: none"> • Each approved commercial wind energy conversion system shall provide a monitoring, review, and reporting program for each part of the project to confirm compliance with the above-listed performance standards. At the time of application, a written report shall be submitted detailing the proposed pre-construction monitoring/studies, sites to be sampled, sampling procedures, the parameters to be analyzed, frequency of sampling, and reporting. A site plan showing sampling locations is also required.

III. APPLICATION TEMPLATES

The following tables outline the wind energy project application components required in each county.

<i>Butler County</i>
<ul style="list-style-type: none">• Introduction, including the following information:<ul style="list-style-type: none">○ name of the project;○ phases of construction (if applicable);○ two maps showing project location and vicinity – one at 1:100,000 scale and one at 1:2,000 scale (USGS scale); and○ name and address of the developer, and a statement from the developer providing relevant information regarding an overview of the company, qualifications and experience in commercial wind energy development, environmental management history of the company, and financial information regarding the applicant’s ability to meet decommissioning escrow-bond requirements (financial information not open to public).○ relevant background information on the project, including a general overview of the project location, timeframe and project life, phases of development, and possibilities for future expansion;○ an examination of feasible, alternative locations for the project and reasons for the choice of this location over alternative locations;○ environmental guidelines and industry codes of practice that will be followed if approved;○ an inventory of existing wildlife, endangered species, wetlands, and other biologically sensitive areas within the site;○ archeological reconnaissance survey within the site that will be impacted by the construction or operation of the commercial wind energy project (survey shall be provided to the State Historic Preservation Office to determine if cultural resources are present – any unrecorded cultural resources that are found shall be evaluated for integrity and potential listing on the National Register of Historic Places, but undocumented resources that are eligible for listing on the National Register of Historic Places shall be avoided); and○ percentage of the State of Kansas Renewable Portfolio Standards (RPS) this project supplies. • A Site Plan with the following specifications:<ul style="list-style-type: none">○ scale of 1”=2000’;○ scale and north point (up);○ name/address of land owner and land developer;○ boundaries of site; boundary of property and boundary of area affected by the Conditional Use Permit;○ topography with contours at intervals of 20’;○ adjoining streets; location of nearby railroads and airports;

- transmission lines;
 - houses within 1000' of the site boundary;
 - acreage of site; point(s) of access to the project;
 - schematic location of turbines, electric collector and feeder lines, electrical equipment, maintenance roads, and other associated facilities;
 - boundaries of the 100-year floodplain as identified on the Federal Insurance Administration's "Flood Hazard Boundary Maps" of Butler County, Kansas; and
 - the location of any underground pipelines and other utility easements.
- General Construction Document, including the following:
 - general description of major components and onsite facilities – wind turbine specifications; transmission line and accessory facilities such as control rooms, transformers, substations, maintenance facilities, underground infrastructure, and interior access roads; and the number, location, capacity, and dimensions of the turbines;
 - designated field representative (and contact information) responsible for overseeing compliance with the conditions of the Conditional Use Permit – said representative shall be accessible by telephone during normal business hours;
 - description and general schedule of major construction activities for the turbines, transmission lines, and common accessory structures related to commercial wind energy projects;
 - outline of any proposed site preparation involving removal of vegetation, and restoration of the site due to construction;
 - volume and designated route for traffic generated during the construction phase, including oversized and heavy equipment;
 - terms and conditions of the Conditional Use Permit (to inform all employees, contractors, and others involved in the construction of the commercial wind energy project);
 - environmental conditions, if not previously identified but are discovered during construction, that may cause the applicant to move or relocate a turbine site;
 - any new infrastructure or off-site accessory structures required for the project to progress, including requirements for new transportation infrastructure and/or upgraded, realigned, or new road; changes to electrical substations; changes to existing power transmission systems, including any upgrades to existing transmission lines; and requirements for the realignment of other utilities affected by the project;
 - operation and maintenance requirements (including frequency of maintenance activities) for the turbines and transmission lines; and
 - width of transmission line easements required and any restrictions necessary on land use, development, and access within said easement.

- Evidence that the applicant is the owner of the property or has written permission of the owner(s) to make such application.
- Name, address, and phone number of the developer and the developer's contact person for the project. A statement from the developer providing relevant information regarding an overview of the company, the company's environmental management history, and the company's qualifications and experience in commercial wind energy conversion systems development. In addition, the name, address, and phone numbers of the manager of the project in the event the project is approved.
- Relevant background information on the project, including rationale and need for the project, timeframe and project life, phases of development, likely markets for the electricity produced, and possibilities for future expansion (Power Purchase Agreement).
- A narrative of feasible alternative locations for the project in the region and reasons for the proposed site over the alternatives. Region shall be defined as all counties adjoining Geary County.
- The applicant's position regarding the hardship caused by not approving the project.
- A plot and development plan drawn in sufficient detail to clearly describe the following:
 - general vicinity of the project location within the county;
 - scale and north arrow;
 - acreage of the site;
 - physical dimensions of the property;
 - location and physical dimensions of existing structures and general local and approximate physical dimensions of the proposed structures, including all proposed individual wind turbines (if an exact number of wind turbines is not known at the time of the application, the site plan shall identify a maximum number that will be expected and a range from minimum number expected to the maximum);
 - houses within 1000 feet of the project boundary and houses within one mile of the site boundary;
 - location of existing electrical lines and facilities, including transmission lines;
 - approximate location of proposed electrical lines and facilities, including transmission lines;
 - existing topography;
 - approximate proposed grading and removal of natural vegetation;
 - wind characteristics (histograms) and dominant wind direction, which is the direction from which 50% or more of the energy contained in the wind flows;
 - proposed setbacks of all structures from property lines;
 - projected methods of circulation on the project property;

- anticipated ingress and egress locations;
 - location of and distance to public road in all four directions surrounding the project perimeter;
 - approximate location of all underground pipelines or other underground utilities;
 - approximate location of all utility easements; and
 - location of any designated 100-year floodplains or wetlands.
- An accurate visual representation, including visual simulations, of the project components from the following:
 - all houses located within one mile of the property boundary;
 - at least two key vantage points, as determined by the Planning & Zoning Department in consultation with the applicant, from each public road that is nearest to the project in all four directions from the site;
 - any designated scenic byways and or popular vistas from which the project is visible as determined by the Planning & Zoning Department in consultation with the applicant; and
 - any other locations which the Metropolitan Planning Commission deems appropriate.
- An estimated economic cost/benefit analysis describing the impact of the project on the local or state economy in the following respects:
 - amount of property taxes to be generated by the project;
 - amount of sales taxes to be generated by the project;
 - amount of other applicable taxes to be generated by the project;
 - construction dollars to be spent locally;
 - number of construction jobs and estimated construction payroll;
 - number of permanent jobs and estimated continuing payroll;
 - benefit of the electricity generated by the project;
 - any projected costs or benefits to tourism in the county;
 - impact of the project on the surrounding residential property values to be determined by two independent appraisers licensed in Kansas;
 - other projected economic benefits of the projects;
 - costs associated with the impact on roads or other county infrastructure in the area;
 - fire protection and training; and
 - other projected economic costs of the projects.
- An environmental assessment provided by the applicant of the potential impacts from the project and any proposed mitigation measures from the impacts. The assessment and mitigation plan shall include, at a minimum, all the following:
 - impact on wildlife and wildlife habitat in the area;
 - impact on any endangered or threatened species on the site;
 - impact on the avian population in the area;
 - impact on the flora on the site;
 - noise levels on and off the site;

- any wastes, either municipal solid waste, construction, and demolition debris or hazardous, generated by the project;
 - electromagnetic fields and communications interference generated by the project;
 - risk of fire from the project, including threat of lightning strikes;
 - impact of the project on aviation in the area;
 - impact on the project on soil erosion;
 - impact of the project on water quality in the area;
 - potential hazards from ice throws;
 - dust from project activities;
 - potential hazards from collapse or damage of turbines or systems components in severe storms;
 - impact on historic, cultural, or archeological resources;
 - analysis of the potential cumulative regional impacts from multiple wind energy projects (region shall be defined as all counties adjoining Geary County);
 - impact on navigation and weather radar;
 - impact of shadow flicker and blade glint on houses and traffic (ten times the rotor diameter away); and
 - baseline data for property within two miles of a commercial wind energy conversion system project on stray voltage, noise (Standard 26dB – IEC 61-4400 or actual measured at nearest residence), TV reception or cell phone interruptions, health problems, sleep disturbance, and wind speeds (baseline data to be reviewed and confirmed by the appropriate state agency).
- Utility interconnection data and a copy of written notification to the utility of the proposed interconnection.
 - Information, in as much detail as possible, on the type, size, maximum and minimum height, rotor size, rotor material, color scheme, rated power output, performance, safety and noise characteristics of each proposed wind turbine model, tower, and electrical transmission equipment.
 - A general description of the decommissioning and land reclamation strategy in the event the project is abandoned or upon the end of the useful life of the project.
 - The anticipated volume and designated route for traffic generated during the construction phase, including routes for oversized and heavy equipment, and the proposed method of providing assurances to the public entities responsible for the roads of repairs and ongoing maintenance to the roads and bridges needed to support the project.
 - The anticipated volume and designated route for traffic generated during the utilization of the facilities, including routes for oversized and heavy equipment, and the proposed method of providing assurances to the public entities responsible for the roads of repairs and ongoing maintenance to the roads and

bridges needed to support the project.

- Operation and maintenance requirements (including frequency of maintenance activities) for the turbines and internal transmission lines connecting the individual turbines within the project and the transmission lines connecting the system to the “grid.”
- Width of transmission line easement required, including access requirements to the easement and any restrictions necessary on land use, development, and access within said easement.
- A general description of the plan for securing the site and various structures and facilities from access by unauthorized persons.
- A description of the Federal Aviation Administration (FAA) requirements applicable to the structures and facilities on the site and the proposed methods for meeting these requirements.
- Formal evaluations of any proposed site by the Kansas Department of Wildlife and Parks, U.S. Fish and Wildlife Service, FAA, Department of Defense, and the National Weather Service. (These agencies shall be given 20 working days to respond to the request for evaluations of any proposed site.)

Riley County

- Satisfactory evidence that the applicant is the owner of the property or has written permission of the owner(s) to make such application.
- Name, address, and phone number of the developer and the developer’s contact person for the project.
- Statement from the developer providing information regarding an overview of the company, its financial condition, its environmental management history, and its qualifications and experience in wind energy development.
- Description of the expected owner and/or builder of the proposed project and a complete financial statement for such owner/builder including audits or reviews for three years preceding the date of application.
- Name, address, and phone numbers of the manager of the project in the event the project is approved and the name, address, and phone numbers of any buyers of the project, if known at the time of application.
- Relevant background information on the project, including rationale and need for the project by the landowner and developer, timeframe and project life, phases of development, likely markets for the electricity produced and the possibilities for

future expansion.

- Narrative explanation of why the proposed project site was chosen by the applicant over alternative locations for the project in the region (all counties adjoining and including the county in which the application is being made).
- Applicant's position regarding the consequences of not approving the project.
- Plot and development plan drawn in sufficient detail to clearly describe the following:
 - general vicinity of the project location within the county;
 - scale and north arrow;
 - acreage of the site;
 - physical dimensions of the property and the physical location of the project boundary;
 - location and physical dimensions of existing structures and general location and approximate physical dimensions of proposed structures, including all proposed individual wind turbines (if exact number or dimensions of wind turbines is not known at the time of application, the site plan could be required to identify a maximum number and maximum dimensions that will be expected and a range from minimum to maximum number);
 - houses within 1,000 feet of the project boundary and the approximate distance of such houses from the project boundary, and any additional houses within a half-mile of the project boundary;
 - location of existing electrical lines and facilities, including transmission lines;
 - approximate location of proposed electrical lines and facilities, including transmission lines;
 - existing topography;
 - approximate proposed grading and removal of natural vegetation;
 - wind characteristics and dominant wind direction, which is the direction from which 50% or more of the energy contained in the wind flows;
 - proposed setbacks of all proposed structures from the project boundary;
 - anticipated ingress and egress locations;
 - location of and distance to public roads in all four directions surrounding the project perimeter;
 - approximate location of any major known underground pipelines or underground facilities;
 - approximate location of any major known utility easements; and
 - location of any delineated 100-year floodplains or wetlands.
- Accurate computer-generated visual simulation, including dynamic motion of the turbine blades, of the project components from the following:
 - all houses located within 1,000 feet of the project boundary;
 - up to 12 key vantage points, as determined by the Planning and

Development Department in consultation with the applicant, from public roads from which the project is visible or from sites that are determined to be of historic, cultural, or archeological significance;

- the Prairie Parkway (as identified in K.S.A. 68-1022) and any government-designated scenic byways or government-designed scenic overlooks from which the project is readily visible as determined by the Planning and Development Department in consultation with the applicant; and
 - if deemed necessary by the Planning Board, two additional locations of the Board's choosing.
- Estimated economic cost/benefit analysis describing the impact of the project on the local and state economy in the following respects:
 - the amount of property taxes to be generated by the project;
 - the amount of sales taxes to be generated by the project;
 - the amount of other applicable taxes to be generated by the project;
 - the construction dollars to be spent locally;
 - the number of construction jobs and estimated construction payroll;
 - the number of permanent jobs and estimated continuing payroll;
 - the benefit of the electricity generated by the project;
 - any projected costs or benefits to tourism in the county;
 - the impact of the project on existing surrounding residential property values within the visual dominance zone, as defined, based on studies of any similar projects in similar areas and based upon an opinion from three qualified residential real estate appraisers or valuation experts;
 - other projected economic benefits and costs of the project; and
 - costs associated with the impact on roads or other county infrastructure in the area.
 - Environmental assessment of the potential adverse impacts of the project and any proposed measures to mitigate or lessen the effects of the adverse impacts, The assessment and mitigation plan could include, at a minimum, all of the following:
 - impact on wildlife and wildlife habitat on the site and in a biologically significant area surrounding the site;
 - impact on any endangered or threatened species on the site and in a biologically significant area surrounding the site;
 - impact on avian population, including migratory birds;
 - impact on flora on the site;
 - "A"-weighted and "C"-weighted noise levels at the residence nearest to the project boundary and at the property line of such residence nearest to the project boundary;
 - any wastes, either municipal solid waste or hazardous waste, generated by the project;
 - electromagnetic fields and communications interference generated by the project;
 - risk of fire from the project, including threat of lightning strikes;

- impact of the project on civilian and military aviation in the area;
 - impact of the project on soil erosion;
 - impact of the project on water quality and water supply in the area;
 - potential hazards from ice throws;
 - dust from project activities;
 - potential hazards from collapse or damage of turbines or system components in severe storms;
 - impact on historic, cultural, or archeological resources;
 - impact of shadow “flicker” on houses from any wind energy project and estimated duration of the shadow flicker (in hours per year);
 - potential hazards of “blade glint”; and
 - a general discussion of any potential changes to the above assessment items that could be anticipated when considering the cumulative impacts of other wind energy projects in the region (defined as all counties adjoining and including the county in which the project is proposed).
- Copy of written notification to the utility of the proposed interconnection.
 - Information, in as much detail as possible, on the type, size, maximum and minimum height, rotor size, rotor material, color scheme, rated power output, performance, safety, and noise characteristics of each proposed wind turbine model, tower, and electrical transmission equipment.
 - General description of the decommissioning and land reclamation strategy in the event the project is abandoned or upon the end of the useful life of the project, as well as the anticipated useful life of the project.
 - Anticipated volume and designated route for traffic generated during the utilization of the facilities, including routes for oversized and heavy equipment needed for maintenance and repairs, and the proposed method of providing assurances to the public entities responsible for the roads of repairs and ongoing maintenance to the roads and bridges needed to support the project.
 - Anticipated operation and maintenance requirements (including estimated frequency of maintenance activities) for the turbines and internal transmission lines connecting the individual turbines within the project and the transmission lines connecting the system to the power grid.
 - Anticipated location, width, and proposed method of acquisition of transmission line easements required, including access requirements to the easements and any associated restrictions necessary on land use, development, and access within said easements.
 - General description of the plan for securing the site and the various structures and facilities from access by unauthorized persons.

- Description of the Federal Aviation Administration requirements applicable to the structures and facilities on the site and the proposed methods for meeting those requirements.

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- Introduction, including the following information:
 - title of project;
 - two maps showing project location and vicinity – one at 1:100,000 scale, and one at 1:2,000 scale (USGS scale);
 - name and address of the developer, and phone number of a contact person for the project (a statement from the developer providing relevant information regarding an overview of the company, qualifications and experience in commercial wind energy conversion system development, and environmental management history of the company; in addition, name, address, and phone numbers of the manager of the project in the event the project is approved);
 - relevant background information on the project, including a general overview of the project location, rationale and need for the project, timeframe and project life, phases of development, likely markets for the electricity produced, and possibilities for future expansion;
 - an examination of feasible alternative locations to the project and reasons for the proposed choice over those alternatives;
 - the applicant's position regarding the consequences of not approving the project;
 - environmental guidelines and industry codes of practice that will be followed if approved;
 - detailed reclamation plan; and
 - the percentage of the State of Kansas Renewable Portfolio Standards (RPS) this project supplies.
- Project description, including the following:
 - general description of the major components and on-site facilities of the commercial wind energy conversion system, including information on the wind turbine specifications, transmission line and accessory facilities such as control rooms, transformers, substations, maintenance facilities, underground infrastructure, and interior access roads (the number, location, capacity, and dimensions of the turbines shall also be included);
 - description and schedule of major construction activities for the turbines, transmission lines, and accessory structures;
 - description of the proposed sites preparation involving removal of vegetation;
 - estimates of the quantities of raw materials required for construction activities (sand, gravel, etc.) and their likely source;
 - volume and designated route for traffic generated during the construction phase, including routes for oversized and heavy equipment, and the proposed method of providing assurances to the public entities responsible for the roads of repairs and ongoing maintenance to the roads and bridges needed to support

- the project;
 - the designated route for traffic generated during the utilization of the facilities, including routes for oversized and heavy equipment, and the proposed method of providing assurances to the public entities responsible for the roads of repairs and ongoing maintenance to the roads and bridges needed to support the project;
 - operation and maintenance requirements (including frequency of maintenance activities) for the turbines and internal transmission lines connecting the individual turbines within the project and the transmission lines connecting the system to the “grid”; and
 - width of transmission line easement required, including access requirements to the easement and any restrictions necessary on land use, development, and access within said easement.
- Site Plan:
 - scale of 1” = 2000’;
 - scale and north point (up);
 - name/address of land owner(s) and land developer(s);
 - boundaries of site (including boundary of property and boundary of area affected by the Conditional Use Permit);
 - topography with contours at intervals of 20’;
 - adjoining streets, railroads, and airports;
 - transmission lines;
 - all houses within 1000’ of the site boundary;
 - acreage of site; point(s) of access to the project;
 - schematic location of turbines, electrical collection systems, and maintenance roads;
 - boundaries of the 100-year floodplain as identified on the Federal Insurance Administration’s “Flood Hazard Boundary Maps” of Wabaunsee County, Kansas; and
 - location of any underground pipelines and other utility easements.
- A written report addressing the items identified in Article 25-102, Performance Standards, as they relate to commercial wind energy conversion systems. In particular, these should address the following topics:
 - off-site infrastructure;
 - overview of existing environment;
 - noise;
 - surface water;
 - groundwater;
 - air;
 - visual effects;
 - ice throw;
 - fire hazard analysis;
 - communication interference;
 - a decommissioning and reclamation plan for the entire site; and

- proposed measures to mitigate the effects of adverse impacts to the existing environment resulting from the construction, operation, and decommissioning of the proposed facility.