Exhibit A20-1

## **Cattle Ridge Wind Farm, LLC**

## **Application for a Conditional Use Permit**

**Applicants:** 

Cattle Ridge Wind Farm, LLC



Application Prepared by Geronimo Energy, LLC on behalf of Cattle Ridge Wind Farm, LLC

Permit Application Fee: \$200.00

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## **1** Introduction

#### 1.1 SUMMARY

Cattle Ridge Wind Farm, LLC (Cattle Ridge) respectfully submits this application to Grant County's Board of Adjustment for a Conditional Use Permit (CUP). Cattle Ridge is submitting this application for a wind energy conversion system with up to 127 turbines (Wind Farm) and an associated 345 kilovolt (kV) transmission line under Section 1211 of the Grant County Zoning Ordinance. Collectively, the Wind Farm and transmission line are referred to as the "Project." Cattle Ridge respectfully requests the Board of Adjustment issues a CUP for the Project to be permitted, constructed, owned, and operated by Cattle Ridge Wind Farm, LLC.

The Wind Farm will be located in Mazzeppa, Twin Brooks, and Stockholm Townships and the associated transmission line will be located in Twin Brooks, Stockholm, Madison, Vernon West, and Vernon East Townships. The Project will result in the installation of up to 127 turbines and approximately 19 miles of overhead transmission that will originate within the Wind Farm's boundary in Section 27 of Township 120N, Range 50W. The transmission line route will run south for approximately two miles and continue east to the Point-of-Interconnect (POI), which is located approximately 11 miles south of Big Stone City in Section 7 of Township 119N, Range 47W. At the POI, the power will transfer to the Brookings-Big Stone transmission line on the Midcontinent Independent System Operator (MISO) system. Table 1 provides the legal description of the Project and an overview map of the Project can be found in Appendix A.

Civil Township	Township	Range	Section	
	Wind Farm			
Twin Brooks	120N	50W	7, 17-20, 22, 26-35	
Mazeppa	120N	51W	12-14, 23- 24	
Stockholm	119N	50W	2-11, 14-18, 22	
	Transmission Line			
Twin Brooks	120N	50W	27, 34	
Stockholm	119N	50W	1-3, 10-12,	
Madison	119N	49W	1-2, 4-5, 7- 10, 12	
Vernon West	119N	48W	1-2, 6-13	
Vernon East	119N	47W	18	

#### **TABLE 1: PROJECT LOCATION**

The final layout of the Project will be dependent upon final interconnection parameters and equipment design. The Project as proposed in this application represents what Cattle Ridge anticipates building. A final layout will be submitted to Clark County 60 days prior to construction as is required by Section 1211 (15) (e) of the Grant County Zoning Ordinance. Refer to Appendix A for a map of the preliminary layout.

Cattle Ridge is being developed by Geronimo Energy, LLC (Geronimo) a renewable energy developer based in Edina, Minnesota. Geronimo is a North American utility-scale renewable energy development company headquartered in Edina, Minnesota and has developed multiple operating wind farms and solar projects throughout the United States. Over 1,500 megawatts (MW) of wind and solar projects developed by Geronimo are either operational or expected to be constructed by the end of 2017. Geronimo has a multi-gigawatt development pipeline of wind and solar projects in various stages of development throughout the United States. Geronimo provides custom renewable energy development solutions for utilities, independent power purchasers and corporations looking to harness renewable energy for business growth. With deep roots in agriculture, Geronimo prides itself on developing wind farms that are farmer-friendly, community-driven, and beneficial for rural communities.

### **2 Project Description**

#### 2.1 SUMMARY AND LOCATION

The proposed Project will be located in Grant County, South Dakota and will include up to 127 turbines and approximately 19 miles of 345 kV transmission line. The transmission line will originate within the Wind Farm's boundary in Section 27 of Township 120N, Range 50W and run south for approximately two miles and continue east to the POI, which is located approximately 11 miles south of Big Stone City in Section 18 of Township 119N, Range 47W. At the POI, the power will transfer to the Brookings-Big Stone transmission line on the MISO system. Cattle Ridge continues to assess turbine options and is evaluating turbines with rated nameplate power outputs ranging from 2.0 MW to 4.0 MW.

#### 2.2 PROJECT OWNERSHIP

Cattle Ridge Wind Farm, LLC has signed lease agreements with the landowners for the Project site. Cattle Ridge Wind Farm, LLC is the CUP applicant.

#### 2.3 PROJECT CONSULTANTS

Surveying/ Design & Civil Engineering:

Westwood Professional Services

7699 Anagram Drive, Eden Prairie, MN 55344

Interconnection Design & Engineering: Ulteig Engineers, Inc.

4285 Lexington Ave., N., St. Paul, MN 55126

#### 2.4 WIND PROJECT

The Project's permanent facilities will include:

- Wind turbines and related equipment;
- New gravel access roads and improvements to existing roads;
- Underground electrical collection lines;
- Operations and maintenance (O&M) building;
- Substation facility;
- Switchyard facility;
- Transmission line (approximately 19 miles long); and
- Up to four meteorological towers (up to 100 meters tall).

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The Project's temporary facilities will include:

- Batch plant area;
- Staging/laydown area for construction;
- Staging area for delivery trucks;
- Meteorological towers and other monitoring equipment before and after construction; and
- Improvements to public roads including wide-turn radii.

The Wind Farm covers approximately 16,300 acres of which approximately 15,500 acres are privately owned parcels subject to Land Lease and Wind Easement agreements between Cattle Ridge and Grant County landowners. The Wind Farm boundary consists of 84% signed landowners. Additionally, 24 of the 27 occupied residences in the Wind Farm boundary are signed. Cattle Ridge selected the specific development area based on significant landowner interest, transmission and interconnection suitability, optimal wind resource, and minimal environmental impact. Appendix A provides the location of the Project and other wind facilities in the area. Proof of site control can be found in Appendix B.

The Wind Farm's final layout will optimize electrical generation and efficiency of the wind resource while avoiding and minimizing environmental, cultural, and economic impacts. Facilities will be sited to comply with the county's setback requirements, where applicable, as well as other voluntarily-imposed setbacks. To the extent applicable, the Project will also comply with all other local, state, and federal regulatory standards.

Section 12211.04 (2) of the Zoning Ordinance for Grant County establishes setbacks for wind energy systems. The county setback requirements and Cattle Ridge's proposed setbacks are provided in Table 2:

Setback Requirement	County Requirements	Proposed Setbacks
12211.04 (2)(a) Off-	1,000'	1,000' plus
site residences,		any distance
businesses, churches,		needed to
and buildings owned		minimize
and/or maintained by		noise and
governmental entity		shadow
		flicker
12211.04 (2)(a)	500'	1,000'
Buildings on-site or		
lessor's residences		
12211.04 (2)(b)	500' or 110% the	550'
Centerline of public	height of the wind	minimum
roads	turbine, whichever	and 110% of
	distance is greater	turbine
		height

#### TABLE 2: SETBACK TABLE

		should the turbine be taller
12211.04 (2)(c)	500' or 110% the	2x rotor
Any property line	height of the wind	diameter for
	turbine, whichever	non-
	distance is greater	participants,
		setback has
		been waived
		for
		participants

#### 2.4.1 Wind Turbines

Depending on the turbine model selected, Cattle Ridge could install up to 127 turbines to meet full generation capacity. The exact turbine model has not yet been determined. The turbine model will be selected to be cost-effective, reliable, and optimize land and wind resources.

The tower is planned to be gray or white and will be between 262 feet (80 meters) and 360 feet (110 meters) tall. Typically the tower is made out of rolled steel, through recent advancements in tower fabrication have included wrapped lattice structures and partial or full cement structures. Each tower will be secured by a concrete foundation. The specific design of a foundation may vary to adapt for local soil characteristics and other geotechnical, structural, and mechanical conditions. A control panel inside the base of each turbine tower houses communication devices and electronic circuitry. Each turbine is equipped with a wind speed and direction sensor that communicates to the turbine control system, which indicates when sufficient winds are present for operation. The turbine features variable-speed control and independent blade pitch to promote aerodynamic efficiency.

Cattle Ridge will use a Supervisory Control and Data Acquisition (SCADA) system, which allows remote control and monitoring of the status of the Project. The monitoring system provides status views of electrical and mechanical data, operation and fault status, meteorological data, and grid station data.

The electricity generated by each turbine may be transformed within the generator or brought to a pad-mounted transformer where the voltage is raised (stepped up) to a power collection-line voltage of 34.5kV. The electricity is collected by a system of underground or overhead power collection lines within the Wind Farm's boundary. Power collection lines and communication cables will typically be buried underground, but may be constructed overhead as site specific considerations require. Underground collection lines are designed to be buried at a depth of approximately 3-4 feet.

#### 2.4.2 Roads

Access roads will be approximately 18 feet (5.5 meters) wide and will be improved with class-5 (gravel) cover, which is adequate to support the size and weight of maintenance vehicles. The roads will meet all state and local requirements. The specific turbine locations will determine the

amount of roadway that will be constructed. In addition, an up to 30 foot diameter gravel work area will surround each turbine base.

In the event that private roads are damaged by construction or operation of the Project, Cattle Ridge will promptly coordinate repairs with the affected landowner.

In compliance with Section 1211.04(1) (f) of the Grant County Zoning Ordinance, Cattle Ridge will notify the state, county, and townships having jurisdiction over the roads that will be utilized and obtain the proper haul road permits. If necessary, Grant County would act as arbitrator to finalizing road agreements with townships. Haul road agreement discussions with the county have commenced and final haul road agreements will be submitted to the county at least 60 days prior to construction though they may need to be updated periodically during construction.

During construction temporary roads, turning radii along public roads, and signage modification will be required. These features will be installed and removed in coordination with the county and other affected jurisdictions. Cattle Ridge will maintain a safe and efficient traffic pattern for residents during the construction phase.

#### 2.4.3 Collection System

At the base of each turbine, a step-up transformer will be installed to raise the voltage to power collection-line voltage of 34.5kV. Power will run through an underground collection system to the Project's 34.5/345 kV step-up substation. Overhead collection lines may be required in certain areas if site conditions dictate. A new 345 kV generator lead line will exit the Project collector substation and will transmit power to a switchyard, where it will interconnect with the Brookings – Big Stone electrical transmission system. The electrical system design and interconnection details will be determined through studies and discussions with MISO and the potential electrical off-taker. The collection system will generally include:

- Trenching and burying of underground 34.5 kV electrical collector cables and fiber optic cables and marker tape;
- Clearing and grading for pad-mount transformers, junction boxes, and other installations;
- Clearing and grading for Project 34.5 /345 kV collector substation and O&M building; and
- Installation of on-site fencing.

In the fields, the collection system will be buried in a trench with each trench spaced a minimum 15 feet from the next to provide electrical isolation. Each trench will contain the three electrical phases, a fiber optic line, and above them all marker tape to identify their presence should they be encountered while digging. Each trench will be approximately 3 feet deep. Junctions of cable within a circuit will be made with above ground junction boxes. Cattle Ridge will locate the junction boxes to minimize impacts to agricultural operations. The collection system will be placed across roads through either boring methods for high use improved roads, or through trenching for roads with limited use and access and for unimproved section lines. Installation methods of the collector system across roads will be outlined in the final road agreement and in the associated crossing permits. Once installation is complete the surface will be restored to as good or better conditions.

#### 2.4.4 Feeder Lines

The feeder or transmission line structures for the Project will be located on private land and has been routed to follow public rights of way where possible.

The design of the feeder line will follow regional utility practices as well as the National Electrical Safety Code, the Rural Utility Service Code, and the Avian Power Line Interaction Working Group Guidelines. These design standards will allow for the minimization of environmental impact and ensure that the line is safely operated and efficiently install the line. All associated facilities will be maintained by Cattle Ridge staff that will monitor the line and maintain the right-of-way. Site plans and engineering drawings will be provided to Grant County prior to the commencement of construction.

#### 2.5 ASSOCIATED FACILITIES

#### 2.5.1 Meteorological Towers and Monitoring Stations

Cattle Ridge intends to install up to four permanent meteorological towers that will be capable of measuring wind speeds at the hub height of the turbines installed at the Project. The towers will be lattice in design and will have climb guards or fencing to prevent them from being accessed. Each tower will have meteorological monitoring equipment and lighting according to FAA minimums installed on them. The Project will also have a Sonic Detection and Ranging Unit (SoDAR) or Light Detection and Ranging Unit (LiDAR) which will be a small box that will be ground mounted on a small concrete pad. These units will use either sound or light respectively to measure atmospheric activity.

#### 2.5.2 Substation, Switchyard, and O&M Building

The Project substation and switchyard will be designed according to regional utility practices, MISO Standards, Midwest Reliability Organization Standards, National Electrical Safety Code, the Rural Utility Service Code, and the Avian Power Line Interaction Working Group Guidelines. The substation will include a control house, power transformers, switches, metering and other equipment needed for safe electrical operations of the wind farm and interconnection to the electrical grid. The area around the substation will be graveled and fenced. The substation's area will be approximately 500 feet by 500 feet once construction is complete.

The switchyard will connect the transmission line to the Brookings – Big Stone transmission line. The switchyard is fundamentally similar to the substation, with the exception of it lacks a step-up or step-down transformer. The primary function of the switchyard is to deliver generated power to the grid.

An O&M facility will be co-located with the substation located within the Wind Farm boundary and will provide access and storage for Project maintenance and operations. The O&M building will be between 3,000 to 5,000 square feet and house equipment to operate and maintain the Project. The parking lot adjacent to the building will be approximately 3,000 square feet.

#### 2.5.3 Transmission Line

As previously mentioned, the Project will include approximately 19 miles of above ground 345 kV transmission that will interconnect to the Brookings – Big Stone transmission line in Section 18 of Township 119N, Range 47W in Grant County. The proposed route is sited on private land adjacent to and overhanging existing public right-of-way. Typical structures for the transmission line will be self-supporting galvanized or weathering steel, wood, or concrete. Some guying may

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be required and will be determined once geotechnical investigations and structural design is completed. Cattle Ridge will design the structures to best blend with the broader visual environment and will be between 65 and 120 feet tall with spacing intervals between 400 and 1,000 feet. The structures will carry at least three conductor wires and one fiber optic and shield wire. The conductor wires will be attached to the poles via davit arms, brace post, or post mount insulators and arms, as needed, to meet local utility practice and rural utility specifications. All conductor wire spacing and other features will follow the guidelines developed by the Avian Power Line Interaction Committee (APLIC) working group guidelines, as applicable at the time of installation. Map Exhibit 7 located in Appendix A shows the transmission line route and signed easements. Proof of right-of-way easements for access to the transmission line is located in the Transmission Easement Agreements binder.

Cattle Ridge submitted a Consent for Utility Company to Cross a Public Road or Section Road Application to Grant County in November of 2016. The Grant County Commissioners approved all proposed transmission line crossings at the Commission Meeting held on January 17, 2017. A copy of the approved application is located in Appendix E.

#### 2.6 SCHEDULE

Construction of Cattle Ridge is scheduled to commence as early as the second quarter of 2018 with the projected commercial operation date of November 1, 2020.

#### 2.7 ENVIRONMENTAL ANALYSIS

Cattle Ridge is committed to the U.S. Fish and Wildlife Service (USFWS) 2012 USFWS Land-Based Wind Energy Guidelines. The Project has been developed following these guidance documents and as such, represents low environmental impacts.

Cattle Ridge will be submitting a Facility Permit Application to the South Dakota Public Utilities Commission (PUC) which requires a detailed environmental analysis of the Project. As a component of the Facility Permit Application, Cattle Ridge consulted with state and federal agencies to assess project-specific environmental concerns.

Cattle Ridge consulted with the USFWS and South Dakota Game, Fish, and Parks (SDGFP) to identify state and federally listed species that may occur in the Project and the location of USFWS managed easements. Coordination with these agencies has occurred via project notification letters dated June 1, 2016, a meeting held at the SDGFP office in Pierre, SD on May 19, 2016 and December 13, 2016, and numerous conference calls. Cattle Ridge will continue coordination with these wildlife agencies to ensure all concerns are appropriately addressed. Documentation of coordination is located in Appendix C.

Cattle Ridge will be responsible for undertaking all required environmental review and will obtain all permits and licenses that are required. The potential permits or approvals that have been identified as being required for the construction and operation of the Project are shown in Appendix D. Cattle Ridge is in the process of obtaining or has obtained many of these including determinations of no hazard from the FAA.

#### 2.8 DECOMMISSIONING AND RESTORATION

Decommissioning of Cattle Ridge will commence within eight months of the expiration of the Grant County CUP or termination of operation. The following decommissioning activities will occur:

Turbine removal - Access roads to turbines will be widened to a sufficient width to accommodate movement of appropriately-sized cranes, trucks and other machinery required for the disassembly and removal of the turbines. Control cabinets, electronic components, and internal cables will be removed. The rotor, nacelle and tower sections will be lowered to the ground where they may be transported whole for reconditioning and reuse, or disassembled/cut into more easily transportable sections for salvageable, recyclable, or disposable components.

Turbine and substation foundation removal - Topsoil will be removed from an area surrounding the foundation and stored for later replacement, as applicable. Turbine foundations will be excavated to a depth sufficient to remove all anchor bolts, rebar, conduits, cable, and concrete to a depth of 48 inches below grade. The remaining excavation will be filled with clean subgrade material of quality comparable to the immediate surrounding area. The sub-grade material will be compacted to a density similar to surrounding sub-grade material. All unexcavated areas compacted by equipment used in decommissioning shall be de-compacted in a manner to adequately restore the topsoil and sub-grade material to the proper density consistent and compatible with the surrounding area.

Underground collection cables - The cables and conduits contain no materials known to be harmful to the environment. As part of the decommissioning, these items will be cut back to a depth of at least 48 inches. All cable and conduit buried greater than 48 inches will be left in place and abandoned.

Substation and interconnection facilities - Disassembly of the substation and interconnection facilities will include only the areas owned by Cattle Ridge. Components (including steel, conductors, switches, transformers, fencing, control houses, etc.) will be removed from the site and reconditioned and reused, sold as scrap, recycled, or disposed of appropriately, at Cattle Ridge's sole discretion. To remove foundations and underground components without damaging or impacting adjacent facilities to the extent possible, such foundations and underground components will be removed to a depth of 48 inches and the excavation filled, contoured and reseded.

Access roads - Unless requested otherwise by the landowner, permanent access roads constructed to accommodate the Project will be removed. Ditch crossings connecting access roads to public roads will be removed unless the landowner requests they remain. Improvements to town and county roads that were not removed after construction will remain in place.

Cattle Ridge will restore and reclaim the site to its pre-project topography and topsoil quality using best management practices (BMPs) consistent with those outlined by 2012 USFWS Land-Based Wind Energy Guidelines. The goal of decommissioning will be to restore natural hydrology and plant communities to the greatest extent practical while minimizing new disturbance and removal of native vegetation. The decommissioning BMPs that will be employed to the extent practicable with the intent of meeting this goal include:

- 1. Minimize new disturbance and removal of native vegetation to the greatest extent practicable.
- 2. Remove foundations to four feet below surrounding grade, and cover with soil to allow adequate root penetration for native plants, and so that subsurface structures do not substantially disrupt ground water movements.

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- 3. Stockpile topsoil that is removed and use as topsoil when restoring plant communities. Once decommissioning activity is complete, restore topsoils to assist in establishing and maintaining pre-construction native plant communities to the extent possible, consistent with landowner objectives.
- 4. Stabilize soil and re-vegetate with native plants appropriate for the soil conditions and adjacent habitat, and use local seed sources where feasible, consistent with landowner objectives.
- 5. Restore surface water flows to pre-disturbance conditions, including removal of stream crossings, roads, and pads, consistent with storm water management objectives and requirements.
- 6. Conduct survey, using qualified experts, to detect populations of invasive species, and implement and maintain comprehensive approaches to preventing and controlling invasive species as necessary.
- 7. Remove any unnecessary overhead pole lines.
- 8. After decommissioning, install erosion control measures in all disturbance areas where potential for erosion exists, consistent with storm water management objectives and requirements.
- 9. Remove fencing unless the landowner will be utilizing the fence.
- 10. Remediate any petroleum product leaks and chemical releases prior to completion of decommissioning.

Decommissioning and restoration activities will be completed within 18 months after the date the Project ceases to operate.

# **3** Compliance with Grant County's Conditional Use and Wind Energy System Ordinances

Cattle Ridge has provided information in this application to make it complete under the requirements of the Grant County Zoning Ordinance in Section 1211.04. Table 3 summarizes this compliance.

Application Requirement	Description of Application Requirement	Cattle Ridge response in fulfilling ordinance
	Wind Energy System Requirer	ments
1(a)	Site Clearance. The permittees shall disturb or clear the site only to the extent necessary to assure suitable access for construction, safe operation and maintenance of the WES.	Clearing will occur only within the construction corridors to minimize the area disturbed.
1(b)	Topsoil Protection. The permittees shall implement measures to protect and segregate topsoil from subsoil in cultivated lands unless otherwise negotiated with the affected landowner.	Best Management Practices (BMPs) will be utilized during construction and operation to protect topsoil and minimize soil erosion. A soil erosion and sediment control plan will be submitted to the County prior to construction.
1(c)	Compaction. The permittees shall implement measures to minimize compaction of all lands during all phases of the project's life and shall confine compaction to as small and area as practicable.	Construction and maintenance activities will be confined to the construction corridor and access roads to minimize compaction. In areas where soil compaction occurs, Cattle Ridge will use decompaction methods to restore the soil.
1(d)	Livestock Protection. The permittees shall take precautions to protect livestock during all phases of the project's life.	Cattle Ridge will install temporary fencing during construction, as appropriate, to ensure livestock are protected.
1(e)	Fences. The permittees shall promptly replace or repair all fences and gates removed or damaged during all phases of	Removal of any fences and gates associated with the construction or maintenance of the wind farm

## 3.1 TABLE 3: COMPLIANCE WITH GRANT COUNTY ORDINANCE SECTION 1211.04

	the affected landowner.	or reeder line will be repaired or replaced in a manner that restores their original condition while preserving the ability of the wind farm and feeder line to be operated safely and within the pertinent regulatory standards. In the event that modification need to be made to accommodate the wind farm or feeder line Cattle Ridge will consult with the landowner to determine a modification that is acceptable to the landowner while still accommodating the new facilities.
1(f) I	Public Roads. Prior to the commencement of construction, the permittees shall identify all state, county or township "haul roads" that will be used for the WES project and shall notify the state, county, or township governing body having jurisdiction over the roads to determine if the haul roads identified are acceptable. The governmental body shall be given adequate time to inspect the haul roads prior to use of these haul roads. Where practical, existing roadways shall be used to all activities associated with the WES. Where practical, all-weather roads shall be used to deliver cement, turbines, towers, assemble nacelles and all other heavy components to and from the turbine sites.	Existing roads will be used for construction and maintenance where possible to minimize the amount of new roads constructed. Refer to Section 2.4.2 for more information.
1(f) II	The permittees shall, prior to the use of approved haul roads, make satisfactory arrangements with the appropriate state, county or township governmental body having jurisdiction over approved haul roads for construction of the WES for the maintenance and repair of the haul roads that will be subject to extra wear and tear due to transportation of equipment and WES components. The permittees shall notify the County of such arrangements	Refer to Section 2.4.2.

	upon request of the County.	
1(f) III	Turbine Access Roads. Construction of turbine access roads shall be minimized. Access roads shall be low profile roads so that farming equipment can cross them and shall be covered with Class 5 gravel or similar material. When access roads are constructed across streams and drainageways, the access roads shall be designed in a manner so runoff from the upper portions of the watershed can readily flow to the lower portion of the watershed.	Refer to Section 2.4.2.
1(f) IV	Private Roads. The permittees shall promptly repair private roads or lanes damaged when moving equipment or when obtaining access to the site, unless otherwise negotiated with the affected landowner.	And potential damage associated with the construction or maintenance of the wind farm or feeder line will be repaired or replaced in a manner that restores their original condition while preserving the ability of the wind farm and feeder line to be operated safely and within the pertinent regulatory standards. In the event that modification need to be made to accommodate the wind farm or feeder line Cattle Ridge will consult with the landowner to determine a modification that is acceptable to the landowner while still accommodating the new facilities.
1(f) V	Control of Dust. The permittees shall utilize all reasonable measures and practices of construction to control dust.	Cattle Ridge will use BMPs to control dust during construction including but not limited to water trucks in front of residences and community buildings, and magnesium sulfides or other acceptable dust suppression chemicals as a supplement.

1(f) VI	Soil Erosion and Sediment Control Plan. The permittees shall develop a Soil Erosion and Sediment Control Plan prior to construction and submit the plan to the County. The plan shall address the erosion control measure for each project phase, and shall at a minimum identify plans for grading, construction and drainage of roads and turbine pads; necessary soil information; detailed design features to maintain downstream water quality; a comprehensive revegetation plan to maintain and ensure adequate erosion control and slope stability and to restore the site after temporary project activities; and measures to minimize the area of surface disturbance. Other practices shall include containing excavated material, protecting exposed soil, stabilizing restored material and removal of silt fences or barriers when the area is stabilized. The plan shall identify methods for disposal or atornage of avaguated material	Cattle Ridge will develop a Soil Erosion and Sediment Control Plan prior to construction and submit the plan to the County. BMPs and industry standard practices will be implemented for drainage and soil erosion control. Permits for construction, including a National Pollutant Discharge Elimination System (NPDES), and Stormwater Pollution Prevention Plan (SWPPP) will be completed prior to construction.
2(a)	Setbacks. Distance from existing off-site residences, businesses, churches, and buildings owned and/or maintained by a governmental entity shall be at least 1,000 feet. Distance from on-site or lessor's residence shall be at least 500 feet. Distance to be measured from the wall line of the neighboring principle building to the base of the WES tower.	Refer to Table 2 for structure setbacks.
2(b)	Setbacks. Distance from centerline of public roads shall be at least 500 feet or 110% the height of the wind turbines, whichever distance is greater, measured from the ground surface to the tip of the blade when in a fully vertical position.	Refer to Table 2 for structure setbacks.
2(c)	Setbacks. Distance from any property line shall be at least 500 feet or 110% the height of the wind turbine, whichever distance is greater, measured from the ground surface to the tip of the blade when in a fully vertical position unless	Refer to Table 2 for structure setbacks.

	wind easement has been obtained from adjoining property owner.	
2(d)	Setbacks. Exception: The Board of Adjustment may allow setback/separation distances to be less than the established distances identified above, if the adjoining landowners agree to a lesser setback/separation distance. If approved, such agreement is to be recorded and filed with the Register of Deeds.	Refer to Table 2 for structure setbacks.
3	Electromagnetic Interference. The permittees shall not operate the WES so as to cause microwave, television, radio, or navigation interference contrary to Federal Communications Commission (FCC) regulations or other law. In the event such interference is caused by the WES or its operation, the permittees shall take the measures necessary to correct the problem.	Cattle Ridge has conducted a full third party telecommunications study and interference to these resources is not anticipated.
4	Lighting. Towers shall be marked as required by the Federal Aviation Administration (FAA). There shall be no lights on the towers other than what is required by the FAA. This restriction shall apply to infrared heating devices used to protect monitoring equipment. Upon commencement of the construction of a tower, in cases where there are residential uses located within a distance which is 300% of the height of the tower from the tower and when required by federal law, dual mode lighting shall be requested from the FAA. Beacon lighting, unless required by FAA, shall not be utilized.	Tower lighting will meet the FAA's minimum requirements.
5	Turbine Spacing. The turbines shall be spaced no closer together than (3) rotor diameters within a string. If required during final micro siting of the turbines to account for topographic conditions, up to 10% of the towers may be sited closer than the above spacing but the permittees shall minimize the need to site the	Turbines will be spaced a minimum of 3 rotor diameters.

	turbines closer.	
6	Footprint Minimization. The permittees shall design and construct the WES so as to minimize the amount of land that is impacted by the WES. Associated facilities in the vicinity of turbines such as electrical/electronic boxes, transformers and monitoring systems shall be mounted on the foundations used for turbine towers or inside the towers unless otherwise negotiated with the affected landowner.	Cattle Ridge will comply with the recommended footprint minimization measures.
7	Collector Lines. When located on private property, the permittees shall place electrical lines, known as collectors, and communication cables underground between the WES and the feeder lines. Exception: when the total distance of collectors from the substation require and overhead installation due to line loss of current from an underground installation. Collectors and cables shall also be placed within or immediately adjacent to the land necessary for turbine access roads unless otherwise negotiated with the affected landowners. This does not apply to feeder lines.	Refer to Section 2.4.3.
8	Feeder Lines. The permittees shall place overhead electric lines on public ROWs or private property. When placing on private property, the permittees shall place the feeder in accordance with the easement negotiated with the affected landowner. The permittees shall submit the site plan and engineering drawings for the feeder lines before construction. Feeder line support structures (power poles) shall be placed on private property where concrete or other similar materials are used as an exposed or above-ground permanent foundation.	Refer to Section 2.4.4.

9(a)	Decommissioning/Restoration/Abandon ment. Cost Responsibility. The owner or operator of a WES is responsible for decommissioning that facility and for all costs associated with decommissioning that facility and associated facilities.	A Decommissioning Plan will be submitted to the County within 120 days of completion of construction. Refer to Section 2.8 for additional information.
9(b)	Decommissioning Plan. Must be submitted to the County within 120 days of completion of construction. Plan shall describe the manner in which the permittees anticipate decommissioning the project in accordance with the requirements of paragraph 9(d). The plan shall include the estimated decommissioning cost per turbine and a description of the manner in which the permittees will ensure that it has the financial capability to carry out these restoration requirements when they go into effect. The permittees shall ensure that it carries out its obligation to provide for the resources necessary to fulfill these requirements. The County may at any time request the permittees to file a report with the County describing how the permittees are fulfilling this obligation.	Refer to Section 2.8.
9(c)	Financial Assurance. After the 10 <sup>th</sup> year of operation, the Board may require a performance bond, surety bond, letter of credit, corporate guarantee or other form of financial assurance that is acceptable to the Board to cover the anticipated costs of decommissioning the WES facility.	The owner or operator of the Project will assume responsibility for the cost of decommissioning.
9(d)	Site Restoration. Decommissioning of the WES shall begin within (8) months of the expiration of this permit, or earlier termination of operation of the WES and be completed within (18) months of the expiration of this permit or earlier termination of operation of the WES. The permittees shall have the obligation to dismantle and remove from the site all towers, turbine generators, transformers, overhead collector and feeder lines, foundations, buildings and ancillary	Refer to Section 2.8.

	equipment to a depth of (4) feet. To the extent possible the permittees shall restore and reclaim the site to its pre- project topography and topsoil quality. All access roads shall be removed unless written approval is given by the affected landowner requesting that one or more roads or portions thereof, be retained. Any agreement for removal to a less depth or for no removal shall be recorded with the County and shall show the locations of all such foundations. All such agreements between the permittees and the affected landowner shall be submitted to the County prior to completion of restoration activities. The site shall be restored in accordance with the requirements of this condition within (18) months after expiration.	
9(e)	Failure to Decommission. If the WES facility owner or operator does not complete decommissioning, the Board may take such action as may be necessary to complete decommissioning, including requiring forfeiture of the bond. The entry into a participating landowner agreement shall constitute agreement and consent of the parties to the agreement, their respective heirs, successors, and assigns, that the Board may take such action as may be necessary to decommission a WES facility.	The Project acknowledges potential actions by the Board in the event there is a failure to decommission.
10	Abandoned Turbines. The permittees shall advise the County of any turbines that are abandoned prior to termination of operation of the WES. The County may require the permittees to decommission any abandoned turbines.	N/A
11	Height from Ground Surface. The minimum height of blade tips, measured from the ground surface when a blade is in fully vertical position, shall be 25 feet.	All turbine models under consideration will comply with this standard.

12	Towers. Color and finish; the finish of the exterior surface shall be non-reflective and non-glass. All towers shall be singular tubular design.	Cattle Ridge will install only steel white, off white, or gray painted turbines and will be non- reflective.
13	Noise. Noise level shall not exceed 50 dBA, average A-weighted Sound pressure including constructive interference effects at the perimeter of the principal and accessory structures of existing off-site residences, businesses, and building owned and/or maintained by a government entity.	Unless other arrangements have been made with specific residents, turbines will be sited the minimum 1,000 feet from residences plus the distance required to comply with the 50 dBA standard. Cattle Ridge will conduct a noise assessment of the Wind Farm to determine the sound levels at receptors within the Wind Farm Project Area.
14	Permit Expiration. The permit shall become void if no substantial construction has been completed within (2) years of issuance.	Refer to Section 2.6.
	Required Information for Permit- Section	on 1211.04 (15)
15(a)	Boundaries of the site proposed for WES and associated facilities on USGS map or other map as appropriate.	Refer to Appendix A.
15(b)	Map of easements for WES.	Appendix A provides the location of any boundaries between abutting parcels, tracts, or lots owned by different parties.
15(c)	Affidavit attesting that necessary easement agreements with landowners have been obtained.	Refer to Appendix B for Affidavit and the Grant County Conditional Use Permit Applications.
15(d)	Map of occupied residential structures, businesses, churches and buildings owned and/or maintained by a governmental entity.	Refer to Appendix A.
15(e)	Preliminary map of sites for WES, access roads and collector and feeder lines. Final map of sites for WES, access roads and utility lines to be submitted (60) days prior to construction.	Refer to Appendix A.

15(f)	Proof of right-of-way easement for access to utility transmission lines and/or utility interconnection.	Refer to the separate binders: Memorandum of Land and Wind Easements and the Transmission Easement Agreements.
15(g)	Location of other WES in general area.	Refer to Appendix A. The WES presented on Map Exhibit 2 were identified through publicly available data and are in various stages of development. All potential WES development may not be represented on the Exhibit.
15(h)	Project-specific environmental concerns (e.g. native habitat, rare species, and migratory routes). This information shall be obtained by consulting with state and federal wildlife agencies. Evidence of such consultation shall be included in the application.	Refer to Section 2.7 and Appendix C.
15(i)	Final haul road agreements to be submitted (60) days prior to construction.	Refer to Section 2.4.2.

## 4 Conclusion

The Project as designed and planned complies with the Grant County Ordinance, and the laws of the State of South Dakota. Cattle Ridge has taken great care in the development of the Project to coordinate with their landowners and the local communities. Cattle Ridge respectfully requests that the Board of Adjustment approve a CUP for the Project.

## Appendix A

**Project Maps** 















## Appendix B

## Affidavit – Easement Agreements Obtained and Grant County Conditional Use Permit Applications

Exhibit A20-1



#### BEFORE THE GRANT COUNTY BOARD OF ADJUSTMENT 210 East 5<sup>th</sup> Avenue Milbank, SD 57252-2499

#### AFFIDAVIT OF NATHAN FRANZEN

I, Nathan Franzen, affirm that all necessary easement agreements for the Cattle Ridge Wind

Farm detailed in the application titled "Cattle Ridge Wind Farm, LLC Application for a

Conditional Use Permit" have been obtained.

Dated: January 20, 2017

Nathan Franzen Cattle Ridge Wind Farm, LLC 7650 Edinborough Way Suite 725 Edina, MN 55435

,2016 2017 Huw Subscribed and sworn before me on this 20th day of January HEATHER L WAYNE Notary Public NOTARY PUBLIC MINNESOTA Commission Expires 01/31/2021

Page 000031

#### GRANT COUNTY NOTICE OF APPEAL CONDITIONAL USE PERMIT/VARIANCE APPLICATION

DATE:, 20,	PERMIT NU	MBER
APPLICANT (PRINT): Nathan ADDRESS (PRINT): 7650 Edi	Franzen for Cattle Ridge Wind Farm, LLC	PHONE: 952-988-9000
OWNER (PRINT): Cattle Ridg	e Wind Farm, LLC	PHONE : 952-988-9000
ADDRESS (PRINT): Same as a	above	
I/WE, THE UNDER SIGNED, DAKOTA, TO ISSUE A <u>CON</u> THE PROPERTY DESCRIBEI Refer to Attachment	DO HEREBY PETITION THE BOARD OF DITIONAL USE PERMIT OR VARIANC (CIRCLE APPROPRIATE RE) D AS: LEGAL DESCRIPTION (PRINT)	ADJUSTMENT OF GRANT COUNTY, SOUTH <u>E</u> FOR Quest)
PARCEL NUMBER: Refer to A	Attachment	
SITE STREET ADDRESS: No	t Applicable	
EXISTING LAND USE: Agric	ultural EXISTI	NG ZONING: OC/I PD NR
SIZE OF PARCEL: Approxima	ttely 15,500 acres LOT DIMENSIONS: WII	DTH (FRONTAGE) DEPTH
SURROUNDING LAND USE:	NORTH: AG SOUTH: AG	

## CONDITIONAL USE PERMIT:

PLEASE DESCRIBE WHAT YOU PROPOSE TO DO AND WHY YOU ARE SEEKING A CONDITIONAL USE PERMIT (ATTACH A SEPARATE SHEET OF PAPER IF NECESSARY).

Construct the Cattle Ridge Wind Farm. Refer to the attached application for more information.

EAST: AG WEST: AG

#### VARIANCE:

IF YOU ARE SEEKING A VARIANCE PLEASE PROVIDE A BRIEF STATEMENT OF THE VARIANCE DESIRED AND
PLEASE STATE THE HARDSHIP REQUIRING RELIEF. (PROOF OF HARDSHIP IS ON THE APPLICANT - HARDSHIP EXAMPLES
ARE ODD SIZE OR SHAPE OF THE LOT, UNUSUAL TOPOGRAPHY, ETC. ATTACH A SEPARATE SHEET OF PAPER IF NECESSARY).

SIGNATURE OF APPLICANT:	
SIGNATURE OF OWNER (IF DIFFERENT THAN A	APPLICANT):
NOTE: A SKETCH OF PROPOSED PROPERTY SHALL A	CCOMPANY THIS APPLICATION, SHOWING THE FOLLOWING:
1. NORTH DIRECTION	5. LOCATION OF PROPOSED STRUCTURE ON LOT
2. DIMENSIONS OF PROPOSED STRUCTURE	6. DIMENSIONS OF FRONT AND SIDE SETBACKS
3. STREET NAMES	7. LOCATION OF ADJACENT EXISTING BUILDINGS
4. OTHER INFORMATION AS MAY BE REQUESTED	
THE BOARD OF ADJUSTMENT MAY REQUIRE THAT S	UCH PLANS BE PREPARED BY A REGISTERED ENGINEER OR LAND SURVEYOR
DATE FILED WITH ZONING OFFICER	FEE PAID(NON-REFUNDABLE) Y N
HEARING DATE & TIME	ACTION BY BOARD
Conditions of permit:	

Cattle Ridge	Wind Farm	Easements
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							Rec. Doc.
Parcel ID	Lease	Primary Contact	Acreage	Section	Township	Range	Number
14.50.02.2100	CAT_MAPS_V_ETAL-C	Vivian Maps		2	119	50	231904
14.50.03.1000	CA_STEMSRUD_M-L	Marilyn Stemsrud	310.00	3	119	50	231168
14.50.03.3000	CA_STEMSRUD_M-L	Marilyn Stemsrud	302.00	3	119	50	231168
14.50.03.4000	CA_STEMSRUD_M-L	Marilyn Stemsrud	5.00	3	119	50	231168
14.50.04.3000	CA_ANDERSON_EA-L	Eric Anderson	281.00	4	119	50	231403
14.50.04.1000	CA_ANGERHOFER_JS-L	James Angerhofer	78.00	4	119	50	231209
14.50.04.3001	CA_STAHL_JA-L	James Stahl	33.00	4	119	50	231410
14.50.04.1001	CA_IRISH_JS_L	John Irish	78.00	4	119	50	231224
14.50.04.2010	CA_MARKO_RM-L	Ronald Marko	36.00	4	119	50	231221
14.50.04.2000	CA_FALK FARMS-L	Warren Falk	121.00	4	119	50	231207
14.50.05.2000	CA_RUDE REAL ESTATE LP-L	Dalton Rude	78.00	5	119	50	231210
14.50.05.3000	CA_RUDE REAL ESTATE LP-L	Dalton Rude	114.00	5	119	50	231210
14.50.05.3300	CA_RUDE_DB-L	Dalton Rude	38.00	5	119	50	231215
14.50.05.1000	CA_SCHLEUSNER DAIRY-L	Louis Schleusner	77.00	5	119	50	231634
14.50.05.2001	CA_SCHLEUSNER DAIRY-L	Louis Schleusner	77.00	5	119	50	231634
14.50.05.1101	CA_WOLLMAN_MK-L	Michael Wollman	4.00	5	119	50	232042
14.50.05.1100	CA_FALK FARMS-L	Warren Falk	74.00	5	119	50	231207
14.50.06.4000	CA_RUDE REAL ESTATE LP-L	Dalton Rude	153.00	6	119	50	231210
14.50.06.1000	CA_T LEE HANSEN TRUST-L	Tommy Hansen	156.00	6	119	50	231923
14.50.06.2000	CA_T LEE HANSEN TRUST-L	Tommy Hansen	156.00	6	119	50	231923
14.50.07.1000	CA_RUDE REAL ESTATE LP-L	Dalton Rude	154.00	7	119	50	231210
14.50.07.4000	CA_DVORAK TR_KARSTEN-L	Patricia Dvorak	153.00	7	119	50	231249
14.50.08.1000	CA_ERICKSON TRUST_B-L	Betty Erickson	156.00	8	119	50	231245
14.50.08.3000	CA_ERICKSON TRUST_B-L	Betty Erickson	157.00	8	119	50	231245
14.50.08.2000	CA_RUDE REAL ESTATE LP-L	Dalton Rude	120.00	8	119	50	231210
14.50.08.2001	CA_RUDE_DB-L	Dalton Rude	39.00	8	119	50	231215
14.50.09.1000	CA_REGUS_FARMS-L	Kenneth Peterson	158.00	9	119	50	231669
14.50.09.3100	CA_REGUS_FARMS-L	Kenneth Peterson	39.00	9	119	50	231669
14.50.09.4000	CA_REGUS_FARMS-L	Kenneth Peterson	79.00	9	119	50	231669

14.50.09.4100	CA_REGUS_FARMS-L	Kenneth Peterson	79.00	9	119	50	231669
14.50.10.2000	CA_REGUS_FARMS-L	Kenneth Peterson	317.00	10	119	50	231669
14.50.10.1000	CA_STEMSRUD_M-L	Marilyn Stemsrud	159.00	10	119	50	231168
14.50.11.1100	CA_ANDERSON_TR_M-L	David Camrud	80.00	11	119	50	231333
14.50.11.3100	CA_REDEEN_DD-L	Dennis Redeen	40.00	11	119	50	231924
14.50.14.3000	CA_REDEEN_DD-L	Dennis Redeen	78.00	14	119	50	231482
14.50.14.2000	CA_STEMSRUD_M-L	Marilyn Stemsrud	157.00	14	119	50	231168
14.50.14.3100	CA_STEMSRUD_SR-L	Steven Stemsrud	77.00	14	119	50	231250
14.50.15.3100	CA_REDEEN_DD-L	Dennis Redeen	155.00	15	119	50	231482
14.50.15.2000	CA_REGUS_FARMS-L	Kenneth Peterson	158.00	15	119	50	231669
		Naomi Benson, Trust					
14.50.15.1000	CA_FEIOCK TRUST LOIS ENGEL-L	Banker	39.00	15	119	50	231402
		Naomi Benson, Trust					
14.50.15.1010	CA_FEIOCK TRUST LOIS ENGEL-L	Banker	39.00	15	119	50	231402
		Naomi Benson, Trust					
14.50.15.1100	CA_FEIOCK TRUST LOIS ENGEL-L	Banker	79.00	15	119	50	231402
14.50.15.3000	CA_RANSOM_NM-L	Nelson Ransom	76.00	15	119	50	231248
14.50.15.4000	CA_STEMSRUD_SR-L	Steven Stemsrud	80.00	15	119	50	231250
14.50.16.1000	CA_RANSOM_NM-L	Nelson Ransom	80.00	16	119	50	231248
14.50.16.1100	CA_RANSOM_NM-L	Nelson Ransom	40.00	16	119	50	231248
14.50.16.1110	CA_RANSOM_NM-L	Nelson Ransom	40.00	16	119	50	231248
14.50.16.2100	CA_RANSOM_NM-L	Nelson Ransom	199.00	16	119	50	231248
14.50.16.4000	CA_RANSOM_NM-L	Nelson Ransom	71.00	16	119	50	231248
14.50.16.4100	CA_RANSOM_NM-L	Nelson Ransom	80.00	16	119	50	231248
14.50.17.2100	CA_DVORAK TR_KARSTEN-L	Patricia Dvorak	80.00	17	119	50	231249
14.50.18.1000	CA_DVORAK TR_KARSTEN-L	Patricia Dvorak	112.00	18	119	50	231249
14.50.22.1100	CA_STEMSRUD_SR-L	Steven Stemsrud	131.00	22	119	50	231250
14.50.22.4100	CA_STEMSRUD_SR-L	Steven Stemsrud	54.00	22	119	50	231250
16.50.07.4000	CA_STEEGE_TR_D-L	Duane Steege	157.00	7	120	50	231925
16.50.17.2000	CA_HAACKE_DD-L	Donald Haacke	160.00	17	120	50	231303
16.50.17.1000	CA_EHRHART_BUNDY-L	Sharon Ehrhart	160.00	17	120	50	231404
16.50.17.3000	CA_EHRHART_BUNDY-L	Sharon Ehrhart	160.00	17	120	50	231404
16.50.17.4000	CA_EHRHART_BUNDY-L	Sharon Ehrhart	160.00	17	120	50	231404
16.50.18.4000	CA_JAQUET_A-L	Alta Jaquet	160.00	18	120	50	231317

16.50.18.2000	CA_SPRUNG_GE-L	Gene Sprung	152.40	18	120	50	231212
16.50.18.3000	CA_SPRUNG_GE-L	Gene Sprung	154.40	18	120	50	231212
16.50.18.1000	CA_CHRISTENSEN_N-L	Norman Christensen	159.00	18	120	50	231480
16.50.19.2000	CA_FISH ETAL-L	Richard Fish	135.00	19	120	50	231244
16.50.19.3000	CA_FISH ETAL-L	Richard Fish	135.00	19	120	50	231244
16.50.19.4000	CA_HANSEN LIVING TRUST_RS-L	Richard Hansen	161.00	19	120	50	231242
16.50.19.1000	CA_JAQUET_WK-L	Wayne Jaquet	162.00	19	120	50	231225
16.50.20.1000	CA_HANSEN LIVING TRUST_RS-L	Richard Hansen	163.00	20	120	50	231242
16.50.20.2000	CA_HANSEN LIVING TRUST_RS-L	Richard Hansen	163.00	20	120	50	231242
16.50.20.3000	CA_HANSEN LIVING TRUST_RS-L	Richard Hansen	165.00	20	120	50	231242
16.50.20.4000	CA_HANSEN LIVING TRUST_RS-L	Richard Hansen	162.00	20	120	50	231242
16.50.20.4100	CA_HANSEN_RS-L	Roger Hansen	5.00	20	120	50	231241
16.50.22.1000	CA_PAULI_JC-L	Jerald Pauli	163.00	22	120	50	231903
16.50.22.3000	CA_FALK FARMS-L	Warren Falk	162.00	22	120	50	231207
16.50.22.4000	CA_FALK FARMS-L	Warren Falk	161.00	22	120	50	231207
16.50.26.3000	CA_HANSEN_HANSEN TRUST-L	Roger Hansen	159.00	26	120	50	231247
16.50.26.4000	CA_HANSEN_HANSEN TRUST-L	Roger Hansen	80.00	26	120	50	231247
16.50.26.4100	CA_HANSEN_HANSEN TRUST-L	Roger Hansen	80.00	26	120	50	231247
16.50.27.1001	CA_WEBER_KG-L	Kyle Weber	8.00	27	120	50	231636
16.50.27.2000	CA_PAULI YVONNE LIVING TRUST-L	Yvonne Pauli	151.00	27	120	50	231205
16.50.27.3000	CA_PAULI YVONNE LIVING TRUST-L	Yvonne Pauli	160.00	27	120	50	231205
16.50.28.3000	CA_GRAMM_WT-L	Wanda Gramm	162.00	28	120	50	231318
16.50.28.1000	CA_PAULI YVONNE LIVING TRUST-L	Yvonne Pauli	161.00	28	120	50	231205
16.50.28.2000	CA_PAULI YVONNE LIVING TRUST-L	Yvonne Pauli	161.00	28	120	50	231205
16.50.28.4000	CA_PAULI YVONNE LIVING TRUST-L	Yvonne Pauli	162.00	28	120	50	231205
16.50.29.1000	CA_LOGEMANN_DC-L	Darrell Logemann	156.00	29	120	50	231671
16.50.29.2000	CA_LOGEMANN_DC-L	Darrell Logemann	166.00	29	120	50	231671
16.50.29.1100	CA_HANSEN_E-L	Eric Hansen	9.00	29	120	50	231311
16.50.29.3000	CA_GRAMM_WT-L	Wanda Gramm	82.00	29	120	50	231318
16.50.29.4000	CA_GRAMM_WT-L	Wanda Gramm	162.00	29	120	50	231318
16.50.30.1000	CA_FISH REV TRUST-L	Duane Fish	161.00	30	120	50	231246
16.50.30.2000	CA_FISH REV TRUST-L	Duane Fish	139.00	30	120	50	231246
16.50.30.3000	CA_FISH REV TRUST-L	Duane Fish	148.00	30	120	50	231246
16.50.30.4000	CA_FISH REV TRUST-L	Duane Fish	158.00	30	120	50	231246

16.50.31.4000	CA_T LEE HANSEN TRUST-L	Tommy Hansen	78.00	31	120	50	231923
16.50.32.1000	CA_SCHLEUSNER DAIRY-L	Louis Schleusner	158.00	32	120	50	231634
16.50.32.2000	CA_SCHLEUSNER DAIRY-L	Louis Schleusner	157.00	32	120	50	231634
16.50.32.3000	CA_SCHLEUSNER DAIRY-L	Louis Schleusner	157.00	32	120	50	231634
16.50.32.4000	CA_SCHLEUSNER DAIRY-L	Louis Schleusner	158.00	32	120	50	231634
16.50.33.4000	CA_PAULI_AB-L	Adam Pauli	160.00	33	120	50	231406
16.50.33.1000	CA_SCHLEUSNER_SCHMIDGALL-L	Alfred Schleusner	160.00	33	120	50	231633
16.50.33.2000	CA_SCHLEUSNER_SCHMIDGALL-L	Alfred Schleusner	161.00	33	120	50	231633
16.50.33.3000	CA_FALK FARMS-L	Warren Falk	160.00	33	120	50	231207
16.50.34.2000	CA_HANSEN_HANSEN TRUST-L	Roger Hansen	157.00	34	120	50	231247
16.50.34.1000	CA_STORM_SW-LEASE	Steven Storm	158.00	34	120	50	231635
16.50.34.4000	CA_STORM_SW-LEASE	Steven Storm	158.00	34	120	50	231635
16.50.35.1000	CA_LEDDY_G-L	Gene Leddy	160.00	35	120	50	231481
16.50.35.2000	CA_LEDDY_G-L	Gene Leddy	20.00	35	120	50	231481
16.50.35.3000	CA_LEDDY_G-L	Gene Leddy	20.00	35	120	50	231481
16.50.35.4000	CA_LEDDY_G-L	Gene Leddy	160.00	35	120	50	231481
16.50.35.2100	CA_LEDDY_WL-L	Wade Leddy	280.00	35	120	50	231584
11.51.01.3000	CA_AMUNDSON_KASPERSON-L	Allen Kasperson	160.00	1	120	51	231223
11.51.12.4000	CA_EHRHART_BUNDY-L	Sharon Ehrhart	159.00	12	120	51	231404
11.51.13.2000	CA_EHRHART_BUNDY-L	Sharon Ehrhart	160.00	13	120	51	231404
11.51.14.3000	CA_BOOTS_BJ-L	Betty Boots	40.00	14	120	51	231214
11.51.14.3100	CA_STORM_SW-LEASE	Steven Storm	40.00	14	120	51	231635
11.51.14.4000	CA_STORM_SW-LEASE	Steven Storm	161.00	14	120	51	231635
11.51.23.1000	CA_CAPP_H-L	Harold Capp	160.00	23	120	51	231243
11.51.23.2000	CA_ZEMLICKA_VD-L	Valerie Zemlicka	80.00	23	120	51	231213
11.51.23.2100	CA_ROE_WK-L	William Roe	40.00	23	120	51	231222
11.51.23.3000	CA_ROE_WK-L	William Roe	119.00	23	120	51	231222
11.51.23.3100	CA_ROE_WK-L	William Roe	60.00	23	120	51	231222
11.51.24.2000	CA_CAPP_H-L	Harold Capp	160.00	24	120	51	231243
11.51.24.1000	CA_HANSEN_RS-L	Roger Hansen	160.00	24	120	51	231241
#### GRANT COUNTY NOTICE OF APPEAL CONDITIONAL USE PERMIT/VARIANCE APPLICATION

PERMIT NUMBER

APPLICANT (PRINT): Nathan F	ranzen for Cattle Ridge Wind Farm,	LLC PHONE: 952-988-9000	
OWNER (PRINT): Cattle Ridge V	Vind Farm LLC	0430 PHONE : 052 088 0000	
OWNER (FRINT). Cattle Ridge V	wind Faini, LEC	PHONE: 952-988-9000	
ADDRESS (PRINT): Same as abo	ove		
I/WE, THE UNDER SIGNED, DO DAKOTA, TO ISSUE A <u>CONDI</u>	O HEREBY PETITION THE BOAR TIONAL USE PERMIT OR VAR (CIRCLE APPROPRI	D OF ADJUSTMENT OF GRANT COUNTY, SOUTH <u>IANCE</u> FOR ATE REQUEST)	
THE PROPERTY DESCRIBED A	AS: LEGAL DESCRIPTION (PRIN	T)	
Refer to Attachment			
PARCEL NUMBER: Refer to Att	achment		
SITE STREET ADDRESS: Not A	pplicable		
	a and the second of the second	0	
EXISTING LAND USE: Agricult	ural E	XISTING ZONING: AG C/I PD NR	
SIZE OF PARCEL: Approximate	ly 345 acres LOT DIMENSIONS: V	WIDTH (FRONTAGE) 150 ft easement DEPTH n/a	
SURROUNDING LAND USE:	NORTH: AG		
	SOUTH: AG		
	EAST: AG		

#### **CONDITIONAL USE PERMIT:**

DATE: \_\_\_\_\_, 20\_\_\_\_\_

PLEASE DESCRIBE WHAT YOU PROPOSE TO DO AND WHY YOU ARE SEEKING A CONDITIONAL USE PERMIT (ATTACH A SEPARATE SHEET OF PAPER IF NECESSARY).

Construct approximately 19 miles of 345-kilovolt electric transmission line. Refer to the attached application for more information.

WEST: AG

#### VARIANCE:

IF YOU ARE SEEKING A VARIANCE PLEASE PROVIDE A BRIEF STATEMENT OF THE VARIANCE DESIRED AND PLEASE **STATE THE HARDSHIP REQUIRING RELIEF**. (PROOF OF HARDSHIP IS ON THE APPLICANT – HARDSHIP EXAMPLES ARE ODD SIZE OR SHAPE OF THE LOT, UNUSUAL TOPOGRAPHY, ETC. ATTACH A SEPARATE SHEET OF PAPER IF NECESSARY).

. 5-	
SIGNATURE OF APPLICANT: M	
SIGNATURE OF OWNER (IF DIFFERENT THAN	APPLICANT):
NOTE: A SKETCH OF PROPOSED PROPERTY SHALL A	CCOMPANY THIS APPLICATION, SHOWING THE FOLLOWING:
1. NORTH DIRECTION	5. LOCATION OF PROPOSED STRUCTURE ON LOT
2. DIMENSIONS OF PROPOSED STRUCTURE	6. DIMENSIONS OF FRONT AND SIDE SETBACKS
3. STREET NAMES	7. LOCATION OF ADJACENT EXISTING BUILDINGS
4. OTHER INFORMATION AS MAY BE REQUESTED	
THE BOARD OF ADJUSTMENT MAY REQUIRE THAT S	SUCH PLANS BE PREPARED BY A REGISTERED ENGINEER OR LAND SURVEYOR
DATE FILED WITH ZONING OFFICER	FEE PAID(NON-REFUNDABLE) Y N
HEARING DATE & TIME	ACTION BY BOARD
Conditions of permit:	

## Cattle Ridge Transmission Line Easements

						Rec. Doc.
Parcel ID	Lease	Primary Contact	Section	Township	Range	Number
17.48.01.4000	CAT_MCCULLOCH_RI-T	Roger McCulloch	1	119	48	231192
17.48.01.3000	CAT_LOESCHKE_WT-T	Wayne Loeschke	1	119	48	231457
17.48.02.4001	CAT_AHUNT-JOHNSON-T	Adam Hunt	2	119	48	231910
17.48.02.4000	CAT_AHUNT-FARM-T	Adam Hunt	2	119	48	231920
17.48.02.3100	CAT_SCHNECK REAL ESTATE-T6	Alan Schneck	2	119	48	231184
17.48.03.3100	CAT_SCHNECK REAL ESTATE-T4	Doug Schneck	3	119	48	231180
17.48.04.4000	CAT SCHNECK REAL ESTATE-T7	Doug Schneck	4	119	48	231185
17.48.05.3000	CAT FROGNER TB-T2	Thomas Frogner	5	119	48	231408
17.48.06.3000	CAT GRANQUIST MT-T	Mark Granguist	6	119	48	230762
17.48.07.1000	CAT SANDT TR K-T1	David Camrud	7	119	48	231927
17.48.07.2000	CAT SANDT TR K-T2	David Camrud	7	119	48	231926
17.48.08.1000	CAT BOE LI-T	Lowell Boe	8	119	48	230765
17.48.08.2100	CAT_FROGNER_TB-T3	Thomas Frogner	8	119	48	231670
17.48.09.1100	CAT SCHNECK REAL ESTATE-T1	Doug Schneck	9	119	48	231178
17.48.09.2000	CAT GRAF GS-T	Grace Graf	9	119	48	231460
17.48.10.1000	CAT SCHNECK REAL ESTATE-T2	Doug Schneck	10	119	48	231177
17.48.10.2111	 CAT_BELL_R-T	Robert Bell	10	119	48	231458
17.48.10.2000	CAT_SCHANK_WL_LIVING TRUST-T2	William Schank	10	119	48	231486
17.48.10.2110	CAT SCHANK WL LIVING TRUST-T3	William Schank	10	119	48	231485
17.48.11.1100	CAT SCHUELKE JP-T1	Jeffrev Schuelke	11	119	48	230764
17.48.11.2000	CAT WILL LAND TRUST-TEA	Kelly Blankenship	11	119	48	232364
17.48.12.1000	 CAT_SANDT_TR_K-T3	, David Camrud	12	119	48	231928
17.48.12.2000	CAT O'BREIN LJ-T	Lori O'Brien	12	119	48	231034
17.48.12.4000	CAT SCHUELKE RG-T1	Richard Schuelke	12	119	48	231909
17.48.12.4100	CAT SCHUELKE RG-T2	Richard Schuelke	12	119	48	231908
17.48.13.1000	CAT WHITING CG-T1	Clayton Whiting	13	119	48	231913
17.47.18.2000	CAT WHITING CG-T2	Clayton Whiting	13	119	48	231912
10.49.01.3000	CAT SCHNECK REAL ESTATE-T3	Doug Schneck	1	119	49	231179
10.49.01.3100	CAT SCHNECK REAL ESTATE-T5	Doug Schneck	1	119	49	231181
10.49.01.4100	CAT BEAR L-T	Larry Bear	1	119	49	232367
10.49.01.2000	CAT GORDON JOHNSON LAND TRUST-T3	Sharon Wollman	1	119	49	232178
10.49.01.1000	CAT GORDON JOHNSON LAND TRUST-T4	Sharon Wollman	1	119	49	232179
10.49.01.4001	CAT FROGNER TB-T1	Thomas Frogner	1	119	49	231405
10.49.02.4000	CAT ANDERSEN TREVETT-T	James Andersen	2	119	49	231548
10.49.02.2100	CAT MERTENS JT-T	Jay Mertens	2	119	49	232127
10.49.02.2100-Split	CAT MERTENS KRUGER-T	Jay Mertens	2	119	49	232126
10.49.02.2000	CAT KRUGER L-T	Lyle Kruger	2	119	49	232128
10.49.02.3000	CAT SCHANK WL LIVING TRUST-T1	William Schank	2	119	49	231487
10.49.04.3000	CAT RAY GILL RANCH-T1	John Gill	4	119	49	232122
10.49.06.3000	CAT LARSON BROS PARTNERSHIP-T	Gerald Larson	6	119	49	230766
10.49.07.1110	CAT_SCHMIG_DJ-T1	Dennis Schmig	7	119	49	231031
10.49.07.1000	CAT_SCHMIG_DJ-T3	Dennis Schmig	7	119	49	231032
10.49.08.1110	CAT_JACOBS_MOEN_DOHRER-T	Gary Jacobs	8	119	49	231459
10.49.09.1000	CAT_KIBBE_JOANNE_TRUST-T	Joanne Kibbe	9	119	49	231488

## Exhibit A20-1

10.49.09.1100	CAT_RAY_GILL_RANCH-T2	John Gill	9	119	49	232123
10.49.10.2000	CAT_PEDERSON_KD-T	Debra Pederson	10	119	49	231190
10.49.10.1001	CAT_SCHUELKE_JP-T2	Jeffrey Schuelke	10	119	49	231456
10.49.10.1000	CAT_WALDNER_PD-TEA	Peter Waldner	10	119	49	232000
10.49.10.2100	CAT_WOLLSCHLAGER TRUST_V-T	Velma Wollschlager	10	119	49	233186
10.49.12.1000	CAT_SIEVERSON_ETAL-T	William Sieverson	12	119	49	231191
14.50.03.1000	CAT_STEMSRUD_M-T1	Marilyn Stemsrud	3	119	50	230680
14.50.03.3000	CAT_STEMSRUD_M-T2	Marilyn Stemsrud	3	119	50	230679
14.50.03.4000	CAT_STEMSRUD_M-T2	Marilyn Stemsrud	3	119	50	230679
14.50.10.1000	CAT_STEMSRUD_M-T3	Marilyn Stemsrud	10	119	50	231189
14.50.11.1100	CAT_ANDERSON_TR_M-T1	David Camrud	11	119	50	231333
14.50.11.2000	CAT_ANDERSON_TR_M-T2	David Camrud	11	119	50	231331
14.50.12.2000	CAT_ANDERSON MARIAN TRUST-T3	David Camrud	12	119	50	231332
14.50.12.1000	CAT_FALK_TRUST_WJ-T	Wade Falk	12	119	50	231193
14.50.12.2000	CAT_ANDERSON_TR_M-T2	David Camrud	12	119	50	231332
02.48.31.3000	CAT_DAMEROW_KRAUSE-T1	Kenneth Damerow	31	120	48	231915
07.49.35.4100	CAT_GORDON JOHNSON LAND TRUST-T1	Sharon Wollman	35	120	49	232180
07.49.35.4000	CAT_GORDON JOHNSON LAND TRUST-T2	Sharon Wollman	35	120	49	232167
07.49.36.3000	CAT_DAMEROW-KRAUSE-T2	Kenneth Damerow	36	120	49	231921
07.49.36.4000	CAT_DAMEROW-KRAUSE-T3	Kenneth Damerow	36	120	49	231922
16.50.34.3000	CAT_SCHMIG_DJ-T2	Dennis Schmig	34	120	50	231033
16.50.34.2000	CAT_HANSEN_HANSEN TRUST-T	Roger Hansen	34	120	50	230763

## Exhibit A20-1

# Appendix C

# Agency Communication



June 1, 2016

Peter Gober US Fish and Wildlife Service 420 South Garfield Avenue Suite 400 Pierre, SD 57501-5408

RE: Requesting Comments on Cattle Ridge Wind Farm in Grant County, South Dakota

Dear Peter Gober,

Cattle Ridge Wind Farm, LLC ("Cattle Ridge Wind Farm"), a wholly owned subsidiary of Geronimo Energy, LLC, is gathering information and requesting agency comments for a proposed wind energy project in Grant County, South Dakota.

Cattle Ridge Wind Farm will be submitting a Facility Permit Application to the South Dakota Public Utilities Commission ("PUC").

The planned output for the Project is up to 200 megawatts of nameplate wind energy capacity. The Project's permanent facilities will include:

- wind turbines and related equipment;
- new gravel access roads and improvements to existing roads;
- underground electrical collection lines;
- an operations and maintenance ("O&M") building;
- a substation facility;
- up to four permanent meteorological towers (up to 80 meters tall); and
- an associated transmission line.

A transmission line route has not yet been determined. A separate notification describing the proposed route will be distributed once a corridor has been established.

The Project's temporary facilities will include:

- temporary batch plant area;
- staging/lay down area for construction of the Project;
- staging area for delivery trucks;
- temporary meteorological towers before and after construction; and
- •temporary improvements to public roads including wide-turn radii.



The turbine locations, access roads and electrical connections have not been finalized at this time. Table 1 provides the sections of land Cattle Ridge Wind Farm is evaluating for siting the wind energy project.

State	County	Civil Township	Township	Range	Sections
		Name			
SD	Grant	Osceola	121 N	50 W	35
SD	Grant	Mazeppa	120 N	51 W	1, 11-14, 23-26, 35, 36
SD	Grant	Twin Brooks	120 N	50 W	6-8, 17-22, 26-35
SD	Grant	Stockholm	119 N	50 W	3-11, 14-22

Table	1:	Sections	within	the	Cattle	Ridge	Wind	Farm	Project	t Boundary
I HOIC		Sections	********	UIIU	Cuttic	INAGU	· · · · · · · · · · · · · · · · · · ·	1	110100	Doundary

To facilitate your review, we have enclosed a map of Cattle Ridge Wind Farm's location and the associated project boundary.

We welcome any comments your agency may have at this time and throughout the permit application process. Any written agency comments provided in response to this letter will be incorporated into the PUC's review process.

If you require further information or have questions regarding this matter, please contact me at 952-988-9000 or at melissa@geronimoenergy.com.

Sincerely,

Melissa Schmit Senior Permitting Specialist

Enclosure: Cattle Ridge Wind Farm Location Map



June 1, 2016

Natalie Gates US Fish and Wildlife Service 420 South Garfield Avenue Suite 400 Pierre, SD 57501-5408

RE: Requesting Comments on Cattle Ridge Wind Farm in Grant County, South Dakota

Dear Natalie Gates,

Cattle Ridge Wind Farm, LLC ("Cattle Ridge Wind Farm"), a wholly owned subsidiary of Geronimo Energy, LLC, is gathering information and requesting agency comments for a proposed wind energy project in Grant County, South Dakota.

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If you require further information or have questions regarding this matter, please contact me at 952-988-9000 or at melissa@geronimoenergy.com.

Sincerely,

Melissa Schmit Senior Permitting Specialist

Enclosure: Cattle Ridge Wind Farm Location Map



June 1, 2016

Silka Kempema South Dakota Department of Game, Fish and Parks Joe Foss Building 523 East Capitol Pierre, SD 57501-3182

RE: Requesting Comments on Cattle Ridge Wind Farm in Grant County, South Dakota

Dear Silka Kempema,

Cattle Ridge Wind Farm, LLC ("Cattle Ridge Wind Farm"), a wholly owned subsidiary of Geronimo Energy, LLC, is gathering information and requesting agency comments for a proposed wind energy project in Grant County, South Dakota.

Cattle Ridge Wind Farm will be submitting a Facility Permit Application to the South Dakota Public Utilities Commission ("PUC").

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I HOIC		Sections	********	UIIU	Cuttic	INAGU	· · · · · · · · · · · · · · · · · · ·	1	110100	Doundary

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If you require further information or have questions regarding this matter, please contact me at 952-988-9000 or at melissa@geronimoenergy.com.

Sincerely,

Melissa Schmit Senior Permitting Specialist

Enclosure: Cattle Ridge Wind Farm Location Map



June 1, 2016

Leslie Petersen South Dakota Department of Game, Fish and Parks Joe Foss Building 523 East Capitol Pierre, SD 57501-3182

RE: Requesting Comments on Cattle Ridge Wind Farm in Grant County, South Dakota

Dear Leslie Petersen,

Cattle Ridge Wind Farm, LLC ("Cattle Ridge Wind Farm"), a wholly owned subsidiary of Geronimo Energy, LLC, is gathering information and requesting agency comments for a proposed wind energy project in Grant County, South Dakota.

Cattle Ridge Wind Farm will be submitting a Facility Permit Application to the South Dakota Public Utilities Commission ("PUC").

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To facilitate your review, we have enclosed a map of Cattle Ridge Wind Farm's location and the associated project boundary.

We welcome any comments your agency may have at this time and throughout the permit application process. Any written agency comments provided in response to this letter will be incorporated into the PUC's review process.

If you require further information or have questions regarding this matter, please contact me at 952-988-9000 or at melissa@geronimoenergy.com.

Sincerely,

Melissa Schmit Senior Permitting Specialist

Enclosure: Cattle Ridge Wind Farm Location Map



# **United States Department of the Interior**

FISH AND WILDLIFE SERVICE Ecological Services 420 South Garfield Avenue, Suite 400 Pierre, South Dakota 57501-5408

June 21, 2016

Melissa Schmit Geronimo Energy 7650 Edinborough Way, Suite 725 Edina, Minnesota 55435

> Re: Cattle Ridge Wind Farm, Grant County, South Dakota

Dear Ms. Schmit:

This letter is in response to your request dated June 1, 2016, for environmental comments regarding the above referenced Cattle Ridge Wind Farm with a nameplate capacity of up to 200 MW, proposed within Grant County, South Dakota. We appreciated the opportunity to meet with you last month regarding this project (as well as Geronimo Energy's proposed Crocker Wind Farm).

Per your letter, a transmission line will be necessary for this project, but since the route has not yet been determined, a separate correspondence will be forthcoming for that portion of the project. We do have guidance relative to wildlife electrocution and collision risks due to overhead transmission lines and we provide that information herein.

We also provide information regarding important wildlife habitats and U.S. Fish and Wildlife Service (Service) trust resources including federally listed species, eagles, birds of conservation concern, and other migratory birds that may occur on the project area. We have included recommended measures to be applied to various components of a wind farm including meteorological towers, power lines, and the turbines themselves, in order to minimize impacts to Service trust resources and to assist you in achieving compliance with Federal laws.

We reiterate from our May meeting the recommendation to avoid impacts to grasslands. These areas, particularly with the existence of numerous wetlands within them, are of particular concern at this project site. Such grassland/wetland complexes are important wildlife habitats in South Dakota, and are becoming increasingly rare, particularly in the tallgrass prairie region within which the Cattle Ridge Project is proposed.

## **U.S. Fish and Wildlife Service Easements**

As you know, the location of the proposed Cattle Ridge Wind Farm falls within an area under the jurisdiction of the Service's Waubay Wetland Management District (WMD) and numerous Service easements exist within the proposed project area. This is a testament to the high wildlife value of the area and associated potential for environmental impacts that may be anticipated if



Exhibit A20-1

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this project is constructed. Ms. Connie Mueller of Waubay WMD provided some information relative to these properties during our May 2016 meeting; please continue your coordination with Ms. Mueller regarding any restrictions that apply regarding those sites. She may be reached at: U.S. Fish and Wildlife Service, Waubay Wetland Management District, 44401 134A Street, Waubay, South Dakota, 57273, phone: (605) 947-4521.

## **Threatened/Endangered Species**

In accordance with section 7(c) of the Endangered Species Act (ESA), as amended, 16 U.S.C. 1531 et seq., we have determined that the following federally listed species may occur in the project area (this list is considered valid for 90 days):

<u>Species</u> Rufa Red Knot	<u>Status</u> Threatened	Expected Occurrence Rare seasonal migrant
(Calidris canutus rufa)		C C
Northern Long-eared Bat (Myotis septentrionalis)	Threatened	Summer resident, seasonal migrant, known winter resident in Black Hills
Poweshiek Skipperling (Oarisma poweshiek)	Endangered	Possible resident in native prairie, northeastern SD
Dakota Skipper (Hesperia dacotae)	Threatened	Resident in native prairie, northeastern SD

## Rufa Red Knot:

The rufa red knot is a robin-sized shorebird listed as threatened under the Endangered Species Act (see: http://www.gpo.gov/fdsys/pkg/FR-2014-12-11/pdf/2014-28338.pdf for more information). The red knot migrates annually between its breeding grounds in the Canadian Arctic and several wintering regions, including the Southeast United States, the Northeast Gulf of Mexico, northern Brazil, and Tierra del Fuego at the southern tip of South America. Although it is primarily a coastal species, small numbers of rufa red knots are reported annually across the interior United States (i.e., greater than 25 miles from the Gulf or Atlantic Coasts) during spring and fall migration. These reported sightings are concentrated along the Great Lakes, but multiple reports have been made from nearly every interior State, including South Dakota. The species does not breed in this state.

## Northern Long-eared Bat:

The northern long-eared bat is a medium-sized brown bat listed as threatened under the Endangered Species Act. Northern long-eared bats are known to be present in South Dakota during the summer months, primarily roosting singly or in colonies underneath bark, in cavities or in crevices of both live and dead trees. Some hibernacula have been documented in caves/mines in the Black Hills. The species has been documented in other forested areas in the state during the summer months and along the Missouri River during migration. White nose syndrome - a fungus affecting hibernating bats - is considered a significant threat to this species, but individuals may be harmed by other activities such as modifications to hibernacula, timber harvest, human disturbance, and collisions with wind turbines. Currently, feathering turbine

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blades and increasing cut-in speeds are recommended measures to reduce the risk of bat mortality at wind generation facilities. A 4(d) rule has been published that exempts take of Northern long-eared bats in certain circumstances. For more information, see: https://www.fws.gov/Midwest/Endangered/mammals/nleb/index.html.

### Poweshiek Skipperling:

The Poweshiek skipperling is a small prairie butterfly listed as endangered under the Endangered Species Act (see: http://www.gpo.gov/fdsys/pkg/FR-2014-10-24/pdf/2014-25190.pdf). As noted in email correspondence between yourself and Natalie Gates of this office, May 31, 2016, there are historic records of Poweshiek skipperlings within the proposed project area. Although the particular location we are aware of no longer offers suitable habitat, there may be other habitat in the area. The habitat of Poweshiek skipperlings includes prairie fens, grassy lake and stream margins, moist meadows, and wet-mesic to dry tallgrass prairie. Preferred nectar plants for adult Poweshieks include smooth ox-eye (Heliopsis helianthoides) and purple coneflower (Echinacea angustifolia), but they also use stiff tickseed (Coreopsis palmate), black-eyed susan (Rudbeckia hirta), and palespike lobelia (Lobelia spicata). Larval food plants are assumed to include spike-rush, sedges, prairie dropseed (Sporobolus heterolepis) and little bluestem (Schizachyrium scoparium). Poweshiek skipperlings have one flight per year from about the middle of June through the end of July (depending upon weather). They have a low dispersal capability, and may not cross areas that are not structurally similar to native prairies. Extirpation from fragmented and isolated prairie remnants may be permanent unless it occurs within about 0.6 miles of an inhabited site that generates a sufficient number of emigrants. They are vulnerable to extreme weather conditions, dormant season fire, and other disturbances (e.g., intense cattle grazing). Avoidance of impacts to native prairie habitat is recommended to reduce the risk of adverse effects to this species. Critical habitat has been designated for the Poweshiek skipperling in South Dakota; for details and locations see the following website: http://www.fws.gov/midwest/endangered/insects/dask/finalch.html.

## Dakota Skipper

The Dakota skipper is a small prairie butterfly listed as a threatened species under the Endangered Species Act (see: http://www.gpo.gov/fdsys/pkg/FR-2014-10-24/pdf/2014-25190.pdf). The May 31, 2016 email correspondence between yourself and Natalie Gates of this office, also indicated there are historic records of Dakota skipper within the proposed project area, but again, while the particular location we are aware of no longer offers suitable habitat for these butterflies, there may be other habitat available in the area. Dakota skippers are obligate residents of high quality prairie ranging from wet-mesic tallgrass prairie to dry-mesic mixed grass prairie. In northeastern South Dakota, Dakota skippers inhabit dry-mesic hill prairies with abundant purple coneflower (Echinacea angustifolia), but also use mesic to wet-mesic tallgrass prairie habitats characterized by wood lily (Lilium philadelphicum) and mountain death camas (smooth camas; Zigadenus elegans). Their dispersal ability is very limited due in part to their short adult life span and single annual flight. Extirpation from a site may be permanent unless it occurs within about 0.6 miles of an inhabited site that generates a sufficient number of emigrants. Avoidance of impacts to native prairie habitat is recommended to reduce the risk of adverse effects to this species. Critical habitat has been designated for this species in South Dakota; for details and locations see the following website:

http://www.fws.gov/Midwest/endangered/insects/dask/index.html.

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If a Federal nexus exists for this project and the Federal action agency (or their designated representative) determines that the project "may adversely affect" listed species in South Dakota, formal consultation with this office under section 7 of the ESA is required. If a "may affect - not likely to adversely affect" determination is made for this project, it should be submitted to this office for concurrence. If a "no effect" determination is made, further consultation may not be necessary; however, a copy of the determination should be sent to this office.

If no Federal agency is involved with the proposed project and adverse impacts to federally listed species may occur, ESA compliance may be achieved by private entities via coordination with this office and development of a Habitat Conservation Plan (HCP). Our website provides more information on HCPs at: <u>http://www.fws.gov/endangered/what-we-do/hcp-overview.html</u>.

## **Bald Eagles**

Bald eagles (Haliaeetus leucocephalus) occur throughout South Dakota in all seasons, and new nests are appearing each year. While ESA protection for the bald eagle has been removed, the species will continue to be protected under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA). These laws protect eagles from a variety of harmful actions and impacts. Our agency has developed guidance for the public regarding means to avoid take of the eagle under these laws. The National Bald Eagle Management Guidelines are available online: http://www.fws.gov/northeast/ecologicalservices/eaglenationalguide.html. We recommend reviewing these guidelines as they advise of circumstances where these laws may apply and assist in avoiding potential violations on future projects. Additionally, permit regulations have been published for eagles. These regulations may be found in the Federal Register (Volume 74, No. 175, Friday, September 11, 2009) online at: http://www.gpoaccess.gov/fr/index.html. Eagle Conservation Plan Guidance has also been developed by the Service. This document provides interpretive guidance in applying the regulatory permit standards as specified by the BGEPA and other federal laws, and facilitates the process of obtaining an eagle take permit. It is available online at: https://www.fws.gov/migratorybirds/pdf/management/eagleconservationplanguidance.pdf. South Dakota is part of the Service's Region 6, therefore we have enclosed a document intended to further assist wind companies working in this region as they develop Eagle Conservation Plans: Final Outline and Components of an Eagle Conservation Plan (ECP) for Wind Development: Recommendations from USFWS Region 6.

## Wetlands

According to National Wetlands Inventory maps (available online at http://wetlands.fws.gov/), numerous wetlands exist within the proposed project area, including several relatively large water bodies which may attract high numbers of migratory birds. If a project may impact wetlands or other important fish and wildlife habitats, the Service, in accordance with the National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347) and other environmental laws and rules, recommends complete avoidance of these areas, if possible; then minimization of any adverse impacts; and finally, replacement of any lost acres; in that order. Alternatives should be examined and the least damaging practical alternative selected. If wetland impacts are unavoidable, a mitigation plan addressing the number and types of wetland acres to be impacted and the methods of replacement should be prepared and submitted to the resource agencies for review.

## Birds of Conservation Concern and Other Grassland Birds

The Migratory Birds Division of the Service has published *Birds of Conservation Concern 2008*, which may be found online at:

https://www.fws.gov/migratorybirds/pdf/grants/BirdsofConservationConcern2008.pdf. This document is intended to identify species in need of coordinated and proactive conservation efforts among State, Federal, and private entities, with the goals of precluding future evaluation of these species for ESA protections and promoting/conserving long-term avian diversity. Primary threats impacting grassland species that occur in South Dakota are habitat loss and fragmentation. As mentioned above, the area proposed for construction of this wind development appears to be in an area of intact grassland with numerous associated wetlands - a highly valuable area for prairie wildlife. In accordance with Executive Order 13186 regarding migratory bird protection, we recommend avoidance, minimization, and finally compensation to reduce the impacts to species protected by the MBTA. Compliance with this law may be partially addressed in a Bird and Bat Conservation Strategy (BBCS) (identified within our Land-Based Wind Energy Guidance - and explained further below). However, a separate mitigation plan that specifically addresses direct and indirect take of birds during and after construction is also recommended, particularly if placement must occur within intact native grasslands. Some species of grassland nesting birds are known to exhibit avoidance behavior relative to wind turbines on the prairie landscape, out to a distance of 300 m or more (Shaffer and Buhl 2015\*), which equates to an area approximately 70 acres in size around each turbine.

If prairie habitat impacts are unavoidable, we recommend implementing offsetting measures for this impact, such as prairie restoration, establishment of easements, or purchase of fee title lands. We can provide further guidance in this regard if the project progresses.

## Wind Turbine Guidelines

While there is still much to be learned regarding wind turbine-wildlife interactions, we do know that wind turbines can have adverse impacts on some species. Turbine location, spacing, aspect, lighting, size, and design are all potential factors related to the risk posed to resident and migratory wildlife as are the types of surrounding habitats, their use by various species of wildlife, landscape features, prey base, migration corridors, and behavioral patterns. Direct collision mortality is a concern, as is loss of habitat caused by the footprint of the turbines and associated roads and structures along with impacts that can occur with encroachment of invasive weeds as a result of these disturbances. Currently, perhaps the best means of avoiding impacts to wildlife is to avoid placing wind farms within high wildlife use areas. Placement of turbines within existing cropland is recommended for this reason. The U.S. Fish and Wildlife Service Land-Based Wind Energy Guidelines are designed to help wind energy project developers avoid and minimize impacts of land-based wind projects on wildlife and their habitats are available at: http://www.fws.gov/windenergy/.

If the proposed project is to be constructed, we request the results of any pre-/post-construction wildlife monitoring, including any incidental mortality detected.

## **Meteorological Towers**

Meteorological towers constructed in association with wind turbines are often similar in design to typical communication towers: tall, lighted, lattice structured, and guyed. Of primary concern are the collision mortality risks posed to migratory birds as towers are currently estimated to kill 6.8 million birds per year in the United States and Canada (Longcore et al. 2012). We have enclosed Service guidance on this issue, our 2013 U.S. Fish and Wildlife Service (USFWS) Revised Voluntary Guidelines for Communication Tower Design, Siting, Construction, Operation, Retrofitting, and Decommissioning. Among the primary concerns addressed within our guidelines are the establishment of new towers on the landscape, the heights of these towers, their lighting scheme, and means of structural support. Collocation of communications tower facilities on an existing structure is strongly recommended to avoid any additional impacts to migratory birds. If a new tower is necessary, placement of the new tower near other existing structures is recommended to concentrate the risk posed by the towers to relatively small areas. Minimization of tower height (below 200 feet to preclude the need for Federal Aviation Administration lighting requirements), use of only strobe or flashing lights (no steady-burning lights), and avoidance of guy wires (a great deal of avian mortality is a result of collisions with supporting guy wires) are important components intended to minimize potential impacts to migratory birds.

## **Power Lines**

The construction of additional overhead power lines associated with wind farms creates the threat of avian electrocution, particularly for raptors. Thousands of these birds, including endangered species, are killed annually as they attempt to utilize overhead power lines as nesting, hunting, resting, feeding, and sunning sites. The Service recommends the installation of underground, rather than overhead, power lines whenever possible/appropriate to minimize environmental disturbances. For all new overhead lines or modernization of old overhead lines, we recommend incorporating measures to prevent avian electrocutions. The publication entitled *Suggested Practices for Avian Protection on Power Lines - The State of the Art in 2006* has many good suggestions including pole extensions, modified positioning of live phase conductors and ground wires, placement of perch guards and elevated perches, elimination of cross arms, use of wood (not metal) braces, and installation of various insulating covers. You may obtain this publication by contacting the Edison Electric Institute via their website at: <a href="http://www.eei.org/resourcesandmedia/products/Pages/products.aspx">http://www.eei.org/resourcesandmedia/products/Pages/products.aspx</a>, or by calling 202-508-5000.

Please note that utilizing just one of the "Suggested Practices . . ." methods may not entirely remove the threat of electrocution to raptors. In fact, improper use of some methods may increase electrocution mortality. Perch guards, for example, may be only partially effective as some birds may still attempt to perch on structures with misplaced or small-sized guards and suffer electrocution as they approach too close to conducting materials. Among the most dangerous structures to raptors are poles that are located at a crossing of two or more lines, exposed above-ground transformers, or dead end poles. Numerous hot and neutral lines at these sites, combined with inadequate spacing between conductors, increase the threat of raptor electrocutions. Perch guards placed on other poles has, in some cases, served to actually shift birds to these more dangerous sites, increasing the number of mortalities.

Thus, it may be necessary to utilize other methods or combine methods to achieve the best results. The same principles may be applied to substation structures.

Please also note that the spacing recommendation within the "Suggested Practices . . ." publication of at least 60 inches between conductors or features that cause grounding may not be protective of larger raptors such as eagles. This measure was based on the fact that the skin-toskin contact distance on these birds (i.e., talon to beak, wrist to wrist, etc.) is less than 60 inches. However, an adult eagle's wingspan (distance between feather tips) may vary from 66 to 96 inches depending on the species (golden or bald) and gender of the bird, and unfortunately, wet feathers in contact with conductors and/or grounding connections can result in a lethal electrical surge. Thus, the focus of the above precautionary measures should be to a) provide more than 96 inches of spacing between conductors or grounding features, b) insulate exposed conducting features so that contact will not cause raptor electrocution, and/or c) prevent raptors from perching on the poles in the first place.

Additional information regarding simple, effective ways to prevent raptor electrocutions on power lines is available in video form. *Raptors at Risk* may be obtained by contacting EDM International, Inc. at 4001 Automation Way, Fort Collins, Colorado 80525-3479, Telephone No. (970) 204-4001, or by visiting their website at: http://www.edmlink.com/raptorvideo.htm.

In addition to electrocution, overhead power lines also present the threat of avian line strike mortality. Particularly in situations where these lines are adjacent to wetlands or where waters exist on opposite sides of the lines, we recommend marking them in order to make them more visible to birds. For more information on bird strikes, please see *Reducing Avian Collisions with Power Lines: The State of the Art in 2012* which, again, may be obtained by contacting the Edison Electric Institute via their website at

http://www.eei.org/resourcesandmedia/products/Pages/products.aspx, or by calling 202-508-5000.

### **Bird and Bat Conservation Strategy**

As with Eagle Conservation Plans for wind projects in this region, we have developed a document to further assist companies in following our established national guidance on BBCSs. We have enclosed our Region 6 *Outline for a Bird and Bat Conservation Strategy: Wind Energy Projects*. As stated in the introduction of that document: a BBCS "...*is a life-of-a-project framework for identifying and implementing actions to conserve birds and bats during wind energy project planning, construction, operation, maintenance, and decommissioning. It is the responsibility of wind energy project developers and operators to effectively assess project-related impacts to birds, bats and their habitats, and to work to avoid and minimize those impacts.*" A BBCS explains the actions taken by developers as they progress through the tiers of our Land-Based Wind Energy Guidelines, describing the analyses, studies, and reasoning implemented with the purpose of mitigating for potential avian and bat impacts. It also addresses postconstruction monitoring and habitat impacts. We recommend you develop a BBCS as this project progresses.

## **Migratory Bird Treaty Act**

The Migratory Bird Treaty Act prohibits the taking, killing, possession, and transportation. (among other actions) of migratory birds, their eggs, parts, and nests, except when specifically permitted by regulations. While the MBTA has no provision for allowing unauthorized take, the Service realizes that some birds may be killed as a result of wind farm operations, even if all known reasonable and effective measures to protect birds are used. The Service's Office of Law Enforcement carries out its mission to protect migratory birds through investigations and enforcement, as well as by fostering relationships with individuals, companies, and industries that have taken effective steps to avoid take of migratory birds and by encouraging others to implement measures to avoid take of migratory birds. It is not possible to absolve individuals. companies, or agencies from liability even if they implement bird mortality avoidance or other similar protective measures. However, the Office of Law Enforcement focuses its resources on investigating and prosecuting individuals and companies that take migratory birds without identifying and implementing all reasonable, prudent and effective measures to avoid that take. Companies are encouraged to work closely with Service biologists to identify available protective measures when developing project plans and/or avian protection plans, and to implement those measures prior to/during construction, operation, or similar activities.

### Summary

Below we reiterate the items discussed above that are pertinent to the proposed project, any associated recommended guidance or related information and suggested actions.

- Service easement properties and high value grassland/wetland habitats exist onsite:
  - Avoid grassland/wetland impacts
  - o Continue coordination with USFWS Waubay WMD staff
- Address potential impacts to federally listed (ESA) species:
  - Rufa red knot
  - Northern long-eared bat
  - Poweshiek skipperling
  - o Dakota skipper
- Address potential impacts to eagles:
  - MBTA and BGEPA
  - o National Bald Eagle Management Guidelines
  - o Eagle Conservation Plan Guidance
    - Final Outline and Components of an Eagle Conservation Plan (ECP) for Wind Development: Recommendations from USFWS Region 6
- · Address potential impacts to wetlands
- Wind farm guidance:
  - o Land-Based Wind Energy Guidelines
    - Bird and Bat Conservation Strategy
      - USFWS Region 6 Outline for a Bird and Bat Conservation Strategy: Wind Energy Projects

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- Address migratory bird impacts:
  - o MBTA
  - Birds of Conservation Concern 2008
  - Mitigative/offsetting measures for grassland habitat avoidance/loss
  - Meteorological Towers:
    - 2013 USFWS Revised Voluntary Guidelines for Communication Tower Design, Siting, Construction, Operation, Retrofitting, and Decommissioning
  - Overhead Power Lines:
    - Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006
    - Raptors at Risk video
    - Reducing Avian Collisions with Power Lines: The State of the Art in 2012

If changes are made in the project plans or operating criteria, or if additional information becomes available, the Service must be informed so that the above determinations can be reconsidered.

We appreciate the opportunity to provide comments on this project. If you have any questions on these comments, please contact Natalie Gates of this office at (605) 224-8693, Extension 227.

Sincerely,

Inthearon

Scott Larson Field Supervisor South Dakota Field Office

Cc: South Dakota Game, Fish and Parks; Pierre, SD (Attention: Silka Kempema) USFWS Waubay NWR/WMD; Waubay, SD (Attention: Connie Mueller)

Enclosures

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2013 U.S. Fish and Wildlife Service (USFWS) Revised Voluntary Guidelines for Communication Tower Design, Siting, Construction, Operation, Retrofitting, and Decommissioning –

Suggestions Based on Previous USFWS Recommendations to FCC Regarding WT Docket No. 03-187, FCC 06-164, Notice of Proposed Rulemaking, "Effects of Communication Towers on Migratory Birds" (2007), Docket No. 08-61, FCC's Antenna Structure Registration Program (2011), Service 2012 Wind Energy Guidelines, and Service 2013 Eagle Conservation Plan Guidance

Submitted by:

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Last updated: September 27, 2013

[Comm Tower 2013 Revised Guidance-to FCC-AMM.docx]

1. Collocation of the communications equipment on an existing communication tower or other structure (e.g., billboard, water and transmission tower, distribution pole, or building mount) is strongly recommended. Depending on tower load factors and communication needs, from 6 to 10 providers should collocate on an existing tower or structure provided that frequencies do not overlap/"bleed" or where frequency length or broadcast distance requires higher towers. New towers should be designed structurally and electronically to accommodate the applicant's antenna, and antennas of at least 2 additional users – ideally 6 to 10 additional users, if possible – unless the design would require the addition of lights and/or guy wires to an otherwise unlit and/or unguyed tower. This recommendation is intended to reduce the number of towers needed in the future.

2. If collocation is not feasible and a new tower or towers are to be constructed, it is strongly recommended that the new tower(s) should be not more than 199 feet above ground level (AGL), and that construction techniques should not require guy wires. Such towers should be unlighted if Federal Aviation Administration (FAA) regulations and lighting standards (FAA 2007, Patterson 2012, FAA 2013 lighting circular anticipated update) permit. Additionally, the Federal Communications Commission (FCC) through recent rulemaking now requires that new towers  $\geq$  450 ft AGL contain no red-steady lights. FCC also recommends that new towers 350-450 ft AGL also contain no red-steady lights, and they will eventually recommend that new towers < 350 ft AGL convert non-flashing lights to flash with existing flashing lights. LED lights are being suggested as replacements for all new construction and for retrofits, with the intent of future synchronizing the flashes. Given these dynamics, the Service recommends using lattice tower or monopole structures for all towers < 200 ft AGL and for taller towers where feasible. The Service considers the less than 200 ft AGL option the "gold standard" and suggests that this

is the environmentally preferred industry standard for tower placement, construction and operation -i.e., towers that are unlit, unguyed, monopole or lattice, and less than 200 ft AGL.

3. If constructing multiple towers, the cumulative impacts of all the towers to migratory birds – especially to Birds of Conservation Concern (FWS 2008) and threatened and endangered species, as well as the impacts of each individual tower, should be considered during the development of a project.

4. The topography of the proposed tower site and surrounding habitat should be clearly noted, especially in regard to surrounding hills, mountains, mountain passes, ridge lines, rivers, lakes, wetlands, and other habitat types used by raptors, Birds of Conservation Concern, and state and federally listed species, and other birds of concern. Active raptor nests, especially those of Bald and Golden Eagles, should be noted, including known or suspected distances from proposed tower sites to nest locations. Nest site locations for Golden Eagles may vary between years, and unoccupied, inactive nests and nest sites may be re-occupied over multiple years. The Service's 2013 Eagle Conservation Plan Guidance, Module 1, Land-based Wind Energy, Version 2, available on our website, is a useful document (USFWS 2013).

5. If at all possible, new towers should be sited within existing "antenna farms" (i.e., clusters of towers), in degraded areas (e.g., strip mines or other heavily industrialized areas), in commercial agricultural lands, in Superfund sites, or other areas where bird habitat is poor or marginal. Towers should not be sited in or near wetlands, other known bird concentration areas (e.g., state of federal refuges, staging areas, rookeries, and Important Bird Areas), in known migratory, daily movement flyways, areas of breeding concentration, in habitat of threatened or endangered species, or key habitats for Birds of Conservation Concern (FWS 2008). Disturbance can result in effects to bird populations which may cumulatively affect their survival. The Service has recommended some disturbance-free buffers, e.g., 0.5 mi around raptor nests during the nesting season, and 1-mi disturbance free buffers for Ferruginous Hawks and Bald Eagles during nesting season in Wyoming (FWS WY Ecological Services Field Office, referenced in Manville 2007:23). The effects of towers on "prairie grouse," "sage grouse," and grassland and shrubsteppe bird species should also be considered since tall structures have been shown to result in abandonment of nest site areas and leks, especially for "prairie grouse" (Manville 2004). The issue of buffers is currently under review, especially for Bald and Golden Eagles. Additionally, towers should not be sited in areas with a high incidence of fog, mist, and low cloud ceilings.

6. If taller (> 199 ft AGL) towers requiring lights for aviation safety must be constructed, the minimum amount of pilot warning and obstruction avoidance lighting required by the FAA should be used. Unless otherwise required by the FAA, only white strobe or red strobe lights (red preferable since it is generally less displeasing to the human eye at night), or red flashing incandescent lights should be used at night, and these should be the minimum number, minimum intensity (< 2,000 candela), and minimum number of flashes per minute (i.e., longest duration between flashes/"dark phase") allowable by the FAA. The use of solid (non-flashing) warning lights at night should be avoided (Patterson 2012, Gehring et al. 2009) – see recommendation #2 above. Current research indicates that solid red lights attract night-migrating birds at a much higher rate than flashing lights (Gehring et al. 2009, Manville 2007, 2009). Recent research

indicates that use of white strobe, red strobe, or red flashing lights alone provides significant reductions in bird fatalities (Patterson 2012, Gehring et al. 2009).

7. Tower designs using guy wires for support, which are proposed to be located in known raptor or waterbird concentrations areas, daily movement routes, major diurnal migratory bird movement routes, staging areas, or stopover sites, should have daytime visual markers or bird deterrent devices installed on the wires to prevent collisions by these diurnally moving species. The efficacy of bird deterrents on guy wires to alert night migrating species has yet to be scientifically validated. For guidance on markers, see Avian Power Line Interaction Committee (APLIC). 2006. Suggested Practices for Avian Protection on Power Lines -- State of the Art in 2006. Edison Electric Institute, APLIC, and the California Energy Commission. Washington, DC, and Sacramento, CA. 207 pp, and APLIC. 2012. Reducing Avian Collisions with Power Lines -- the State of the Art in 2012. Edison Electric Institute and APLIC. Washington, DC. 159 pp. Also see www.aplic.org, www.energy.ca.gov, or call 202-508-5000.

8. Towers and appendant facilities should be designed, sited, and constructed so as to avoid or minimize habitat loss within and adjacent to the tower "footprint." However, a larger tower footprint is preferable to the use of guy wires in construction. Several shorter, un-guyed towers are preferable to one, tall guyed, lighted tower. Road access and fencing should be minimized to reduce or prevent habitat fragmentation, disturbance, and the creation of barriers, and to reduce above ground obstacles to birds in flight.

9. If, prior to tower design, siting and construction, if it has been determined that a significant number of breeding, feeding and roosting birds, especially of Birds of Conservation Concern (FWS 2008), state or federally-listed bird species, and eagles are known to habitually use the proposed tower construction area, relocation to an alternate site is highly recommended. If this is not an option, seasonal restrictions on construction are advised in order to avoid disturbance, site and nest abandonment, especially during breeding, rearing and other periods of high bird activity.

10. Security lighting for on-ground facilities, equipment and infrastructure should be motion- or heat-sensitive, down-shielded, and of a minimum intensity to reduce nighttime bird attraction and eliminate constant nighttime illumination, but still allow safe nighttime access to the site (USFWS 2012, Manville 2011).

11. Representatives from the USFWS or researchers from the Research Subcommittee of the Communication Tower Working Group should be allowed access to the site to evaluate bird use; conduct dead-bird searches; place above ground net catchments below the towers (Manville 2002); and to perform studies using radar, Global Position System, infrared, thermal imagery, and acoustical monitoring, as necessary. This will allow for assessment and verification of bird movements, site use, avoidance, and mortality. The goal is to acquire information on the impacts of various tower types, sizes, configurations and lighting protocols.

12. Towers no longer in use, not re-licensed by the FCC for use, or determined to be obsolete should be removed from the site within 12 months of cessation of use, preferably sooner.

13. In order to obtain information on the usefulness of these guidelines in preventing bird strikes and better understanding impacts from habitat fragmentation, please advise USFWS personnel of the final location and specifications of the proposed tower, and which measures recommended in these guidelines were implemented. If any of these recommended measures cannot be implemented, please explain why they are not feasible. This will further advise USFWS in identifying any recurring problems with the implementation of the guidelines, which may necessitate future modifications.

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#### U.S. Fish and Wildlife Service, Region 6, Mountain-Prairie Region

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#### Outline for a Bird and Bat Conservation Strategy: Wind Energy Projects

A Bird and Bat Conservation Strategy (BBCS) is a life-of-a-project framework for identifying and implementing actions to conserve birds and bats during wind energy project planning, construction, operation, maintenance, and decommissioning. It is the responsibility of wind energy project developers and operators to effectively assess project-related impacts to birds, bats and their habitats, and to work to avoid and minimize those impacts.

A wind project BBCS should be updated regularly as new information, including monitoring of project impacts and technical advancements, becomes available. A BBCS is a strategy for assessing impacts, avoiding/minimizing impacts, guiding current actions, and planning future impact assessments and actions to conserve birds and bats. It provides reference to project history and previous impact assessments and actions. A BBCS contains the studies, analyses, and reasoning leading to project-specific decisions and implementation of actions. The 2012 U.S. Fish and Wildlife Service (USFWS) Land-Based Wind Energy Guidelines (WEG) provides comprehensive guidance on the process for addressing bird and bat conservation at all stages of wind energy development.

Decisions made through the BBCS framework include determining if there is a need to develop other bird and bat conservation plans such as an Eagle Conservation Plan (2013 USFWS Eagle Conservation Plan Guidance) or Habitat Conservation Plan (Endangered Species Act, section 10(a)(1)(B). Specific surveys needed to support those plans may be most effectively conducted in tandem with surveys to develop the BBCS.

Wind energy projects currently in operation which have not been planned, developed, or operated following a BBCS framework, will, at a minimum, need to supplement assessments of impacts to birds and bats with Post-Construction Assessments and Adaptive Management Studies, working closely with the USFWS.

The following outline is provided by USFWS Region 6 as a guide for developing and organizing a BBCS.

#### Outline

#### I. Statement of Purpose

Identify how the BBCS functions as a strategy to address bird and bat conservation during all project phases.

#### II. Regulatory Framework

#### A. Fish and Wildlife Laws, Regulations, and Policies

Include the language provided and do not reference USFWS law enforcement or prosecutorial discretion in the BBCS.

#### 1. Migratory Bird Treaty Act (MBTA)

The MBTA is the cornerstone of migratory bird conservation and protection in the United States. The MBTA implements four treaties that provide for international protection of migratory birds. It is a strict liability statute, meaning that proof of intent, knowledge, or negligence is not an element of an MBTA violation. The statute's language is clear that actions resulting in a "taking" or possession (permanent or temporary) of a protected species, in the absence of a USFWS permit or regulatory authorization, are a violation. The MBTA states, "Unless and except as permitted by regulations ... it shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill ... possess, offer for sale, sell ... purchase ... ship, export, import ...transport or cause to be transported... any migratory bird, any part, nest, or eggs of any such bird ..." 16 U.S.C. 703. The word "take" is defined by regulation as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect" 50 CFR 10.12. The USFWS maintains a list of all species protected by the MBTA at 50 CFR 10.13. This list includes over one thousand species of migratory birds, including eagles and other raptors, waterfowl, shorebirds, seabirds, wading birds, and passerines.

#### 2. Bald and Golden Eagle Protection Act (Eagle Act)

Under authority of the Eagle Act, 16 U.S.C. 668–668d, bald eagles and golden eagles are afforded additional legal protection. The Eagle Act prohibits the take, sale, purchase, barter, offer of sale, purchase, or barter, transport, export or import, at any time or in any manner of any bald or golden eagle, alive or dead, or any part, nest, or egg thereof, 16 U.S.C. 668. The Eagle Act also defines take to include "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb," 16 U.S.C. 668c, and includes criminal and civil penalties for violating the statute. See 16 U.S.C. 668. The term "disturb" is defined as agitating or bothering an eagle to a degree that causes, or is likely to cause, injury to an eagle, or either a decrease in productivity or nest abandonment by substantially interfering with normal breeding, feeding, or sheltering behavior, 50 CFR 22.3.

3. Endangered Species Act (ESA)

The ESA directs the USFWS to identify and protect endangered and threatened species and their critical habitat, and to provide a means to conserve their ecosystems. Among its other provisions, the ESA requires the USFWS to assess civil and criminal penalties for violations of the Act or its regulations. Section 9 of the ESA prohibits take of federally-listed species. Take is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct" 16 U.S.C. 1532. The term "harm" includes significant habitat alteration which kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering, 50 CFR 17.3. Projects involving Federal lands, funding or authorizations will require consultation between the Federal agency and the USFWS, pursuant to section 7 of the ESA. Projects without a

Federal nexus should work directly with USFWS to avoid adversely impacting listed species and their critical habitats.

B. Other Federal, State, County, Local and Tribal Laws, Regulations, and Policies

#### III. Project Description

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Provide descriptions and maps of all project elements (e.g., roads, power lines, met towers) during all phases of pre-construction, construction, operation, maintenance, and decommissioning. Describe and provide maps of the project impact area (inside and outside project area boundary) where the project may potentially impact birds, bats and their habitats.

#### IV. Project History of Bird and Bat Presence, and Risk Assessments

- A. Preliminary Site Evaluation (WEG Tier 1)
  - 1. Site Description

Describe proposed wind energy site(s) within the broader geographic landscape of bird and bat distribution, use, and habitats.

2. Decision to Abandon Site(s) or Select Site(s) for Additional Assessments in WEG Tier 2 Describe evaluations of sites by answering questions in WEG Tier 1, Chapter 2: (1) Are species or habitats of concern present? (2) Does the landscape contain areas precluded by law or areas that are designated as sensitive? (3) Are there critical areas of wildlife congregation? (4) Is there potential to fragment large intact habitats for species that are sensitive to habitat fragmentation? Based on the answers to these questions, describe the decision to abandon sites or identify project modifications to effectively avoid and minimize potential adverse impacts.

## B. Site-specific Characterization and Decisions (WEG Tier 2)

Continue landscape-scale assessments and include site reconnaissance evaluations.

- Site Description
   Provide additional site information obtained through more detailed Tier 2 assessment.
- 2. Evaluation and Decisions
  - (a) Abandon Site or Advance to Field Surveys to Support a BBCS

Describe evaluations of sites by answering the four questions from WEG Tier 1, plus questions from WEG Tier 2, Chapter 3: (5) Are plant communities or vegetation habitats of conservation concern present? (6) What species of birds and bats are likely to use the proposed site? (7) Is there potential for significant adverse impacts to those species? If there is a high probability of significant adverse impacts that cannot be avoided or minimized, the site should be abandoned.

- (b) Determine Need for Other Bird or Bat Conservation Plans Describe determination of need, and reference field surveys, for an Eagle Conservation Plan) or Habitat Conservation Plan.
- C. Field Studies to Document Wildlife and Habitat, and Predict Project Impacts (WEG Tier 3) Describe the goals, methods, results, analyses and conclusions of field studies, and include maps to assess the presence of, and project risks to, birds and bats and their habitats. Describe potential project impacts by answering the seven questions from WEG Tier 1 and Tier 2, plus questions

from WEG Tier 3, Chapter 4: (8) What are the distributions, abundance, behaviors and site-use of birds and bats, and what project elements expose these species to risk? (9) What are the potential risks to individuals and local populations of birds and bats and their habitats? (10) How can impacts to birds and bats be avoided and minimized? (11) What studies should be initiated and continued post-construction to evaluate predictions of impacts to birds and bats? Describe the level of scientific rigor of studies, and coordination and sharing of data with USFWS field offices.

1. Bird and Bat Status Assessments

Describe how assessment studies were of sufficient duration and intensity to ensure adequate data were collected to accurately characterize bird and bat use of the area.

- (a) Bird and Bat Species Presence
  - (i) Species Presence by Season
  - (ii) Species of Concern (WEG, p. 63)
  - (iii) Species of Habitat Fragmentation Concern (WEG, p. 63)
- (b) Bird and Bat Habitats Describe, quantify, and map.
- (c) Bird and Bat Use Patterns Describe, quantify and map survey data (e.g., from point counts, acoustic surveys, and migration surveys).
- (d) Baseline (Pre-construction) Habitat Management
   Describe the management of habitat at the proposed site prior to construction.
- 2. Bird and Bat Risk Assessment and Decisions Based on Assessments Describe assessment methods and assumptions.
  - (a) Project Risk Assessment
    - (i) Direct Impacts:

Describe direct project impacts on birds and bats (e.g., wind turbine collisions, powerline electrocutions and collisions, vehicle collisions, barotrauma, disturbance, displacement, behavioral changes, and habitat loss, degradation and fragmentation).

(ii) Indirect Impacts

Describe indirect project impacts on birds and bats (e.g., loss of population vigor, attraction to modified habitats, and increased exposure to predation).

- (iii) Cumulative Impacts
- (b) Risk Assessment Decisions
  - (i) Decision Criteria to either Abandon Site or Advance Project
  - (ii) Decision of Need for Other Bird and Bat Conservation Plans Describe decision to develop other plans such an Eagle Conservation Plan, Habitat Conservation Plan, Candidate Conservation Plan with Assurances, or a plan to address state-managed species.

V. Conservation Measures to Avoid and Minimize Adverse Impacts (during project construction, operation, maintenance, and decommissioning)

Describe conservation measures and when and how each measure will be applied. Some measures will apply to all project phases, but other measures will only apply to specific phases of the project (e.g., construction versus operation). See WEG Chapter 7 for examples. While the following topics in the outline should all be included, the organization of this section may be modified (e.g., conservation measures may be organized by project phase, project elements, or category of conservation action).

- A. Measures to Avoid/Minimize Direct Impacts
  - 1. Fatalities
  - 2. Disturbance/Displacement/Behavioral Changes
    - (a) Nest/Roost/Hibernacula Management

Describe how impacts to nests and nesting attempts will be avoided or minimized during all phases of the project. For example, constructing outside the breeding season or using nest buffers may be appropriate during construction, but measures to discourage or prevent birds from nesting in a sub-station may be needed during operation.

- (b) Management of Other Habitat-use Areas (e.g., Foraging Areas)
- 3. Habitat Loss/Degradation/Fragmentation
- B. Measures to Avoid/Minimize Indirect Impacts For example, address measures to avoid loss of population vigor and increased exposure to
- C. Measures to Offset and/or Compensate for Habitat-Related Impacts
- D. Measures to Avoid and Minimize Other Identified Project-Specific Risks

#### VI. Post-construction Studies to Estimate Impacts (WEG Tier 4)

Provide assessments of ongoing project risks to birds and bats and the effectiveness of conservation measures. Describe study methods and the level of survey effort (i.e., how many of each survey type was conducted, over what time period and seasons, and location and geographic coverage).

A. Carcass Surveys

predation.

- B. Nest/Roost/Hibernacula Surveys
- C. Habitat Surveys
- D. Other Surveys

A need for surveys, such as point counts, acoustic surveys, mist net surveys, may be identified through measuring project impacts.

## VII. Other Post-construction Studies and Adaptive Management (WEG Tier 5)

Describe adaptive management studies which may (1) be planned during development of the BBCS via measuring impacts during post-construction and the discovery that conservation measures are not adequate to avoid and minimize impacts, or may (2) address unplanned or unforeseen impacts. Describe the actions taken during the following steps.

- A. Evaluate need for action (1) based on assessing effectiveness of conservation measures through post-construction monitoring of impacts, or (2) as determined by unforeseen impacts or circumstances.
- B. Identify potential technical/operational option(s) to avoid and minimize impacts (e.g., via scientific literature or industry innovation).
- C. Present technical/operational option(s) to agency/authority for review to determine if it merits field testing or application. If, after review, field testing or application is not merited, go to step B. If field testing or application is merited, go to step D.
- D. Field test or apply technical/operational option(s), with agency/authority concurrence of methods, in settings which will not increase adverse impacts to birds and bats nor will result in impacts exceeding those allowable in permits or other project-related plans.
- E. Evaluate and report effectiveness of technical/operational option(s) with review by agency/authority. If ineffective, go to step B. If effective go to step F.
- F. Apply effective avoidance and minimization measures.
- G. Monitor effectiveness (update post-construction monitoring in BBCS, if necessary, with agency/authority review).
- H. Update BBCS Section on Conservation Measures, return to step A to evaluate need for further action.
- VIII. Project Permits Addressing Birds and Bats Identify need for permits. For example, migratory bird permits would be required for active nest relocation, temporary possession, depredation, salvage/disposal, and scientific collection.
  - A. Bird and Bat Permits Identify permits needed for project construction, operation, and/or maintenance.
  - B. Agency and Process for Permit Issuance Identify the responsive agency and processes to apply for and comply with permits.
- IX. Reporting Formats and Schedule Describe formats and schedule for reporting data and study results to responsive agencies.
  - A. Preconstruction Survey Data
  - B. Operation/Post-construction Monitoring
  - C. Adaptive Management
  - D. Permits
- X. Personnel Training

Describe process and curriculum for providing personnel and contractors with education about wildlife laws; processes to follow upon finding injured birds, bats or carcasses; and actions they can take to avoid impacts to birds and bats.

- XI. Contacts/Key Resources
  - A. List of Contacts and Key Resources
  - B. Coordination Processes Who/when/where a company should initiate contact and under what circumstances.
- XII. References and Literature Cited

#### XIII. Appendices

111 1 1

- A. Baseline Survey Reports
- B. Post Construction Reports
  - 1. Carcass Monitoring
  - 2. Nest/Roost/Hibernacula Surveys
  - 3. Habitat Surveys
  - 4. Other Surveys: For example, point counts, acoustic surveys, mist net surveys
- C. Adaptive Management Studies
- D. Other Plans Guiding Bird and Bat Conservation (e.g., ECP)
- E. Permits Related to Birds and Bats

## U.S. Fish and Wildlife Service, Region 6, Mountain-Prairie Region

## Final Outline and Components of an Eagle Conservation Plan (ECP) for Wind Development: Recommendations from USFWS Region 6

#### Purpose and Expectations:

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The U.S. Fish and Wildlife Service (USFWS) Eagle Conservation Plan Guidance, Module 1, Land-based Wind Energy, Version 2 (ECPG)<sup>1</sup> provides specific in-depth guidance for developing an Eagle Conservation Plan (ECP) for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities. The ECP describes and documents how the project developer and/or operator intends to comply with the regulatory requirements for programmatic eagle take permits and the associated NEPA process by avoiding and minimizing the risk of taking eagles by evaluating possible alternatives in siting, configuration, construction, and operation of wind projects. The ECP should provide detailed information on siting, configuration, construction, and operational alternatives that avoid and minimize eagle take to the point where any remaining take is unavoidable and, if required, mitigates that remaining take to meet the statutory preservation standard. An ECP provides support for an application for a programmatic eagle take permit.

This Region 6 document provides recommendations, in an outline format, for developing and organizing the content of an ECP, and includes additional details on topics that should be addressed in an ECP. This guidance applies equally to both bald and golden eagles. While developing an ECP and applying for a programmatic eagle take permit is voluntary, take of eagles under the Bald and Golden Eagle Protection Act is prohibited without a permit; therefore, we encourage developers/operators of wind projects that may take eagles to develop an ECP and apply for a programmatic eagle take permit. Throughout the process of developing an ECP there should be regular communication between the project developer and/or operator and USFWS personnel (Ecological Services and Migratory Bird Management Offices). This can include emails, conference calls, and meetings involving review of survey data, review and editing of draft documents, joint development of avoidance and minimization measures, review and discussion on model runs, joint work on calculations for compensatory mitigation when required, etc.

<sup>1</sup> Available at <u>http://www.fws.gov/windenergy/PDF/Eagle%20Conservation%20Plan%20Guidance-Module%201.pdf</u>

#### **ECP Outline Recommendations:**

- Introduction and Purpose: Include an explanation of the relationship between the ECP and other related documents, such as NEPA reviews for the project (EA or EIS), Bird and Bat Conservation Strategy (BBCS), etc.
- II. Regulatory Framework

A. Laws and Regulations- Migratory Bird Treaty Act (MBTA) and Bald and Golden Eagle Protection Act (BGEPA) – Use applicable default language taken from the USFWS Wind Energy Guidelines (WEG; USFWS 2012, pp. 2-3)

B. State or Tribal Wildlife laws and other Federal laws that apply

III. Project Description

A. Describe all project components, including structures and infrastructure (wind turbines, roads, buildings, met towers, distribution and transmission lines, substations, etc.).

B. Provide a map of project area with project area boundary delineated.

C. Provide a map of topographic relief for the project area.

D. Provide a map of proposed final wind turbine layout, roads, distribution and transmission lines, substations, buildings, met towers (permanent), etc.

E. Provide a map of vegetation classes and aquatic features for the project, including a summary table with information on the acreage or linear miles of each class or feature present and how many acres/miles will be lost or degraded by project development.

IV. Initial Site Assessment (ECPG Stage 1)

A. Brief summary of available sources reviewed for the project site relative to eagles, including reports, publications, GIS maps, agency files, species experts, on-line databases, and initial site visit(s).

B. Were alternate sites considered/evaluated, and if so what criteria were used to compare sites?

C. Address all questions in ECPG Appendix B on page 51. Clearly identify the process used to address these questions. Based on the responses to these questions develop a map that categorizes eagle risk for all sites initially considered for development.

D. Categorize Eagle Risk for Stage 1 (ECPG Appendix B) using ECPG criteria on pp. 25-26.

V. Site-specific Surveys and Assessment (ECPG Stage 2): This section should address the questions in ECPG Appendix C, page 53.

#### A. Eagle Use

1. Thoroughly describe what types of eagle-use surveys were conducted, the survey protocols used, the number of surveys completed, and when surveys were conducted (years, seasonal coverage, time of day, etc.). Survey types may include, but are not limited to, eagle point count surveys, flight paths, migration monitoring, behavioral studies, and telemetry. If any survey protocols changed during these surveys, explain the changes and provide a rationale for them. If survey types and protocols differed from Appendix C in the ECPG, describe what the differences were and provide a rationale.

2. Include a map of points used for eagle use surveys and an estimate of the percentage of the project area and project footprint they cover.

3. Provide results and thorough details on all pre-construction site-specific surveys that were conducted by year and/or season. Summarize survey results in the ECP. If annual monitoring reports are available for the project, they may be included in an Appendix.

4. Provide results from any other field work to identify migration corridors, roost sites, foraging areas, wintering areas, etc., not mentioned above.

#### **B. Eagle Nests**

1. Describe what is known about eagle nesting in the project area prior to any projectrelated surveys; include a map showing the locations of all historic eagle nests.

2. Thoroughly describe all raptor/eagle nest surveys conducted (i.e. aerial, ground searches, etc.), including methodology, timing and frequency of the surveys; provide a map of the area searched for nests (i.e., how far out from the project area and project footprint did you survey for nests); describe condition of all eagle nests, provide photographs of eagle nest sites, provide outcomes for each eagle nest by species (i.e., tending, occupancy, productivity, and nest success); and provide project-area mean inter-nest distance for eagles by species (if calculated, provide methods used for that calculation).

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C. Eagle Prey Base Assessment

1. Thoroughly describe methodologies/protocols used to assess the eagle prey base (especially areas with concentrated prey resources).

2. Provide map(s) indicating areas with concentrated prey resources (e.g., prairie dog towns, leks, ungulate wintering/parturition areas, etc.) in relation to proposed final turbine layout. Map rivers, lakes and reservoirs where bald eagles forage on fish and waterfowl, and map areas of open water available during winter, if any.

3. Describe potential anthropogenic sources of eagle prey for the project area including cattle or sheep grazing operations, road kill carcasses on roads, gut piles from hunting seasons, etc.

D. Eagle Risk Categorization for Stage 2

1. Describe how the eagle use, eagle nest, and eagle prey base assessment data were used to assess the eagle risk category. Use ECPG criteria on pgs. 25-26.

VI. Avoidance and Minimization of Risks in Project Siting (ECPG Stage 4)

A. Project Planning/Design Phase: site selection

1. Were alternative sites considered for development and was there consideration for reducing eagle/raptor/migratory bird risk in this process?

2. Were wind turbines removed and/or relocated from the initial project design, and if so, why?

3. Were any project roads, power lines, or buildings removed or relocated from the initial project design, and if so, why?

4. Document all key adjustments made to the initial project design, why they were made, what information was used to make changes, and any subsequent draft designs. Thorough descriptions should accompany any maps.

5. Were the USFWS Region 6 Recommendations for Avoidance and Minimization of Impacts to Golden Eagles at Wind Energy Facilities (April, 2013) followed in the project design phase? If not, provide a rationale.

VII. Predicting Eagle Fatalities (ECPG Stage 3)

A. Describe the methods and assumptions used. If these differ from Appendix D in the ECPG, describe the differences and provide a rationale.

1. Provide all input data used.

2. Present results from Eagle Modeling by Eagle Species

a. USFWS eagle fatality model

b. Outcomes from other models (if any)

B. Other Eagle Risk Assessment

1. Disturbance/Displacement Assessment

2. Assessment of Project-level Take: Complete this analysis consistent with ECPG Appendix F.

3. Local Area Population (LAP) Analysis

4. Cumulative Impacts Analysis – Comprehensive assessment of known factors impacting eagles, eagle habitat, prey base, etc., within the sphere of the LAP. This includes known eagle mortality from all other factors within the LAP, including existing wind facilities, power lines, poisoning, etc. Proponent will need to work jointly with USFWS on this section. Refer to ECPG Appendix F.

C. Eagle Risk Categorization for Stage 3. Use ECPG criteria on pp. 25-26.

VIII. Additional Avoidance and Minimization of Risks, ACP's, and Compensatory Mitigation (ECPG Stage 4)

A. Construction Phase Best Management Practices (all that apply from USFWS 2012, WEG Chapter 7)

**B.** Operational Phase

1. Best Management Practices (Including, at a minimum, those from USFWS 2012, WEG Chapter 7 which apply to eagles)

2. Experimental Advanced Conservation Practices, per ECPG Appendix E.

#### C. Compensatory Mitigation

1. Calculations of needed mitigation for your project using Appendix G of ECPG; thoroughly describe calculations that were used to generate results.

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2. Present a plan for the implementation of compensatory mitigation, including the type of compensatory mitigation that will be implemented. How was the type of compensatory mitigation being proposed actually selected? The plan should demonstrate the project developer's/operator's ability to complete it. Where will the compensatory mitigation be completed relative to relevant Local Area Population, Bird Conservation Regions (ECPG pg. 38), Eagle Management Units (ECPG pg. 39), etc.? What is the expected life of the compensatory mitigation action(s)?

3. Effectiveness monitoring: describe monitoring approach, duration, etc.

4. Adaptive Management, including commitments to change operations in response to monitoring outcomes as applicable. (See ECPG pg. 28 and ECPG Appendix A)

- IX. Calibration and Updating of the Fatality Prediction and Continued Risk Assessment (ECPG Stage 5)
  - A. Post-construction monitoring (eagle/avian surveys)
    - Describe the methodology/protocols to be used for carcass surveys for eagles/migratory birds (including searcher efficiency trials and carcass persistence trials). These will be developed jointly by the developer/operator and the USFWS per ECPG Appendix H.

Note: General considerations for design of the fatality monitoring program include:

- Kunz et al. (2007). Assessing impacts of wind-energy development on nocturnally active birds and bats: a guidance document. Journal of Wildlife Management 71: 2449-2486.
- Strickland et al. (2011). Studying Wind Energy/Wildlife Interactions: a Guidance Document. Prepared for the National Wind Coordinating Collaborative, Washington, D.C., USA, and relevant points from USFWS WEG pp. 35-37.

2. Surveys of eagle/raptor nests (occupancy, productivity, and success)

 Describe methods to be used, number of years surveys will be conducted, area to be surveyed, etc.

3. Disturbance Monitoring: Document any post-construction monitoring of eagle nesting territories and communal roost sites to evaluate disturbance effects. (See ECPG Appendix H, pg. 98). Provide details of the protocols and methods to be used for such monitoring.

4. Describe eagle use/migratory bird surveys that will be conducted post-construction. Provide methodology, timing and frequency of survey effort, location of survey points,

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percent of area that will be surveyed, number of surveys, etc. If such surveys will not be conducted, provide a rationale.

5. If there will be an incidental (i.e., informal) wildlife monitoring system established, describe the system, including personnel that will implement it, data forms to be used, how the reporting process will work, and how conflicts with informal monitoring and formal carcass surveys will be avoided.

#### X. Permits

1.1.1.1.

- A. For USFWS programmatic eagle take permits, conditions will be provided by USFWS.
- B. Other USFWS Permit Types: Other Migratory Bird Treaty Act (MBTA) permits may be required for project management. These include, but are not limited to, nest relocation, temporary possession, depredation, salvage/disposal, and scientific collection.
  - Identify MBTA permit types the project is likely to apply for. Also describe the process which will be used to obtain and comply with all necessary MBTA take permits for the project.
  - 2. Other State or Tribal wildlife permits

XI. References/Literature Cited

#### What not to include in your ECP:

-Literature review or summary of effects of wind turbines on eagles/migratory birds/wildlife

-Comparisons of predicted eagle take at your project with other on-line wind energy facilities

Exhibit A20-1



## SOUTH DAKOTA DEPARTMENT OF GAME, FISH AND PARKS

523 EAST CAPITOL AVENUE | PIERRE, SD 57501

29 December 2016

Melissa Schmidt 7650 Edinborough Way, Ste 725 Edina, MN 55435

Dear Melissa,

This letter is in response to your request for information and formal comment on the proposed Cattle Ridge wind farm in Grant County, South Dakota. We began consultation with Geronimo Energy on this proposed wind farm in February 2016. This has included email correspondence, conference calls and meetings, the latter two of which have included the U. S. Fish and Wildlife Service ([USFWS], Ecological Services and Refuges divisions). Our agency has shared data on species monitored by our Natural Heritage Program, grouse lek locations and a list of breeding birds from the most recent Breeding Bird Atlas project. I've had the opportunity to review results from biological surveys conducted or contracted by WEST, Inc. The following provides information on habitats and associated wildlife that may be affected by the proposed project and recommendations to avoid or lessen these impacts. Many of the concerns and recommendations provided below have already been shared with Geronimo, WEST, Inc. and the USFWS. I anticipate and appreciate continued coordination.

### **Native Prairie**

The proposed project is located within the Prairie Coteau ecoregion. This ecoregion contains some of the last remaining areas of untilled native tallgrass prairie in the state and has high conservation value for grassland wildlife. The presence of rare or endemic prairie-obligate species illustrates the value of these remaining tracts.

The Dakota Skipper, Poweshiek Skipperling, and Regal Fritillary are prairie-obligate butterflies that are or have been known to occur in and around the proposed project area. Each of these species requires specific native prairie plants to complete different portions of their life cycle. As you are aware, the Dakota Skipper is threatened and the Poweshiek Skipperling is endangered under the federal Endangered Species Act (ESA). The Regal Fritillary is currently under review by the USFWS for listing under the ESA. Please ensure continued coordinate with the USFWS for guidance on surveys and avoidance.



There are a dozen bird species considered to be prairie endemics (Mengel 1970). These species are exclusive to areas that exhibit many or all of the characteristics of native prairie. A review of the preliminary avian point count data collected by WEST, Inc. documented the presence of three bird species endemic to the Great Plains: Chestnut-collared Longspur, Franklins Gull and Marbled Godwit.

In an effort to help conserve these last remaining tracts of native untilled prairie and associated wildlife, we strongly recommend placing turbines, roads and other infrastructure in areas currently tilled for crop production. Every effort should be made to avoid disturbing untilled, native prairie. The best publicly available information on the location of native prairie in eastern South Dakota can be found in Bauman et al. (2016).

### Grasslands

Grassland-obligate birds require grasslands to complete all or portions of their life cycle. A review of the preliminary avian point count data collected by WEST, Inc. documented the presence of 13 obligate grassland birds (as defined by Peterjohn and Sauer 1993): Bobolink, Chestnut-collared Longspur, Dickcissel, Grasshopper Sparrow, Horned Lark, Northern Harrier, Ring-necked Pheasant, Savannah Sparrow, Sedge Wren, Sharptailed Grouse, Upland Sandpiper and Western Meadowlark. In addition to information gleaned from your pre-construction avian surveys, we have information from our most recent Breeding Bird Atlas surveys. Survey block 2R0089 was located just to the west of the southwest corner of the project area. Five grassland-obligate species are confirmed (Bobolink), probable (Grasshopper Sparrow, Sharp-tailed Grouse and Upland Sandpiper) or possible (Sedge Wren) breeders. A complete list of confirmed, probable and possible breeding bird species from this block is attached as well as definitions of these breeding status codes. Long-term Breeding Bird Survey (U.S. Geological Survey) trends show that obligate grassland bird populations have experienced some of the most consistent and alarming declines of any other bird species guild. As a result, many of these species are of concern at the state (South Dakota Species of Greatest Conservation Need or monitored by the Natural Heritage Program), regional (joint ventures), or national (USFWS Birds of Conservation Concern) level.

Large, contiguous blocks of grassland, regardless of cropping history, quality, or current management also have high conservation value for grassland wildlife. The separation of wildlife habitat into smaller blocks (by roads or vertical structures) reduces its quality in that a species that requires large tracts of grassland may have lower survival or reproduction rates and/or decreased distribution or use of an area. Species of fragmentation concern documented in pre-construction surveys include Bobolink, Chestnut-collared Longspur, Grasshopper Sparrow, Greater Prairie-chicken, Northern Harrier, and Sharp-tailed Grouse. One recent study in the Dakotas has documented avoidance of turbines by some grassland bird species (Shaffer and Buhl 2015). Please note that the Chestnut-collared Longspur and Greater Prairie-chicken are Species of Greatest Conservation Need as identified in South Dakota's Wildlife Action Plan.

Spring aerial surveys were conducted by WEST, Inc. in 2016 that documented four grouse leks. Suitable nesting and brood rearing habitat are required to support grouse populations and these habitats are centered on the lek (traditional, communal breeding

areas). Two leks are in close proximity (<1 mile) to proposed turbine locations. I continue to recommend maintaining a 1-mile buffer no surface occupancy and associated construction timing restrictions within a 2-mile buffer as provided in our email correspondence dated 8 June 2016. I also recommend post-construction surveys to monitor for any decline in lek attendance over a 5 year period, conducting spring lek counts, one, three and five years post-construction. The results of these surveys should be shared with our agency and any needed mitigation be discussed when surveys are complete.

Avoid fragmenting grassland habitat by placing turbines and other infrastructure in areas currently tilled for agriculture. Maximize the use of existing roads and avoid new road construction as much as possible.

#### Woodlands

Wooded areas along the North Fork of the Yellowbank River, South Fork of the Whetstone River and other unnamed draws provide important habitat for migratory birds and bats and winter cover for resident wildlife especially in areas where natural woody vegetation is limited. Specifically, I have concerns that migratory tree-roosting bat species (Eastern red bat, hoary bat and silver-haired bat), which are the species most commonly killed by wind farms, may be at risk.

Data from one year of bat activity monitoring conducted by WEST, Inc. is currently being reviewed and summarized. I respectfully request a copy of this report when available for agency distribution. Surveys to determine bat use should be conducted two years pre-construction (April through October). This is a minimum amount of effort to detect annual variation in bat activity. This time frame also covers both spring and fall migrations. Data gathered at other locations in South Dakota have shown extreme variation between years. Ideally, bat detectors should be placed throughout the proposed project area. If complete coverage of the proposed area is not feasible, target sampling in areas of predicted bat habitat such as trees, water and human structures. Note that the absence of these features does not necessarily preclude use of the area by bats. At a minimum, ensure that a pair of acoustic detectors is placed on all existing meteorological towers, one within the rotor-swept area and another near ground level or at an intermediate height along the tower.

Information on migratory bat activity can be gleaned from the presence/probable absence surveys conducted by WEST, Inc. for the Northern Long-eared bat. Given the timing and location of the surveys, migratory bat activity was likely recorded especially given that all three migratory tree-roosting bat species were detected at comparatively high activity levels. The number of calls recorded at sites #5 and #10 (along the North Fork of the Yellowbank River) strongly suggests that avoiding turbine placement near this river is prudent. Migratory, tree-roosting bat species were also frequently recorded at sites #1 and #7 and efforts should be made to avoid placement of turbines in these areas, too.

We encourage the use of proactive mitigation measures such as increasing blade cut-in speeds or turbine shut-downs during low wind speeds to help reduce bat strikes (Arnett

et al. 2013). Bat mortality monitoring should be conducted for two years postconstruction and any additional mitigation measures taken in accordance with the results of those studies. This monitoring should estimate searcher efficiency and scavenging rates. Ideally, information on bat activity and weather should also be collected to detect possible relationships between recorded bat activity, mortality and weather. Incidental mortalities should be documented and this information summarized and reported annually to SD Game, Fish and Parks and the USFWS. A Bird and Bat Conservation Strategy is being drafted that contains post-construction monitoring plans and measures to avoid or mitigate bat mortality. Please share a copy of this plan for agency review. Please note that post-construction monitoring activities may require a collection permit from our agency. More information can be found at https://gfp.sd.gov/licenses/other-permits/scientific-collectors.aspx

### Wetlands

Wetlands that are scattered throughout the proposed project area provide important habitat for wildlife and serve important ecological functions. Avoid placing turbines and powerlines near wetlands and give special attention to those wetlands that are located within larger grassland areas. The resulting grassland-wetland matrix has high conservation value as it is used for a diverse number of wildlife species throughout the year.

### Species of Concern

Our agency and project proponents had recently become aware of a nesting Bald Eagle approximately 2 miles away from the project boundary. I support plans to document adult and juvenile behavior to better asses risk to this breeding pair and their fledglings. Once this information is gathered, please consult with both our agency and the USFWS to determine the best ways to avoid impacting this nesting pair.

The Whooping Crane is protected as endangered under state and federal laws. There is the possibility that this species may be found in or near the proposed project area during spring or fall migration. South Dakota codified law 34A-8-8 has very limited authorized take of threatened and endangered species. For more information, please visit <a href="https://gfp.sd.gov/licenses/other-permits/endangered-species-permit.aspx">https://gfp.sd.gov/licenses/other-permits/endangered-species-permit.aspx</a>.

A review of the preliminary avian point count data and report of surveys for the Northern long-eared bat show the presence of several special status species. Species of Greatest Conservation Need (SGCN) are those that are threatened or endangered, have an important portion of their remaining range in South Dakota or have characteristics that make them vulnerable. American White Pelican, Chestnut-collared Longspur, Marbled Godwit, Bald Eagle, silver-haired bat and Northern long-eared bat are SGCN detected in the project area. These species are also monitored by the SD Natural Heritage Program and are considered species at-risk due to rarity, lack of information, or range extent. In addition, Cooper 's hawk and Broad-winged Hawk are monitored by the Heritage Program and have been detected at the Cattle Ridge site. Siting Guidelines for Wind Power Projects in South Dakota addresses many of the concerns involved with siting wind power projects in South Dakota and may be found on the web (http://www.sdgfp.info/Wildlife/Diversity/windpower.htm).

Our agency appreciates the opportunity to provide comments and I look forward to continued coordination.

Regards,

Sillsa Kemperna

Silka Kempema Wildlife Biologist

- Arnett, E. B., G. D. Johnson, W. P. Erickson, and C. D. Hein. 2013. A synthesis of operational mitigation studies to reduce bat fatalities at wind energy facilities in North America. A report submitted to the National Renewable Energy Laboratory. Bat Conservation International. Austin, Texas, USA.
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# SD Breeding Bird Atlas 2, Block 2R0089, Codington and Grant counties

Status	Species	Year
Confirmed	American Coot	2008
	Barn Swallow	2008
	Black Tern	2008
	Bobolink	2008
	Canada Goose	2009
	Common Grackle	2008
	European Starling	2008
	Gadwall	2008
	Killdeer	2008
	Mallard	2008
	Mourning Dove	2008
	Northern Shoveler	2008
	Orchard Oriole	2008
	Pied-billed Grebe	2008
	Red-winged Blackbird	2008
	Western Kingbird	2008
	Yellow-headed Blackbird	2008
Possible	American Avocet	2011
	American Bittern	2008
	American Goldfinch	2008
	American Robin	2008
	Bank Swallow	2008
	Black-crowned Night-heron	2008
	Chipping Sparrow	2008
	Cliff Swallow	2008
	Common Nighthawk	2008
	Downy Woodpecker	2009
	Grasshopper Sparrow	2008
	Gray Catbird	2008
	Gray Partridge	2008
	Horned Lark	2008
	Northern Flicker (all)	2009
	Ring-necked Duck	2008
	Ring-necked Pheasant	2008
	Savannah Sparrow	2008
	Sharp-tailed Grouse	2008
	Song Sparrow	2008
	Sora	2008
	Tree Swallow	2008
	Upland Sandpiper	2008
	Vesper Sparrow	2008

# SD Breeding Bird Atlas 2, Block 2R0089, Codington and Grant counties, cont.

Status	Species	Year
Probable	Black-billed Cuckoo	2008
	Blue-winged Teal	2008
	Brown Thrasher	2008
	Brown-headed Cowbird	2008
	Clay-colored Sparrow	2008
	Common Yellowthroat	2008
	Eastern Kingbird	2008
	House Sparrow	2008
	Marbled Godwit	2008
	Marsh Wren	2008
	Northern Pintail	2008
	Red-tailed Hawk	2008
	Sedge Wren	2008
	Swamp Sparrow	2008
	Western Meadowlark	2008
	Willow Flycatcher	2008
	Wilson's Snipe	2008
	Yellow Warbler	2008

## Appendix 2

## **BREEDING STATUS & BEHAVIOR CODES**

Status Code	Behavior Code	Description				
Observed (O)	o	Species (male or female) observed during its breeding season (within safe dates), but no evidence of breeding. Not in suitable nesting habitat - examples are vultures, raptors, colonial nesters not at nesting colony.				
Possible	?	Species (male or female) observed in suitable habitat during its breeding season.				
(, 0)	X	Singing male present in suitable habitat during its breeding season.				
	м	Multiple males of a single species singing within a block in a single visit during their breeding season.				
Probable (PR)	Р	Pair observed in suitable nesting habitat during its breeding season.				
	S	<b>Song</b> at same location on at least 2 occasions 7 or more days apart.				
	т	<b>Territory</b> defense observed (chasing of individuals of same species) - presumed permanent territory.				
	С	Courtship behavior, or copulation.				
	N	Visiting potential <b>nest</b> -site.				
	A	Agitated behavior or anxiety calls from adult.				
В		Nest <b>building</b> by wrens or eagles; hole excavation by woodpeckers.				
	CN	Carrying nesting materials (sticks, grass, hair, etc.).				
Confirmed	NB	Nest building by all species except eagles, wrens, woodpeckers.				
(CO)	PE	Physiological evidence based on bird in hand: highly vascularized, edematous incubation/brood patch, or egg in oviduct.				
	DD	Distraction display or injury feigning.				
	UN	Used nests or eggshells found. CAUTION: these must be carefully identified to be accepted.				
	PY	<b>Precocial young.</b> Flightless chicks of precocial species restricted to the natal area by limited mobility or dependence on adult.				
	FL	Recently <b>fledged young</b> incapable of sustained flight, restricted to natal area by limited mobility or dependence on adult.				
	ON	<b>Occupied nest</b> : adults entering or leaving a nest site in circumstances indicating an occupied nest. Use this code for nests too high or enclosed to view the contents.				
CF		Carrying food: adult carrying food for the chicks.				
	FY	Adult feeding recently fledged young.				
FS		Adult carrying fecal sac.				
	NE	Nest with eggs**				
	NY	Nest with young seen or heard**				

\*\* Presence of cowbird eggs or chicks is confirmation of both cowbird and host species.

# Appendix D

# Permits and Approvals

#### **APPENDIX D - CATTLE RIDGE PERMITTING MATRIX**

Agency	Permit/Approval	Requirement		
FEDERAL				
Environmental Protection Agency (Region 8) (EPA) in	Spill Prevention Control and Countermeasure (SPCC) Plan	Needed if turbine commissioning or construction activities will require oil storage in excess of 1320 gallons.		
coordination with the South Dakota DOH	Phase I Environmental Site Assessment	Environmental Response, Compensation, and Liability Act (CERCLA or Superfund), which governs liability for contaminated		
Federal Aviation Administration	Form 7460-1 Notice of Proposed Construction or Alteration (Determination of No Hazard)	Determination of No Hazard to Air Navigation needed for each structure over 200 feet tall via form 7460-1.		
	Notice of Actual Construction or Alteration (Form 7460-2)	Notify FAA of construction via Form 4760-2. Submit within five days of greatest height installation.		
Federal Communications Commission	Non-Federally Licensed Microwave Study	Regulations regarding interference with "over-the-air reception devices" ("OTARD")		
	NTIA Comm. Study	Regulations regarding interference with "over-the-air		
Federal Emergency Management Agency	Flood Plain Designations	Determines areas within 100 year flood plain for financing		
	Exempt Wholesale Generator Cert. (EWG)	Self Certification		
Federal Energy Regulatory Commission	Qualifying Facilities (QF) Certification	Self Certification		
	Market-Based Rate Authorization	Determine if MBA is needed		
National Historic Preservation Act	Class I Literature Review / Class II Architectural Survey/ Class III Cultural Field Survey	Application for Facility Permit		
	Wetland Delineation Approvals	Wetland Delineation need to determine extent of USACE jurisdiction, quantify impacts, or document avoidance		
U.S. Army Corps of Engineers	Jurisdictional Determination	Determine eligibility for a Letter of No Jurisdiction based on limited wetland impacts.		
	Federal Clean Water Act Section 404 Permit(s)	Project may either require a USACE Nation Wide, No Permit, or an individual Permit depending on the amount and type of wetland impact proposed.		

	Section 7 Consultation	Endangered species inside the project.
	Review for Threatened and Endangered Species	Federal endangered species review is needed to confirm that the Project will not adversely affect rare species and that no "incidental take" permit is needed.
	Wetland/Grassland Easement Review and Special Use Permit	Required if FWS Easements found in title search
U.S. Fish and Wildlife Service	Eagle Take Permit	To be determined following field surveys.
	Federal Section 106 Review	Section 106 of the National Historic Preservation Act (NHPA) may be invoked by a Federal Agency if the Project requires federal land, funding, or permits.
	Tribal Review	Review by Native American tribes due to federal action.
	EA/EIS and Record of Decision	NEPA
STATE		
	Utility Occupancy Application and Permit	Placement of utilities over, under and along Trunk Highway ROW
South Dakota Department of Transportation (SDDOT)	Oversize/Overweight Permit for State Highways	Delivery of oversize project components
	Highway Access Permit	For access roads abuting state roads
	Section 401 Water Quality Certification	Individual Section 401 Water Quality Certification or Waiver is required under the Federal Clean Water Act (CWA) for projects that require an Individual Section 404 permit from the USACE to ensure that authorized activities do not violate state water quality
South Dakota Department of Environment and Natural Resources (DENR)	National Pollutant Discharge Elimination System Permit (NPDES) – General Storm water Permit for Construction Activity	
	Temporary water use permit for construction activities	Required for the use of public water for construction, testing, or drilling purposes; issuance of a temporary permit is not a grant of water right

	Water Rights Permit for Nonirrigation Use	Required if water will be appropriated for O&M facility
	Temporary Discharge Permit	Excavation Dewatering of Storm, Ground and Surface Water. NOI needed 30 days before start of dewatering.
South Dakota Aeronautics Commission	Aeronautical Hazard Permit/Consultation	Permit lighting plan determined with FAA coordination
South Dakota State Historic Preservation Office	Cultural and Historic Resources Review and Review of State and National Register of Historic Sites and Archaeological Survey	Consultation with SHPO is recommended. Should Section 106 of the National Historic Preservation Act (NHPA) be triggered, consultation will be mandatory.
SDCL 49-32-3.1	Consultation	Telecommunication companies review the preliminary electrical layout and may suggest revisions to minimize impact to their systems
South Dakota Public Utilities Commission	Application for Facility Permit Notification to Landowners and Publication of Notice of Proposed Facility (NOTE - Transmission and Wind will be seprate permits)	SDCL 49-41B-5.2 - Notification by certified mail to owner of record of any land located within one- flaf mile of the Project. Notice of the Project must also be published in the newspaper of all counties the project is located at least once a week for at least two consecutive weeks.
	Ten-Year Plan	SDCL 49-41B-3. Every Utility that owns, operates, or plans within the next ten years to own, operate or start construction shall file a ten-year plan. The plan must be updated every second year after its submission.
LOCAL		
	Conditional Use Permit	Grant County Ordinance
Grant County, South Dakota	Building Permit	Grant County Ordinance
	Haul Road Agreements	Grant County Ordinance
Grant County Townships, South Dakota	Haul Road Agreements	Required if using township roads during construction

## Appendix E

### Consent for Utility Company to Cross a Public Road or Section Road Approved Application

Permit No. ROW2017-01

### GRANT COUNTY CONSENT FOR UTILITY COMPANY TO CROSS A PUBLIC ROAD OR SECTION ROAD

The undersigned Owner(s) of the Cattle Ridge Wind Farm, identified as, and whose addresses are

### Cattle Ridge Wind Farm, LLC of 7650 Edinborough Way Suite 725, Edina, MN 55435 (Company) (Address)

Hereinafter called the "Applicant", is hereby granted permission to construct, operate, maintain and reconstruct the following identified transmission line facilities on, over, across, or adjacent to county right-of-way, as shown on the exhibits attached hereto and made a part hereof (attach map or exhibits):

Crossing ID	Township Name	Township	Range	Section	Lat	Long
**CAT-4	Madison	119N	49W	5	45.1355	-96.7218
**CAT-6	Madison	119N	49W	3	45.13575	-96.6809
CAT-15	Vernon West	119N	48W	10	45.1361	-96.5589
CAT-16	Vernon West	119N	48W	8	45.13602	-96.6
CAT-17	Stockholm	119N	50W	12	45.13489	-96.7619
CAT-18	Stockholm	119N	50W	10	45.13578	-96.8116
CAT-19	Madison	119N	49W	9	45.13555	-96.7116
CAT-20	Madison	119N	49W	12	45.13587	-96.6484
CAT-21	Madison	119N	49W	1	45.13588	-96.643
CAT-22	Vernon West	119N	48W	7	45.13593	-96.6359
CAT-23	Vernon West	119N	48W	11	45.13633	-96.5423
CAT-24	Vernon West	119N	48W	12	45.13635	-96.5374
CAT-25	Madison	119N	49W	2	45.1358902	-96.67307756

\* Applicant proposes to span approximately ½ mile along between parcels 10.49.02.3100 and 10.49.11.2000. Transmission structures will be placed on signed easements and will overhang into the road right-of-way and County Road 26 along parcels unsigned parcel 10.49.02.3100, 10.49.11.2000 and 10.49.11.1000. Illustrations of the proposed design are attached to this application.

\*\*Applicant will cross the right-of-way with the above ground transmission lines using the right-of-way of two parcels with private easements and two parcels without private easements. Overhead facilities on parcels without a private easement will be within the public right-of-way. Preliminary illustrations are attached to this application.

Typical design along the transmission corridor, with the exception of CAT-25, places structures on the edge of private easements and will result in above ground facilities overhanging the road right-of-way. Refer to the typical alignment along county road illustrations attached to this application.

narman

INSTALLATION AND MAINTENANCE: Installation and maintenance of said facilities on county right-ofway shall be subject to the following terms and conditions:

Permit No. ROW 2017-01

- Construction, operation, maintenance, reconstruction, or removal of said facilities within the county right-of-way shall be completed in a manner satisfactory to, and subject to supervision by, the County Road Superintendent and/or County Commissioners.
- Upon completion of construction, operation, maintenance, relocation, or removal of said facilities, Applicant and or their assignee, is responsible for restoration of any and all damages to County right-of-way as directed by the County Commissioners, or pay for restoration to be completed by the County or their designated representative.
- Grant County shall not be liable for damage to said facilities resulting from the use of, reconstruction or maintenance of the impacted right-of-way.
- 4. The Applicant and or their assignee shall hold Grant County harmless for injury to persons or damage to property resulting from the activities conducted by the Applicant in crossing any existing road or section line.

I, the undersigned, being an authorized agent of the "Applicant", described in the above, do hereby agree on behalf of the said Utility Company that all terms and conditions above will be complied with, and any assignment of this overhead transmission facility described above shall include an assignment of this liability to comply with the terms and conditions as stated herein.

NG	
Signature of MATHAN FRANSLEN	Signature of
Title UP Development	Title
Authorized Agent of	Authorized Agent of
Approved by Mike J. Mach	, the Chairman
this_17th_day of The Den of January Grant County Chairman	<u>F 20_17</u> .
Please return a copy of the signed permit to: Kerwin Schultz Grant County Hwy Supt 47789 151 <sup>st</sup> St. Milbank, SD 57252	
Meeting: Motion by Stengel and by Geronimo, Cattle Ridge Wind	seconded by Dummann to approve the Farms, as presented at the Decembe

request by Geronimo, Cattle Ridge Wind Farms, as presented at the December meeting to allow the wires in the ROW at location CAT 25 with the condition that Geronimo and Next Era continue to work on the crossing agreement and in 60 days report to the Commission stating an agreement has been reached or present to the Commission why the agreement had not been reached. Motion carried 5-0. Page 000091

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## Exhibit A20-1
























































Cattle Ridge Transmission Line

CAT-25 Crossing Illustrations





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## Cattle Ridge Transmission Line

## CAT-4 and CAT-6 ROW Crossing Illustrations





## Cattle Ridge Transmission Line

## Typical Alignment Along County Road Illustrations









