Appendix R

Agency Correspondence

Jesse Bermel
Business Developer

May 6, 2019

Deuel County Board of Commissioners
PO Box 616
408 4th Street West
Clear Lake, South Dakota 57226

RE: Proposed Tatanka Ridge Wind Project
Deuel County, South Dakota

Dear Commissioners,

Tatanka Ridge Wind, LLC (Tatanka Ridge), a wholly owned subsidiary of Avangrid Renewables, LLC, is proposing to construct the Tatanka Ridge Wind Project (Project) in Deuel County, South Dakota. The Project will have a nameplate capacity of up to 155 megawatts and will include construction of up to 56 turbines. Additional Project facilities include access roads, collection lines, communication systems and cabling, an operation and maintenance building, a permanent meteorological tower, and an electrical substation.

As a result, Tatanka Ridge is currently preparing to submit an application to the South Dakota Public Utilities Commission (PUC) for an Energy Facility Site Permit in accordance with Administrative Rules of South Dakota 20:10:22 and South Dakota Codified Law Ch. 49-41B. As you know, the Project also requires Wind Energy System and Special Exception permits from Deuel County. Subject to receipt of all necessary authorizations, construction of the Project will commence and be complete in 2020.

The Project is located entirely within Deuel County in the following sections and townships (refer to the attached figure):

Sections	Township
1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 15, 22, 31, 32, 34, 35	Blom (113N 49W)
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1	Grange (113N 50W)
24, 25, 26	Hidewood (114N 50W)
5, 6, 7, 12, 16, 17, 18, 20, 21, 22	Scandinavia (113N 48W)

Tatanka Ridge has conducted annual meetings with the Deuel County Board of Commissioners and Board of Adjustment to introduce you to the project and inform you of changes. Additionally, we've conducted outreach to the residents of Deuel County and participating landowners. Tatanka Ridge used the information gained through this outreach

Avangrid Renewables, LLC
1125 NW Couch Street, Portland, Oregon 97209
Telephone 319.626.2512
www.avangridrenewables.us, jbermel@avangrid.com

to optimize and refine Project design, identify and resolve issues, and address concerns brought forward by stakeholders prior to submitting applications to Deuel County.

On April 29, 2019, we submitted a Wind Energy System and Special Exception Permit application to Deuel County. In addition, Tatanka Ridge will include copies of all correspondence received regarding the proposed Project with the Energy Facility Site Permit application for the PUC's records. Therefore, we would greatly appreciate receiving any additional comments you may have, in writing, by June 6, 2019.

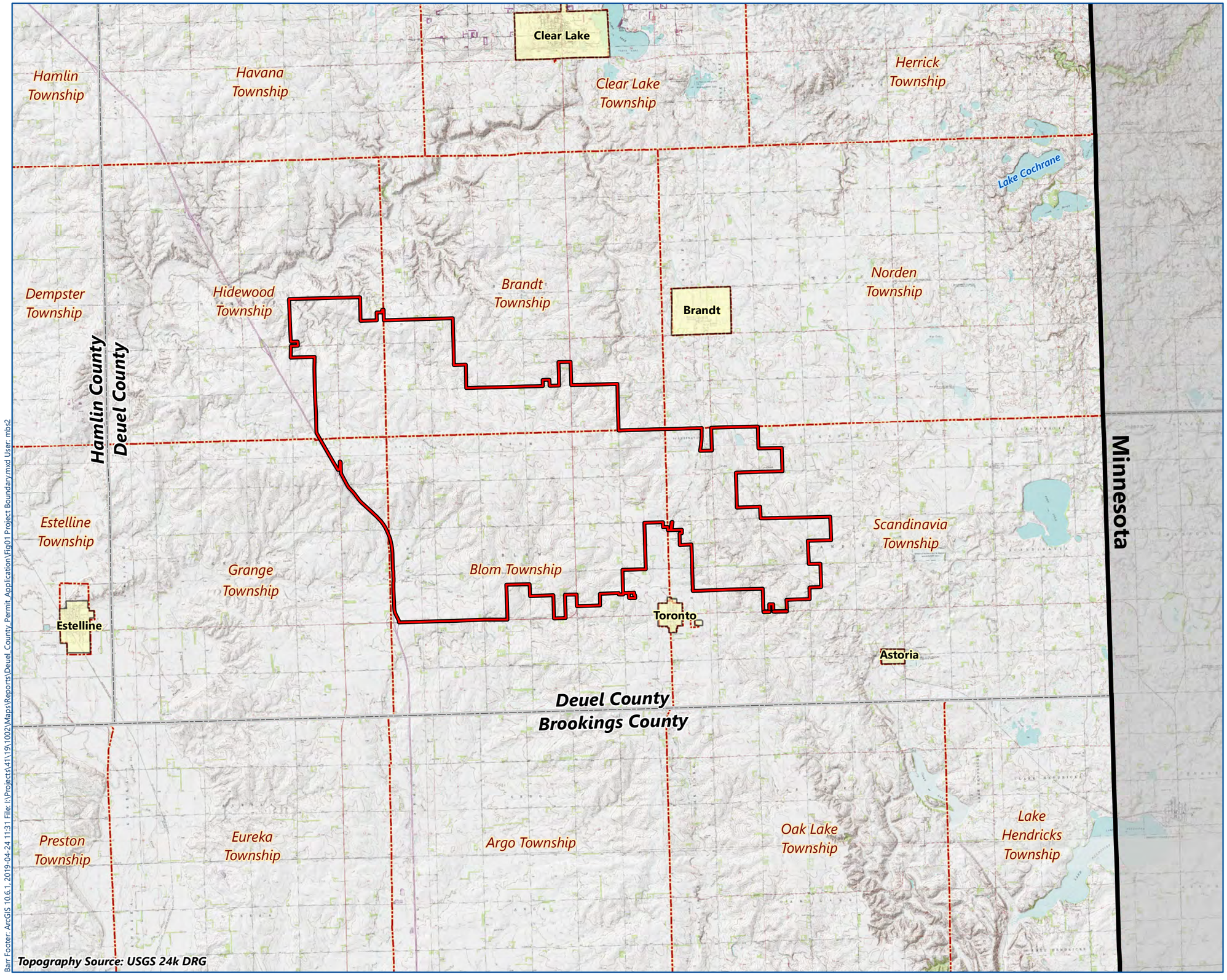
Please feel free to direct any questions or comments to me at jbermel@avangrid.com, or (319) 626-2512.

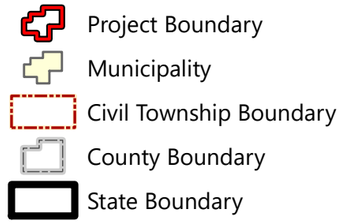
Yours Sincerely,

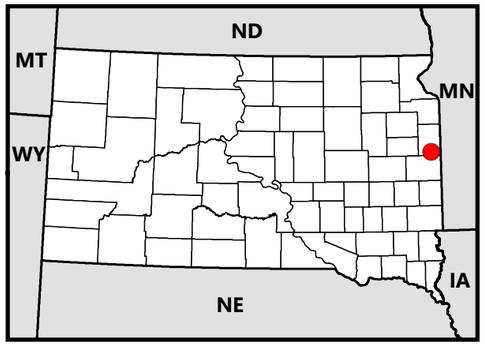
Jesse Bermel
Business Developer

Attachments: Project Location Map

cc: Rachael Shetka, Barr Engineering Co.
Mandy Bohnenblust, Avangrid Renewables
Brett Koenecke, May, Adam, Gerdes &Thompson, LLP







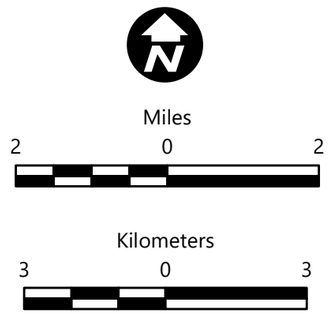


Figure 1

PROJECT BOUNDARY
Tatanka Ridge Wind Project
Tatanka Ridge Wind, LLC
Deuel County, South Dakota

Jesse Bermel
Business Developer

May 6, 2019

Paige Olson
Review and Compliance Coordinator
South Dakota State Historical Society
900 Governors Drive
Pierre, South Dakota 57501

RE: Proposed Tatanka Ridge Wind Project
Deuel County, South Dakota

Dear Ms. Olson,

Tatanka Ridge Wind, LLC (Tatanka Ridge), a wholly owned subsidiary of Avangrid Renewables, LLC, is proposing to construct the Tatanka Ridge Wind Project (Project) in Deuel County, South Dakota. The Project will have a nameplate capacity of up to 155 megawatts and will include construction of up to 56 turbines. Additional Project facilities will include access roads, collection lines, communication systems and cabling, an operation and maintenance building, a permanent meteorological tower, and an electrical substation. As a result, Tatanka Ridge is currently preparing to submit an application to the South Dakota Public Utilities Commission (PUC) for an Energy Facility Site Permit in accordance with Administrative Rules of South Dakota 20:10:22 and South Dakota Codified Law Ch. 49-41B. The Project also requires Wind Energy System and Special Exception Permits from Deuel County. Subject to receipt of all necessary authorizations, construction of the Project will commence and be completed in 2020.

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On September 5, 2018, Avangrid and HDR held a conference call with your office to provide an overview of the Project. During that call we discussed that no state or federal regulatory nexus applied to the Project and, as such, a sample (or due diligence) archaeological survey

Avangrid Renewables, LLC
1125 NW Couch Street, Portland, Oregon 97209
Telephone 319.626.2512
www.avangridrenewables.us, jbermel@avangrid.com

would be completed for the cultural resource effort. We provided comment that the sample archaeological survey was developed by coding the landscape that held Project facilities with high, medium, and low-potential designations. We also stated that the areas of high potential would be archaeologically surveyed and that the archaeological survey methods employed for the effort would follow the guidance provided by the SHPO for completing archaeological surveys in the state. Based on the information provided during the call, SHPO was comfortable with Avangrid's archaeological resource consideration approach.

On April 3, 2019, Avangrid and HDR held another conference call with you and Kate Nelson to provide a project update. As discussed in the call, the Project, based on its updated megawatt capacity, now falls under PUC permitting review. In accordance with this change we discussed the anticipated permitting needs as they relate to archaeological resource consideration, and what, in your opinion, would make for the smoothest approval process. During the conversation, we determined that our updated plan to consider archaeological resources in all areas of proposed disturbance was adequate, our plan to consider known architectural resources within one mile of the Project boundary was adequate, and that our proposed reporting schedule would meet the needs of SHPO, PUC, and the October hearing date. Hence, it is our understanding at this time that SHPO is comfortable with our approach to the archaeological survey, the schedule for completing the field work, and our plan for reporting.

The purpose of this letter is to inform your organization of the proposed Project and to seek your comments regarding any potential concerns or issues that may exist within the Project area. On April 29, 2019, we submitted a Wind Energy System and Special Exception Permit application to Deuel County. In addition, Tatanka Ridge will include copies of all correspondence received regarding the proposed Project with the Energy Facility Site Permit application for the PUC's records. Therefore, we would greatly appreciate receiving your comments, in writing, by June 6, 2019.

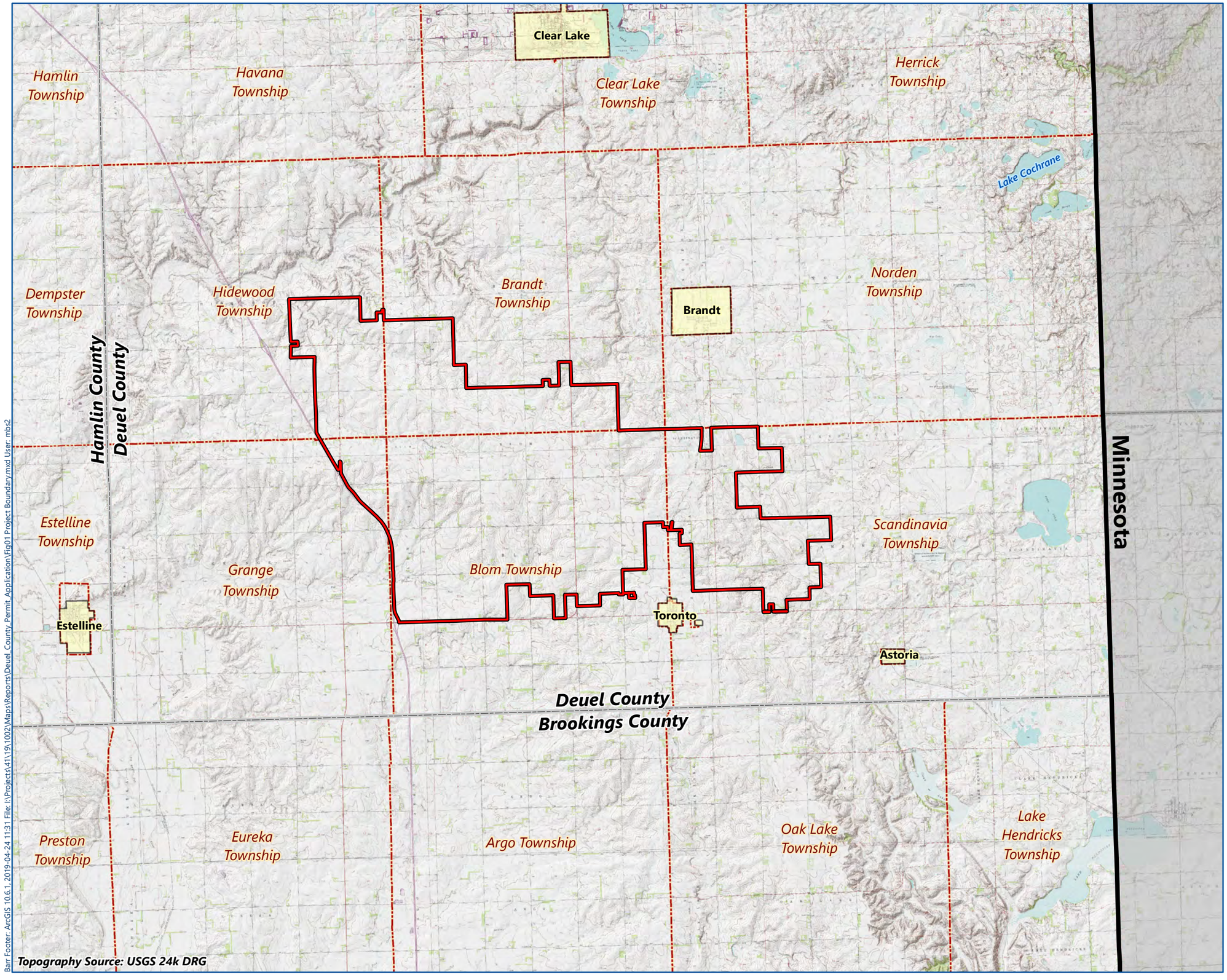
Please feel free to direct any questions or comments to me at jbermel@avangrid.com, or (319) 626-2512. We look forward to working with you on this Project and continuing an open dialogue.

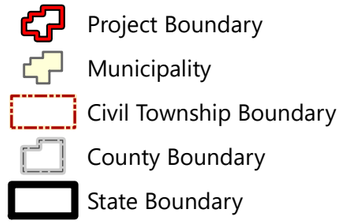
Yours Sincerely,

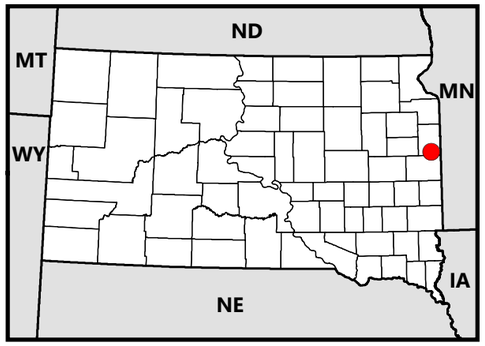
Jesse Bermel
Business Developer

Attachments: Project Location Map

cc: Rachael Shetka, Barr Engineering Co.
Mandy Bohnenblust, Avangrid Renewables
Brett Koenecke, May, Adam, Gerdes &Thompson, LLP







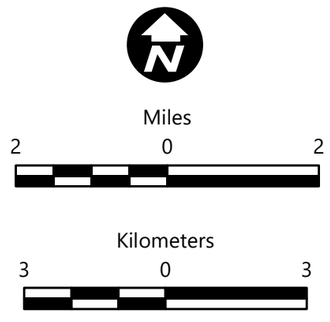


Figure 1

PROJECT BOUNDARY
Tatanka Ridge Wind Project
Tatanka Ridge Wind, LLC
Deuel County, South Dakota

Jesse Bermel
Business Developer

May 6, 2019

Steven M. Pirner, P.E.
Department Secretary
South Dakota Department of Environment & Natural Resources
Joe Foss Building
523 East Capitol Avenue
Pierre, South Dakota 57501

RE: Proposed Tatanka Ridge Wind Project
Deuel County, South Dakota

Dear Mr. Pirner,

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The purpose of this letter is to inform your organization of the proposed Project and to seek your comments regarding any potential concerns or issues that may exist within the Project

Avangrid Renewables, LLC
1125 NW Couch Street, Portland, Oregon 97209
Telephone 319.626.2512
www.avangridrenewables.us, jbermel@avangrid.com

area, as well as additional permits and approvals that may be necessary. On April 29, 2019, we submitted a Wind Energy System and Special Exception Permit application to Deuel County. In addition, Tatanka Ridge will include copies of all correspondence received regarding the proposed Project with the Energy Facility Site Permit application for the PUC's records. Therefore, we would greatly appreciate receiving your comments, in writing, by June 6, 2019.

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Yours Sincerely,

Jesse Bermel
Business Developer

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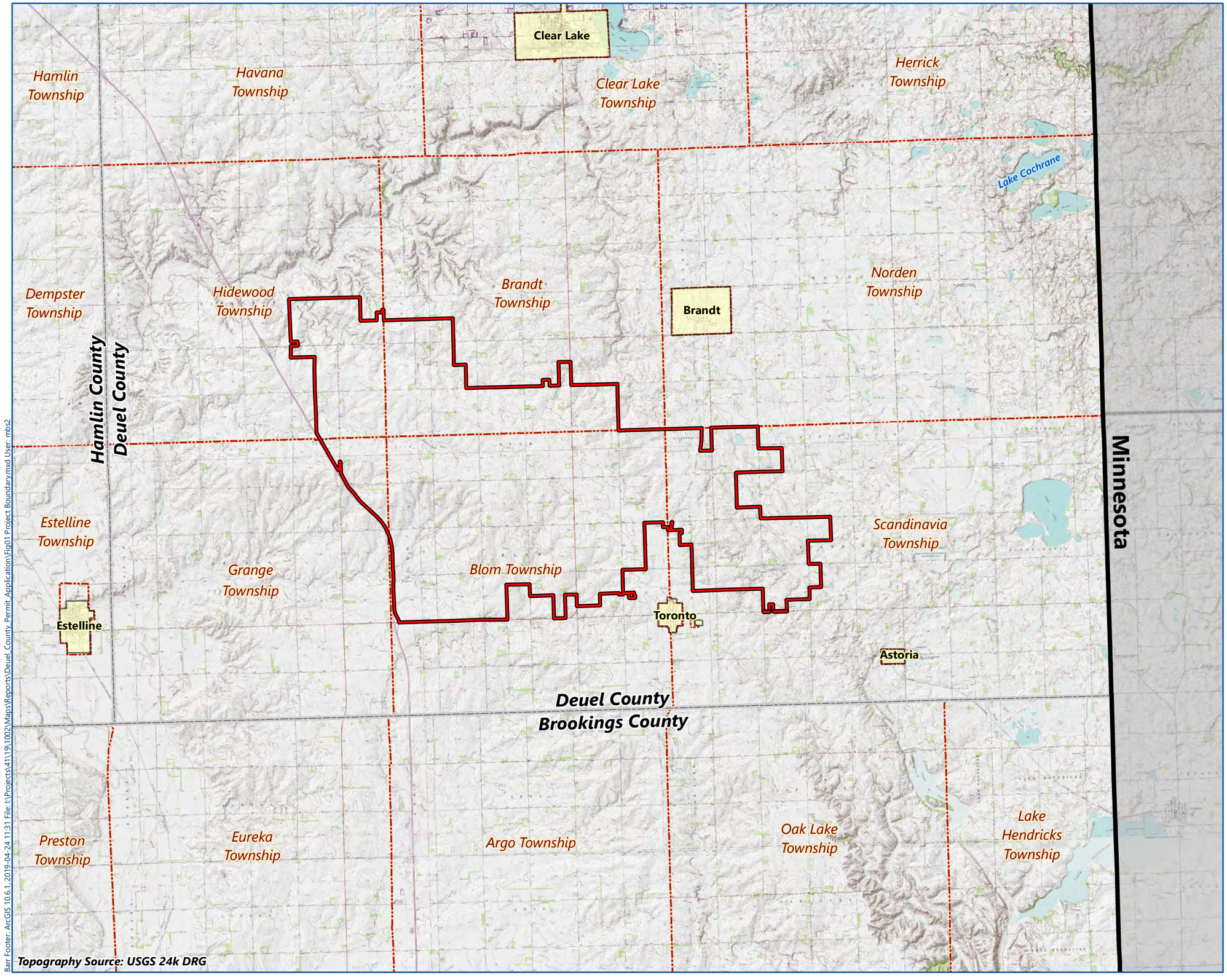

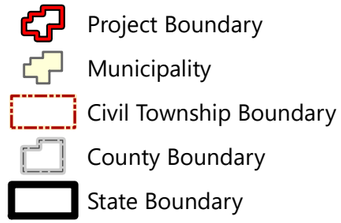

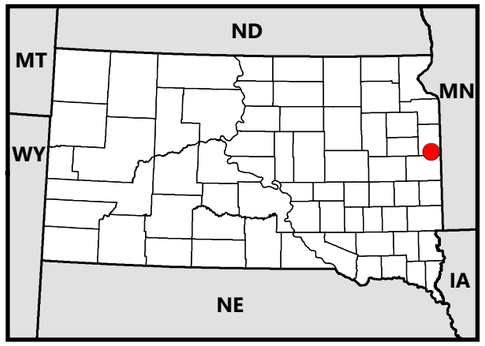

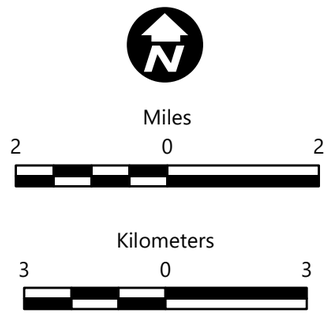

Figure 1

PROJECT BOUNDARY
Tatanka Ridge Wind Project
Tatanka Ridge Wind, LLC
Deuel County, South Dakota

DEPARTMENT of ENVIRONMENT and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

June 3, 2019

Jesse Bermel
Avangrid Renewables, LLC
1125 NW Couch Street
Portland, OR 97209

RE: Environmental Assessment – Request for Comments
Tatanka Ridge Wind Project, Deuel County, South Dakota

.

Dear Jesse:

The South Dakota Department of Environment and Natural Resources (DENR) Surface Water Quality Program has reviewed the proposed Tatanka Ridge Wind Project in Deuel County, South Dakota. Based on the information provided, DENR has the following comments:

1. At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site. Any construction activity that disturbs an area of one or more acres of land must have authorization under the General Permit for Storm Water Discharges Associated with Construction Activities. Contact the Department of Environment and Natural Resources for additional information or guidance at 1-800-SDSTORM (1-800-737-8676) or http://denr.sd.gov/des/sw/stormwater.aspx.

2. A Surface Water Discharge permit may be required if any construction dewatering should occur as a result of this project. Please contact this office for more information.

3. Impacts to tributaries, creeks, wetlands, and lakes should be avoided by this project. These waterbodies are considered waters of the state and are protected under Administrative Rules of South Dakota (ARSD) Chapter 74:51. Special construction measures may have to be taken to ensure that water quality standards are not violated.

   This project may be in close vicinity to North Deer Creek (Section 31, Township 113 North, Range 49 West) and Hidewood Creek (Section 6, Township 114N, Range 49 West). These waterbodies are classified by the South Dakota Surface Water Quality Standards and Uses Assigned to Streams for the following beneficial uses:

   (6) Warmwater marginal fish life propagation waters;
   (8) Limited contact recreation waters;
   (9) Fish and wildlife propagation, recreation, and stock watering waters; and
   (10) Irrigation waters.

   Because of these beneficial uses, special construction measures may have to be taken to ensure that the 30-day average total suspended solids criterion of 150 mg/L is not violated.

4. The discharge of pollutants from any source, including indiscriminate use of fill material, may not cause destruction or impairment except where authorized under Section 404 of the Federal Water Pollution Control Act. Please contact the United States Army Corps of Engineers for more information 605-224-8531.

If you have any questions concerning these comments, please contact me by email at Shannon.Minerich@state.sd.us. Thank you.

Sincerely,

Shannon Minerich
Environmental Scientist
Surface Water Quality Program

AVANGRID
RENEWABLES

Jesse Bermel
Business Developer

Waste Management Determination
Hazardous Waste/Solid Waste/Asbestos
It appears, based on the information provided, that this project will have little or no impact on the waste management in this area.
Approved By: James L. Winker
Date: May 10, 2019
South Dakota Department of Environment & Natural Resources
Phone: (605) 773-3153 Fax: (605) 773-6035

May 6, 2019

Steven M. Pirner, P.E.
Department Secretary
South Dakota Department of Environment & Natural Resources
Joe Foss Building
523 East Capitol Avenue
Pierre, South Dakota 57501

RE: Proposed Tatanka Ridge Wind Project
Deuel County, South Dakota

Dear Mr. Pirner,

Tatanka Ridge Wind, LLC (Tatanka Ridge), a wholly owned subsidiary of Avangrid Renewables, LLC, is proposing to construct the Tatanka Ridge Wind Project (Project) in Deuel County, South Dakota. The Project will have a nameplate capacity of up to 155 megawatts and will include construction of up to 56 turbines. Additional Project facilities will include access roads, collection lines, communication systems and cabling, an operation and maintenance building, a permanent meteorological tower, and an electrical substation. As a result, Tatanka Ridge is currently preparing to submit an application to the South Dakota Public Utilities Commission (PUC) for an Energy Facility Site Permit in accordance with Administrative Rules of South Dakota 20:10:22 and South Dakota Codified Law Ch. 49-41B. The Project also requires Wind Energy System and Special Exception Permits from Deuel County. Subject to receipt of all necessary authorizations, construction of the Project will commence and be completed in 2020.

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The purpose of this letter is to inform your organization of the proposed Project and to seek your comments regarding any potential concerns or issues that may exist within the Project

Avangrid Renewables, LLC
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Please feel free to direct any questions or comments to me at jbermel@avangrid.com, or (319) 626-2512.

Yours Sincerely,

Jesse Bermel
Business Developer

Attachments: Project Location Map

cc: Rachael Shetka, Barr Engineering Co.
Mandy Bohnenblust, Avangrid Renewables
Brett Koenecke, May, Adam, Gerdes &Thompson, LLP

AVANGRID
RENEWABLES

Jesse Bermel
Business Developer

AIR QUALITY DETERMINATION
It appears, based on the information, that the project will have little or no impact on the air quality in this area. This project is approved.
Approved By: _____
Date: 5-13-19
(605) 773-3151
South Dakota Department of Environment
And Natural Resources

May 6, 2019

Steven M. Pirner, P.E.
Department Secretary
South Dakota Department of Environment & Natural Resources
Joe Foss Building
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Jesse Bermel
Business Developer

May 6, 2019

Hilary Meyer
Environmental Review Coordinator
South Dakota Game, Fish, & Parks Department
523 East Capitol Avenue
Pierre, South Dakota 57501

RE: Proposed Tatanka Ridge Wind Project
Deuel County, South Dakota

Dear Ms. Meyer,

Tatanka Ridge Wind, LLC (Tatanka Ridge), a wholly owned subsidiary of Avangrid Renewables, LLC, is proposing to construct the Tatanka Ridge Wind Project (Project) in Deuel County, South Dakota. The Project will have a nameplate capacity of up to 155 megawatts and will include construction of up to 56 turbines. Additional Project facilities will include access roads, collection lines, communication systems and cabling, an operation and maintenance building, a permanent meteorological tower, and an electrical substation. As a result, Tatanka Ridge is currently preparing to submit an application to the South Dakota Public Utilities Commission (PUC) for an Energy Facility Site Permit in accordance with Administrative Rules of South Dakota 20:10:22 and South Dakota Codified Law Ch. 49-41B. The Project also requires Wind Energy System and Special Exception Permits from Deuel County. Subject to receipt of all necessary authorizations, construction of the Project will commence and be completed in 2020.

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On April 4, 2019, we held a conference call with you to provide an overview of the Project, including a discussion of state-listed species documented in Deuel County. The State of South Dakota maintains a list of endangered and threatened species, for which take is a

Avangrid Renewables, LLC
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Telephone 319.626.2512
www.avangridrenewables.us, jbermel@avangrid.com

violation of state law (South Dakota Codified Law 34A-8-9). Although the State of South Dakota has a process by which take of endangered and threatened species can be authorized (South Dakota Codified Law 34A-8-8), it is designed to authorize take associated with scientific, zoological, or educational purposes and does not include take associated with otherwise lawful activity (typically referred to as incidental take).

To obtain information on state-listed species potentially present within or near the Project, Tatanka Ridge reviewed the State of South Dakota's list of threatened, endangered, and candidate species documented within Deuel County, which was last updated in 2016 (SDGFP 2016), and requested a SDNHP database review of rare plants, animals, and ecosystems documented in or near the Project. The SDNHP's response to this request, dated May 30, 2018, is attached.

Three state-listed endangered or threatened species have been documented within Deuel County, including the northern river otter, banded killifish, and northern redbelly dace; however, none of these species has been documented within or near the Project. Because the northern river otter occurs within large, slow-moving waterbodies where large fish are present (Kiesnow and Dieter 2005), which are not present within the Project boundary, the potential for the Project to impact this species is considered minimal. The banded killifish and northern redbelly dace both occur within a variety of aquatic habitats, including streams, ponds, and lakes (Ohio Division of Wildlife 2018, Pasbrig 2014); however, the potential for this habitat to occur within the Project boundary is very low.

The purpose of this letter is to document that the Project will not impact state-listed species, to conclude consultation under SDLC 34A-8-9, and to seek your comments regarding any potential concerns or issues that may exist within the Project area as well as additional permits and approvals that may be necessary. On April 29, 2019, we submitted a Wind Energy System and Special Exception Permit application to Deuel County. In addition, Tatanka Ridge will include copies of all correspondence received regarding the proposed Project with the Energy Facility Site Permit application for the PUC's records. Therefore, we would greatly appreciate receiving your comments, in writing, by June 6, 2019.

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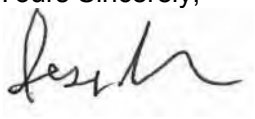
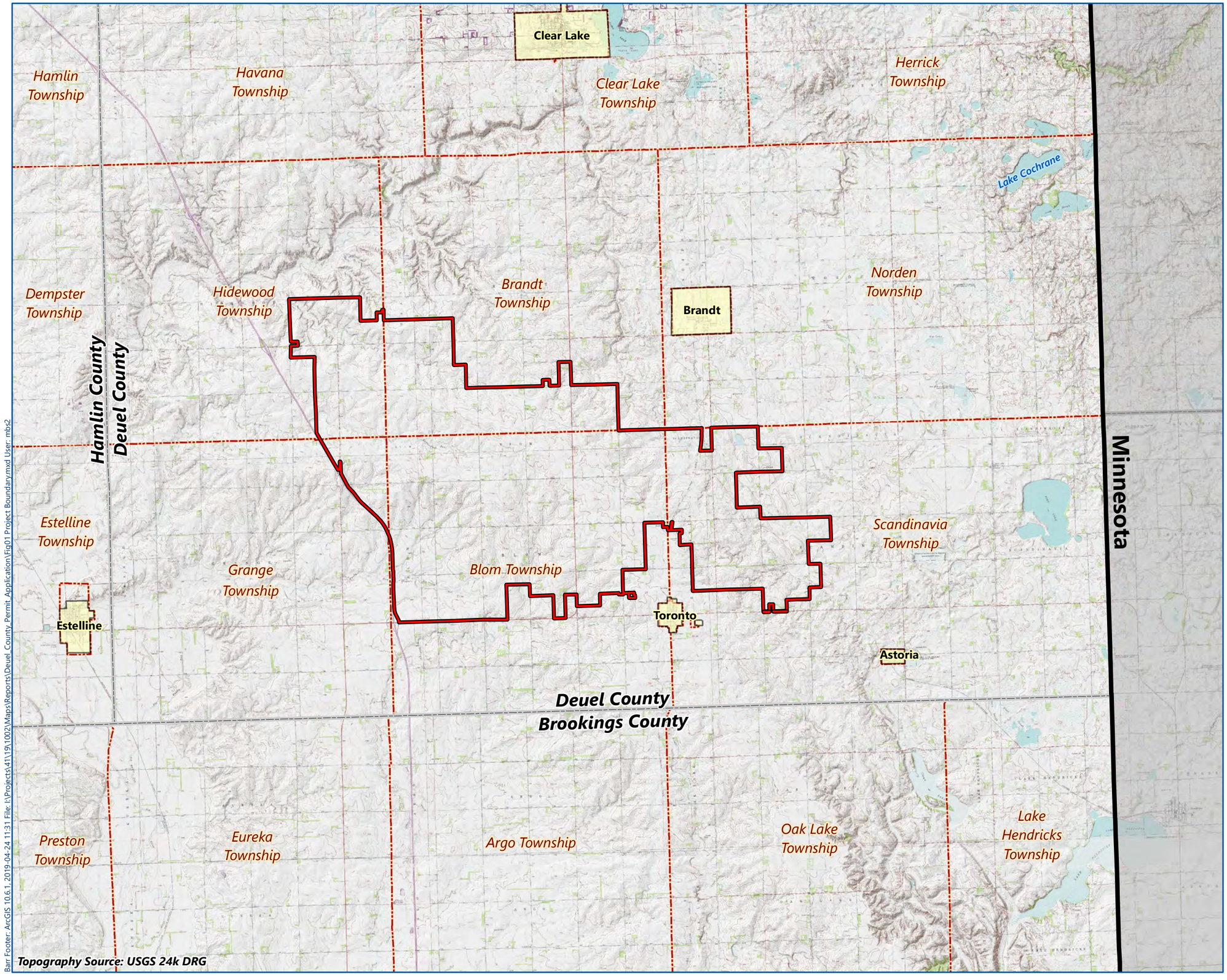
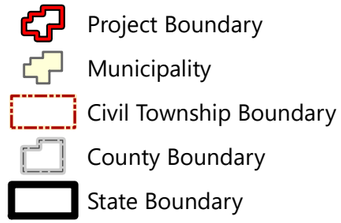


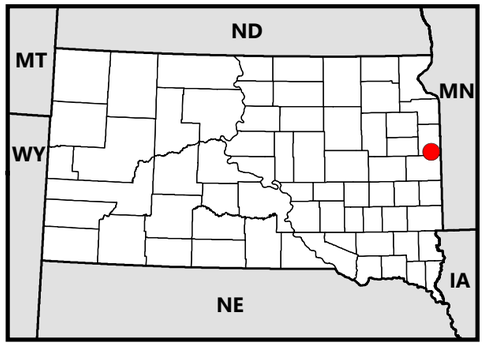
Jesse Bermel
Business Developer

Attachments: Project Location Map
SDNHP May 30, 2018 Response

cc: Rachael Shetka, Barr Engineering Co.
Mandy Bohnenblust, Avangrid Renewables
Brett Koenecke, May, Adam, Gerdes &Thompson, LLP







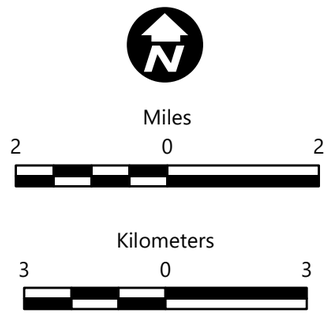


Figure 1

PROJECT BOUNDARY
Tatanka Ridge Wind Project
Tatanka Ridge Wind, LLC
Deuel County, South Dakota

Janelle Rieland <jrieland@west-inc.com>

RE: Natural Heritage Program Data Request

1 message

Heimerl, Casey <Casey.Heimerl@state.sd.us> Wed, May 30, 2018 at 11:27 AM
To: Janelle Rieland <jrieland@west-inc.com>

Hi Janelle,

Attached is a shapefile of records from the Natural Heritage Database that occurred within the project area you provided. Please note that many places in South Dakota have not been surveyed for rare or protected species and the absence of any additional records from the database does not preclude their presence in your project area.

Also attached is an invoice for the request and a description of the attribute fields in the shapefile.

If you have any questions please feel free to contact me.

~Casey

From: Janelle Rieland [mailto:jrieland@west-inc.com]
Sent: Wednesday, May 30, 2018 11:03 AM
To: Heimerl, Casey
Subject: Re: [EXT] Natural Heritage Program Data Request

Hi Casey,

Attached, please find the signed data use agreement. Thanks for your help!

On Wed, May 30, 2018 at 10:38 AM Heimerl, Casey <Casey.Heimerl@state.sd.us> wrote:

> Hi Janelle,
>
> There will be a couple records returned from this search. Could you please sign and email me back the a ached data use agreement?
>
> Thanks,
>
> ~Casey
>
> **From:** Janelle Rieland [mailto:jrieland@west-inc.com]
> **Sent:** Tuesday, May 29, 2018 9:41 AM
> **To:** Heimerl, Casey
> **Subject:** Re: [EXT] Natural Heritage Program Data Request
>
> Good morning Casey,
>
> Thank you for getting back to me! Attached, please find the shapefile of the project area of interest.
>
> Have a wonderful morning,
>
> On Tue, May 29, 2018 at 9:34 AM Heimerl, Casey <Casey.Heimerl@state.sd.us> wrote:
>
> > Hi Janelle,
> >
> > I received your request for SD Natural Heritage data. Please provide me with a map or a shapefile (preferably) for your requested search area. I also want to make sure you are aware of the fees associated with data requests. Fees include $30 per hour of staff me required and $30 per database search. Once I receive your project area I can provide you with a cost es mate before I proceed if necessary. If the search results in any records, I will also require you to sign a data use agreement.
> >
> > Thanks!
> >
> > ~Casey
> >
> > **Casey Heimerl** |*Wildlife Biologist*
> >
> > South Dakota Game, Fish and Parks
> >
> > 523 East Capitol Avenue | Pierre, SD 57501
> >
> > 605.773.4345 | Casey.Heimerl@state.sd.us
> >
> > **From:** info@gfp.sd.us [mailto:info@gfp.sd.us]
> > **Sent:** Thursday, May 24, 2018 4:41 PM
> > **To:** jrieland@west-inc.com

Cc: Heimerl, Casey
Subject: Natural Heritage Program Data Request

South Dakota - Game, Fish, and Parks

Natural Heritage Program Data Request

A new form was just submitted from the http://gfp.sd.gov/ website with the following information:

ID:	8
Agency/Org/Business:	Western EcoSystems Technology, Inc. (WEST)
Name:	Janelle Rieland
Address:	7575 Golden Valley Road, Suite 350 Golden Valley, MN 55427
Email:	jrieland@west-inc.com
Phone:	612-310-8012
Fax:	
URL:	
Element or Subject:	Looking to obtain records of known federally and state-listed species and other environmentally sensitive resources located in or near a proposed project site.
Type of Data:	Shape files (ideally), location, and species information.
Purpose of Request:	Preliminary site evaluation

--

Janelle Rieland

Project Manager

Western Ecosystems Technology, Inc.
Environmental & Statistical Consultants

7575 Golden Valley Road, Suite 350

Golden Valley, MN 55427

Office - 763-270-0953

Cell - 612-310-8012

jrieland@west-inc.com

www.west-inc.com

--

Janelle Rieland

Project Manager

Western Ecosystems Technology, Inc.
Environmental & Statistical Consultants

7575 Golden Valley Road, Suite 350

Golden Valley, MN 55427

Office - 763-270-0953

Cell - 612-310-8012

jrieland@west-inc.com

www.west-inc.com

Follow WEST: Facebook, Twitter, Linked In, Join our Mailing list

3 attachments

SDNHP-5-30-18.zip
3K

Invoice SDNHP-05-30-18-01.pdf
45K

EOdatafields.pdf
77K

Jesse Bermel
Business Developer

May 6, 2019

Scott Larson
Field Supervisor
Ecological Services
U.S. Fish & Wildlife Service
420 S. Garfield Avenue, Suite 400
Pierre, South Dakota 57501

RE: Proposed Tatanka Ridge Wind Project
Deuel County, South Dakota

Dear Mr. Larson,

Tatanka Ridge Wind, LLC (Tatanka Ridge), a wholly owned subsidiary of Avangrid Renewables, LLC, is proposing to construct the Tatanka Ridge Wind Project (Project) in Deuel County, South Dakota. The Project will have a nameplate capacity of up to 155 megawatts and will include construction of up to 56 turbines. Additional Project facilities will include access roads, collection and communication systems and cabling, an operation and maintenance building, a permanent meteorological tower, and an electrical substation. As a result, Tatanka Ridge is currently preparing to submit an application to the South Dakota Public Utilities Commission (PUC) for an Energy Facility Site Permit in accordance with Administrative Rules of South Dakota 20:10:22 and South Dakota Codified Law Ch. 49-41B. The Project also requires Wind Energy System and Special Exception Permits from Deuel County. Subject to receipt of all necessary authorizations, construction of the Project will commence and be completed in 2020.

The Project is located entirely within Deuel County in the following sections and townships (refer to the attached figure):

Sections	Township
1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 15, 22, 31, 32, 34, 35	Blom (113N 49W)
2, 3, 4, 6, 19, 24, 25, 29, 30, 31, 32, 34, 35	Brandt (114N 49W)
1	Grange (113N 50W)
24, 25, 26	Hidewood (114N 50W)
5, 6, 7, 12, 16, 17, 18, 20, 21, 22	Scandinavia (113N 48W)

On September 5, 2018, we met with staff from your office to provide an overview of the Project, discuss the status of complete and pending field surveys, as well as potential for

Avangrid Renewables, LLC
1125 NW Couch Street, Portland, Oregon 97209
Telephone 319.626.2512
www.avangridrenewables.us, jbermel@avangrid.com

impacts to listed species and U.S. Fish & Wildlife Service easements. As additional surveys are conducted, we will continue to consult with U.S. Fish and Wildlife Service.

The purpose of this letter is to inform your organization of the proposed Project and to seek your comments regarding any potential concerns or issues that may exist within the Project area. On April 29, 2019, we submitted a Wind Energy System and Special Exception Permit application to Deuel County. In addition, Tatanka Ridge will include copies of all correspondence received regarding the proposed Project with the Energy Facility Site Permit application for the PUC's records. Therefore, we would greatly appreciate receiving your comments, in writing, by June 6, 2019.

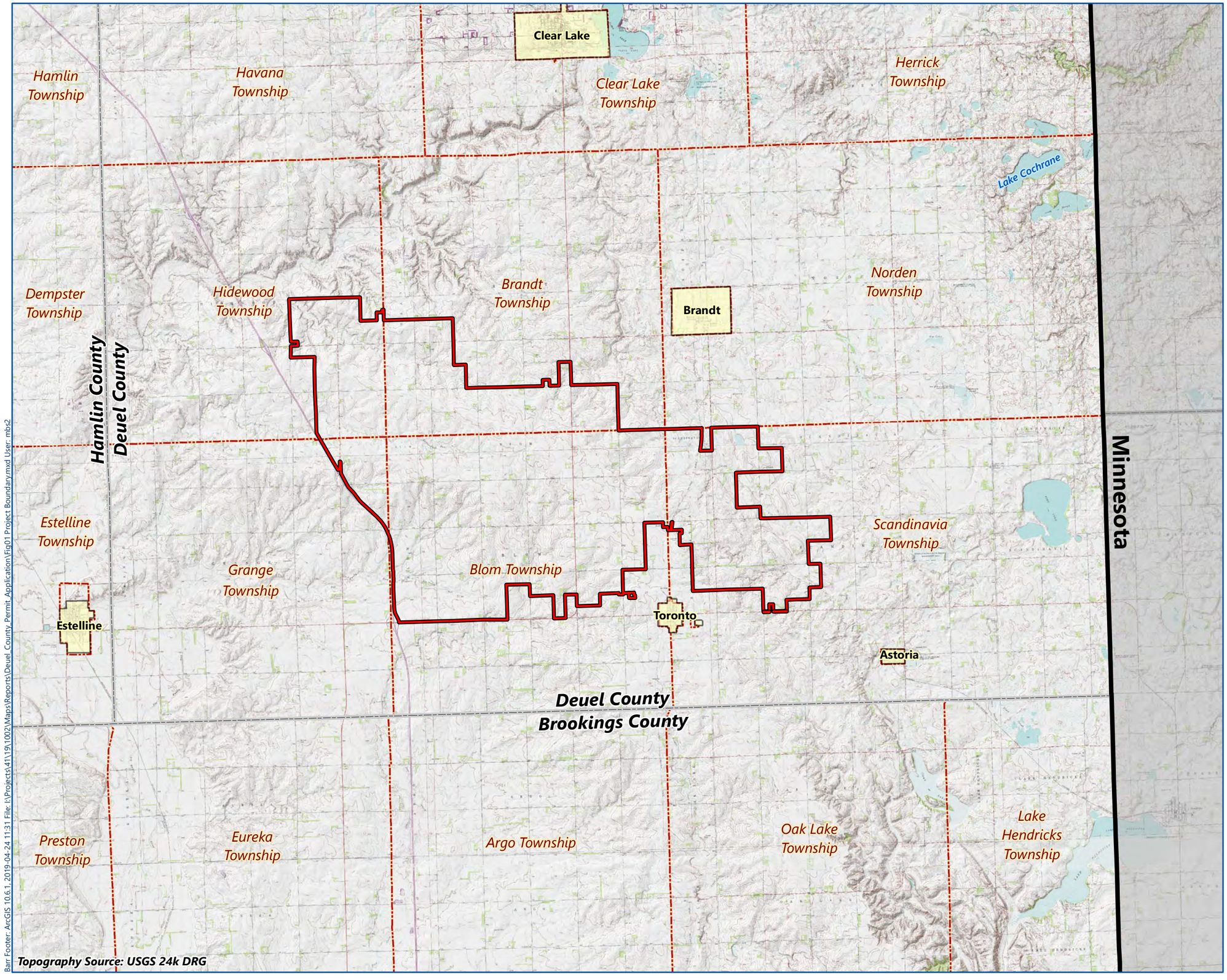
Pease feel free to direct any questions or comments to me at jbermel@avangrid.com, or (319) 626-2512.

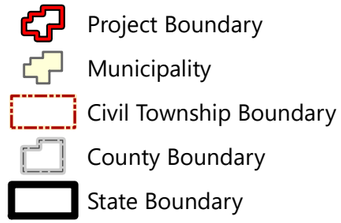
Yours Sincerely,

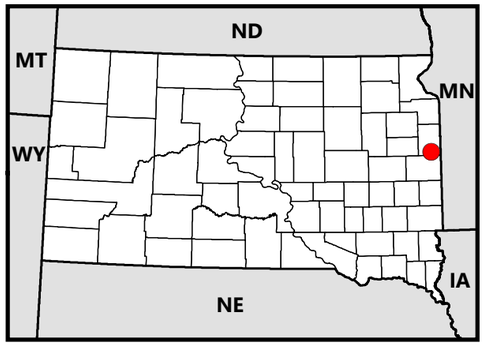
Jesse Bermel
Business Developer

Attachments: Project Location Map

cc: Rachael Shetka, Barr Engineering Co.
Mandy Bohnenblust, Avangrid Renewables
Brett Koenecke, May, Adam, Gerdes &Thompson, LLP







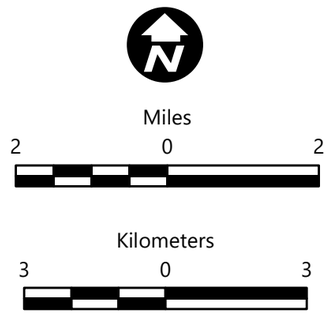


Figure 1

PROJECT BOUNDARY
Tatanka Ridge Wind Project
Tatanka Ridge Wind, LLC
Deuel County, South Dakota

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Dakota Ecological Services
420 South Garfield Avenue, Suite 400
Pierre, South Dakota 57501-5408
(605) 224-8693, southdakotafieldoffice@fws.gov

IN REPLY REFER TO:
Tatanka Ridge Wind, Deuel County

May 30, 2019

Mr. Jesse Bermel
Avangrid Renewables, LLC
1125 NW Couch Street
Portland, Oregon 97209

Dear Mr. Bermel:

This letter is in response to your request dated May 6, 2019, for environmental comments regarding the proposed Tatanka Ridge Wind Project (formerly known as Buffalo Ridge III) involving installation of up to 56 turbines (155 MW) and associated project facilities in Deuel County, South Dakota.

Via a September 5, 2018, meeting and email exchanges with Avangrid and consultants, we are in receipt of 2018 and 2019 project reports on habitats and/or surveys regarding northern long-eared bats, eagle/raptor nests, and the Dakota skipper/Poweshiek skipperling; it is our understanding that additional reports will be available at a later date. Per our meeting, we are aware of, but do not have, older reports from work done on the site (former Buffalo Ridge III efforts).

We have recommended avoidance of grassland and wetland habitats, and advised of the potential for indirect impacts to grassland nesting birds and waterfowl in these habitats, as well as the need to offset any such impacts. As of this writing, your consultant WEST indicated in a May 29, 2019, email that only one of the possible 62 turbines will be sited in grassland. It appears efforts were made to avoid direct impacts to grasslands and wetlands, although we have no information on placement of associated roads or other project facilities. Additionally, turbines placed in cropland can have indirect effects to wildlife occurring on adjacent grasslands and wetlands. It is not apparent that this effect has been acknowledged or quantified, and we are not aware of any plans to offset this impact. As stated during our September 5, 2018, meeting, the Tatanka Ridge project is proposed within an area dominated by (65%) croplands; during an April 4, 2019, call, the cropland acreage was stated to be 71%. Our recommendation to avoid grassland and wetlands as much as possible by micrositing, and quantify/offset any remaining direct and indirect impacts, still applies.

We have conveyed potential concerns regarding the Topeka shiner and stream crossings that may be required as a result of this project. If project-related actions occur in, or adjacent to stream

habitat of this endangered minnow, the species may be impacted and additional coordination with this office may be required to ensure compliance with the Endangered Species Act, potentially via the U.S. Army Corps of Engineers if a permit from that agency is required.

The attached document provides additional details, information, and recommendations 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 in the project area and vicinity. We have included guidelines and methods to apply to various components of a wind farm including turbines, meteorological towers, and power lines in order to avoid, minimize and/or compensate for impacts to trust resources and assist you in achieving compliance with Federal laws.

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

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

Sincerely,

Natalie Gates

For Scott Larson
Field Supervisor
North and South Dakota Field Offices

Attachment

cc: USFWS/Madison WMD/Natoma Hansen
SDDGFP/Pierre/Hilary Meyer
SDPUC/Pierre/Darren Kearney

Attachment: USFWS Information and Recommendations Regarding the Tatanka Ridge Wind Project, Deuel County, South Dakota
May 30, 2019

2012 Land-Based Wind Energy Guidelines

Per our coordination regarding this project, we recognize that Avangrid is aware of and has been using the voluntary 2012 *U.S. Fish and Wildlife Service Land-Based Wind Energy Guidelines* (WEG) (available online at: http://www.fws.gov/windenergy/) which were developed in consultation with wind industry companies. We recommend close adherence to these guidelines, using the information gathered to determine first whether the project should be placed in the area of interest at all. The WEG invokes a tiered approach in which information is collected with increasing levels of detail in order to evaluate risk posed to habitats and wildlife at potential wind energy sites. Tiers 1-3 each represent a preconstruction decision point to either move forward to development, gather more information and move to the next tier, or to abandon project plans at a given site, thereby avoiding areas where development is precluded or where wildlife impacts are likely to be high and difficult or costly to remedy or mitigate at a later stage. If the project is to proceed at the chosen location, then the information gathered per the WEG should guide project specifics, such as turbine locations, and any needed mitigation measures. Wind energy facility effects to wildlife are both direct and indirect, typically including collision mortality, loss of habitat due to the footprint of the turbines/roads/other facilities, habitat fragmentation, displacement, encroachment of invasive weeds, and more. Currently, the best strategy to reduce impacts to wildlife in is to develop wind energy facilities within areas dominated by cropland wherever possible to preclude direct impacts to valuable wildlife habitats, and siting turbines away from adjacent wildlife habitat as much as possible to reduce indirect effects. Note that the South Dakota Department of Game, Fish and Parks also developed siting guidelines for wind developers, *Siting Guidelines for Wind Power Projects in South Dakota*, available online at: https://gfp.sd.gov/userdocs/docs/wind-energy-guidelines.pdf.

U.S. Fish and Wildlife Service Land Interests

The location of the proposed Tatanka Ridge Wind Project falls within an area under the jurisdiction of the Service's Madison Wetland Management District (WMD). We are aware that you have been in contact with Madison WMD staff to determine the exact locations of these properties and any additional restrictions that may apply regarding those sites. It is our understanding the proposed project facilities will not directly impact USFWS land interests, but we recommend continued coordination with Madison WMD staff to ensure avoidance is achieved.

Eagle Guidance

Golden eagles (*Aquila chrysaetos*) are year-round residents in western South Dakota, and may be found throughout the state in winter or during migration. Bald eagles (*Haliaeetus leucocephalus*) occur throughout South Dakota in all seasons. These species are protected from

a variety of harmful actions via take prohibitions in both the Migratory Bird Treaty Act[1] (MBTA; 16 U.S.C. 703-712) and the Bald and Golden Eagle Protection Act (BGEPA; 16 U.S.C. 668–668d). The BGEPA, enacted in 1940 and amended several times, prohibits take of bald eagles and golden eagles, including their parts, nests, young or eggs, except where otherwise permitted pursuant to federal regulations. Incidental take of eagles from actions such as electrocutions from power lines or wind turbine strikes are prohibited unless specifically authorized via an eagle incidental take permit from US Fish and Wildlife Service (Service). BGEPA provides penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." BGEPA defines take to include the following actions: "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." The Service expanded this definition by regulation to include the term "destroy" to ensure that "take" also encompasses destruction of eagle nests. Also the Service defined the term disturb which means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.

The Service has developed guidance for the public regarding means to avoid take of bald and golden eagles:

- The 2007 *National Bald Eagle Management Guidelines* serve to advise landowners, land managers, and others who share public and private lands with bald eagles when and under what circumstances the protective provisions of BGEPA may apply. They provide conservation recommendations to help people avoid and/or minimize such impacts to bald eagles, particularly where they may constitute "disturbance," which is prohibited by the BGEPA. https://www.fws.gov/northeast/ecologicalservices/pdf/NationalBaldEagleManagementGuidelines.pdf
- The 2013 *Eagle Conservation Plan Guidance, Module 1- Land-based Wind Energy, Version 2* is specific to wind energy development and provides in-depth guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities. Development of an Eagle Conservation Plan per these guidelines may serve as the basis for applying for an eagle incidental take permit for wind energy facilities. Applications for such eagle incidental take permits must include an Eagle

[1] On December 22, 2017, the Department of the Interior's (DOI) Office of the Solicitor Memorandum M-37050 titled The Migratory Bird Treaty Act Does Not Prohibit Incidental Take (https://www.doi.gov/sites/doi.gov/files/uploads/m-37050.pdf) concludes that the MBTA's prohibitions on pursuing, hunting, taking, capturing, killing, or attempting to do the same apply only to affirmative actions that have as their purpose the taking or killing of migratory birds, their nests, or their eggs. The MBTA list of protected species includes bald and golden eagles, and the law has been an effective tool to pursue incidental take cases involving eagles. However, the primary law protecting eagles is the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S. Code § 668), since the bald eagle was delisted under the Endangered Species Act in 2007. Memorandum-37050 does not affect the ability of the Service to refer entities for prosecution that have violated the take prohibitions for eagles established by the BGEPA.

Conservation Plan.
https://www.fws.gov/migratorybirds/pdf/management/eagleconservationplanguidance.pdf

The Service also has promulgated new permit regulations under BGEPA:

- New eagle permit regulations, as allowed under BGEPA, were promulgated by the Service in 2009 (74 FR 46836; Sept. 11, 2009) and revised in 2016 (81 FR 91494; Dec. 16, 2016). The regulations authorize the limited take of bald and golden eagles where the take to be authorized is associated with otherwise lawful activities. These regulations also establish permit provisions for intentional take of eagle nests where necessary to ensure public health and safety, in addition to other limited circumstances. The revisions in 2016 included changes to permit issuance criteria and duration, definitions, compensatory mitigation standards, criteria for eagle nest removal permits, permit application requirements, and fees in order to clarify, improve implementation and increase compliance while still protecting eagles.
https://www.gpo.gov/fdsys/pkg/FR-2016-12-16/pdf/2016-29908.pdf

The Service's Office of Law Enforcement carries out its mission to protect eagles through investigations and enforcement, as well as by fostering relationships with individuals, companies, industries and agencies that have taken effective steps to avoid take, including incidental take of these species, and encouraging others to implement measures to avoid take. The Office of Law Enforcement focuses its resources on investigating individuals and entities that take eagles without identifying and implementing all reasonable, prudent and effective measures to avoid that take. Those individuals and entities are encouraged to work closely with Service biologists to identify available protective measures, and to implement those measures during all activities or situations where their action or inaction may result in the take of an eagle(s).

Note that the Service has also developed recommendations for wind developers specific to the Mountain-Prairie Region (Region 6):

- *Region 6 Recommendations for Avoidance and Minimization of Impacts to Golden Eagles at Wind Energy Facilities* –The goal of these recommendations is to contribute to maintaining stable or increasing breeding populations of eagles by recommending conservation measures that will maintain breeding territories and minimize impacts to other important eagle use areas (e.g., eagle nests, foraging areas, and communal roosts). https://www.fws.gov/coloradoes/documents/Final_GOEA_Buffer_Recommendations_AvoidanceMinimization_WindFacilities_April_10_2013.pdf.
- *Final Outline and Components of an Eagle Conservation Plan (ECP) for Wind Development: Recommendations from USFWS Region 6* – In the event a project proponent intends to develop an ECP, 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 the plan. https://www.fws.gov/coloradoes/documents/Final_USFWS_R6_ECP_guidance.pdf.

We recommend close adherence to the guidelines above, including modeling of eagle data to determine the level of risk posed by the project and possible need for an eagle take permit. We request results of any eagle data collected at the Tatanka Ridge Wind Project.

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):

Species	Status	Expected Occurrence
Topeka Shiner (*Notropis topeka*)	Endangered	Resident or potential resident
Rufa Red Knot (*Calidris canutus rufa*)	Threatened	Rare seasonal migrant
Northern Long-eared Bat (*Myotis septentrionalis*)	Threatened	Summer resident, seasonal migrant, known winter resident in the Black Hills
Dakota Skipper (*Hesperia dacotae*)	Threatened	Resident in native prairie, northeastern SD
Poweshiek Skipperling (*Oarisma poweshiek*)	Endangered	Resident in native prairie, northeastern SD

Topeka shiner

The Topeka shiner is a small minnow known to occupy numerous small streams within eastern South Dakota's Big Sioux, Vermillion, and James River watersheds. Within the vicinity of the Tatanka Ridge Wind Project, Hidewood Creek, Peg Munky Run, and North Deer Creek are known occupied Topeka shiner streams. Tributaries of these waterways should be assumed occupied, unless circumstances indicate otherwise (e.g. a tributary is completely dry with no pools). Note that the species' habitat includes intermittent streams and the species may persist in isolated pools among surrounding dry streambed within such habitats. If activities of the proposed project may impact these streams directly (instream work) or indirectly (activities adjacent to the stream), we advise additional coordination with this office to ensure compliance with the ESA.

Rufa Red Knot:

The rufa red knot is a robin-sized shorebird listed as threatened under the Endangered Species Act. 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. The species is present in South Dakota year-round, primarily roosting singly or in colonies underneath bark, in cavities or in crevices of both live and dead trees in the summer. Some hibernacula exist within caves/mines in the Black Hills. The species has also been detected in both forested and non-forested (e.g. Badlands National Park) areas in South Dakota 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 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. See: https://www.fws.gov/Midwest/Endangered/mammals/nleb/index.html.

The recommended survey protocols for the northern long-eared bat are identical for those established for the Indiana Bat (*Myotis sodalis*) and are available online at: https://www.fws.gov/midwest/endangered/mammals/inba/inbasummersurveyguidance.html. Per your consultant's (WEST) northern long-eared bat habitat/survey reports, those guidelines were applied to this project. Note, however, that due to the nature of suitable habitats identified at this site (small/isolated/scattered) the application of one aspect of the guidelines may have been applied in a manner that resulted in an inadequate level of effort to determine, with confidence, the presence/probable absence of the species. The guidelines indicate that for every 123 acres of suitable habitat, one location should be surveyed. At the Tatanka Ridge Wind Project, 12 small, isolated and scattered forested patches (10 acres or more in size) were identified as suitable habitat. The acreages of these 12 sites were combined, totaling 195 acres, and resulting in the need for two survey locations. One patch was surveyed in 2018 when the project area was smaller and less suitable habitat was identified, and in 2019 one more site will be surveyed to achieve the two locations needed to meet the one-per-123-acre criteria in the guidelines. These two patches compose only 17% of the twelve patches in the project area, with only one site of twelve (8%) checked each year (actual percentage of the 195 acres covered by the surveys is unknown). These numbers appear to represent relatively low level of coverage of the identified suitable habitat sites, and may not be adequate to detect an uncommon species that tends to avoid flying in large open areas (e.g. between fragmented forest patches). As you know, surveys are voluntary and currently the 4(d) rule exempts take of the northern long-eared bat via wind turbine collision. However, if the purpose of conducting surveys is to determine with confidence that the species is, or is not, present at the Tatanka Ridge Wind Project site, then the method of combining acreages of these small/isolated/scattered forested habitat patches into a single total may not be an appropriate means to determine the level of survey effort needed. Surveys of additional patches may be needed to increase confidence in survey conclusions.

Dakota Skipper

The Dakota skipper is a small prairie butterfly listed federally as a threatened species. 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 deathacamas (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.

Flight-season surveys for adult Dakota skipper and Poweshiek skipperling (below) were conducted at the Tatanka Ridge site in 2018 with no detections of the two species. Per SWCA Environmental Consultants' report *Dakota skipper (Hesperia dacotae) and Poweshiek skipperling (Oarisma poweshiek) Survey Report for the Tatanka Ridge Wind Project, Deuel County, South Dakota*, suitable habitat exists at the project site, although much of it is deemed marginal due to factors such as lack of nectar species, small patch size, isolation, lack of plant diversity and predominance of invasive grass species. SWCA utilized the *2018 Dakota Skipper (Hesperia dacotae) North Dakota Survey Protocol* (available online at: https://www.fws.gov/mountainrairie/ es/protocols/2018_FINAL%20Dakota %20Skipper% 20Survey%20Protocol_4202018.pdf) adding a 250 m buffer to surveyed sites, appropriate when there is no known Dakota skipper locations nearby. It appears the protocol was followed perhaps with exception of single-year sampling occurring at "peak" times (approximately 5 days after flight period begins); the last few survey dates in July may have missed the peak of the 2018 flight period. Additionally, the exact sites that were surveyed are not clearly identified within SWCA's 2018 report. It is our understanding that additional surveys are planned for this summer. The Service (our Twin Cities Ecological Services Office in Minnesota) tracks both positive and negative Dakota skipper survey locations, thus we request that detailed survey site information be included in all reports.

Poweshiek Skipperling

The Poweshiek skipperling is a small prairie butterfly listed federally as endangered. Their habitat 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 this species in South Dakota; for details and locations see the following website: http://www.fws.gov/midwest/endangered/insects/dask/finalch.html. Per the above SWCA habitat/survey report for this project, the same *2018 Dakota Skipper (Hesperia dacotae) North Dakota Survey Protocol* recommended above for the Dakota skipper were used to survey for Poweshiek skipperlings without detecting the species at the Tatanka Ridge site.

At this time, it is not clear whether a federal nexus exists for this project. If take of federally listed species may occur and no federal nexus exists, 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: http://www.fws.gov/endangered/what-we-do/hcp-overview.html.

Wetlands

According to National Wetlands Inventory maps, available online at: https://www.fws.gov/wetlands/, wetlands exist within the proposed project area. If a project may impact wetlands or other important fish and wildlife habitats, the Service, in accordance with the National Environmental Policy Act (NEPA) 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.

Native Grasslands

Native prairie is a particularly important habitat in South Dakota. In addition to the intrinsic value of diverse native prairie plant communities, these areas represent a fraction of the prairie acres that once existed in the state. These habitats harbor numerous native wildlife species, some of which cannot survive outside the native plant community. We recommend complete avoidance of direct and indirect impacts to these habitats. The likely location of these grasslands in eastern South Dakota has been identified by Bauman et al. (2016). This publication and data layers may be obtained online at: https://openprairie.sdstate.edu/data_land-easternSD/1/. Note that while native prairie is considered a conservation priority in the state, lesser-quality grasslands (e.g. grasslands with a high non-native plant component, overgrazed grasslands) can still provide habitat for wildlife and we recommend avoidance of these plant communities whenever possible. Project impacts should instead be directed toward previously disturbed land (e.g. cropland), which composes the majority of the Tatanka Ridge Wind Project area.

Birds of Conservation Concern

The Migratory Birds Division of the Service has published *Birds of Conservation Concern* [BCC] *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. There are 27 species listed in the BCC document that occur within Bird Conservation Region 11 (Prairie Potholes), many of which likely inhabit the Tatanka Ridge Wind Project area. Direct and indirect effects to these species may occur with establishment of this wind facility. Primary threats impacting grassland species that occur in South Dakota are habitat loss and fragmentation. 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, including BCC species. Compliance with this law may be partially addressed in a Bird and Bat Conservation Strategy (BBCS) (identified within the WEG and explained further below).

Avian Avoidance of Wind Turbines

As indicated in the WEG, wind turbines are known to impact migratory birds directly, with post-construction mortality surveys typically recommended for 1-2 years (or more) in order to identify mortality levels. Importantly, the WEG also identifies the indirect effects of wind energy facilities such as fragmentation effects and avian avoidance of turbines resulting in displacement to other habitats. While direct impacts can readily be observed and quantified, these indirect impacts are more difficult to quantify and require more time and effort. The Before-After-Control-Impact (BACI) method for avian studies is recommended in the WEG. This study design is particularly useful in determining indirect effects of wind projects on wildlife, but such studies are rarely conducted typically due to those time/effort constraints. In the absence of robust project-specific research at every wind farm, two relatively recent studies are of particular importance to this issue of quantifying avoidance/displacement: Loesch et al. (2013) and Shaffer and Buhl (2016).

Loesch et al. (2013) evaluated breeding waterfowl pairs on wetlands at existing wind farms and reference sites in the Prairie Pothole Region. Displacement of 18% of pairs, among five waterfowls species was detected within 805 meters (0.5 mile) of wind turbines (C. Loesch, USFWS, pers. comm., 2019).

Similarly, Shaffer and Buhl (2016) evaluated wind farms and reference sites in the Prairie Pothole Region, but their research was on grassland nesting birds and also included pre-construction data, thus this study applied the BACI method. Their results also detected avoidance of turbines by seven species. The average rate of displacement out to 300 meters (0.19 mile) from wind turbines was 53% by the 5th year post construction (J. Shaffer, USGS, pers. comm., 2019). This research also detected a trend: displacement rates of grassland nesting birds continued to increase over time during that 5 years post-construction (J. Shaffer, USGS, pers. comm. 2019).

Both of these peer reviewed, published studies were conducted over multiple years, on multiple wind farms, involved large sample sizes, used reference sites for comparison, and were

conducted on wind farms in North and South Dakota where many of the same species likely to occur at Tatanka Ridge Wind Project were observed to avoid wind turbines.

In addition to the above recent research, you are likely aware of an older study of shorter duration conducted at the Buffalo Ridge wind facility in southeastern Minnesota which also identified avoidance of wind turbines by birds, this time on Conservation Reserve Program (CRP) lands: Leddy et al. 1999. CRP grasslands are areas typically planted with grass species after being cropped. CRP grasslands without turbines and areas located 180 m from turbines supported higher densities (261.0-312.5 males/100 ha) of grassland birds than areas within 80 m of turbines (58.2-128.0 males/100 ha) (Leddy et al. 1999). While native prairie is of particular importance due to its decline and native species that depend on it, planted grassland tracts also hold value for wildlife, and birds using these tracts can be displaced.

If the Tatanka Ridge Wind Project proceeds, we recommend using C. Loesch's 18% displacement of waterfowl pairs within ½ mile of turbines to quantify the number of wetlands needed to compensate for waterfowl displacement at the site and develop a plan to achieve those offsets. We also recommend quantifying grasslands within 300 m of turbines and applying the 53% displacement value via Shaffer and Buhl (2016) to determine and disclose anticipated indirect impacts to grassland nesting birds, and adding this to the offset plan. Finally, if CRP or other non-native grassland habitats will be affected by the Tatanka Ridge Wind Project, we recommend using the displacement information in Leddy et al. (1999) to develop appropriate offsets for this impact in the plan as well. This information is needed to adequately develop appropriate offsets for this form of habitat loss, and we encourage project developers to provide that plan as part of the project.

Mitigation

The Service's mitigation policy, available online at: https://www.fws.gov/policy/a1npi89_02.pdf, was established in 1981 to help assure consistent and effective mitigation recommendations that help Federal action agencies and developers plan for mitigation measures early, avoid delays, and assure equal consideration of fish and wildlife resources with other project features and purposes. Our policy adopts the definition of the term "mitigation" as stated in the NEPA regulations which includes: "(a) avoiding the impact altogether by not taking a certain action or parts of an action; (b) minimizing impacts by limiting the degree or magnitude of the action and its implementation; (c) rectifying the impact by restoring the affected environment; (d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and (e) compensating for the impact by replacing or providing substitute resources or environments."

As noted above, direct and indirect effects to wildlife are known to occur at wind energy facilities. We encourage the analysis of both types of impact and quantification of those impacts whenever possible. The mitigation methods above can be applied to reduce direct and indirect effects at any point in the process of project development; however, we recommend early planning to help ensure full implementation of any necessary mitigation measures.

Bird and Bat Conservation Strategy

Bird and bat conservation strategies are recommended in the WEG. We have developed a regional document to further assist companies in following our established national guidance on BBCSs: *U.S. Fish and Wildlife Service, Region 6, Mountain-Prairie Region Outline for a Bird and Bat Conservation Strategy: Wind Energy Projects,* available online at: https://www.fws.gov/coloradoes/documents/Final%20R6%20BBCS%20Outline%20with%20annotation.pdf. 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 the WEG, describing the analyses, studies, and reasoning implemented with the purpose of mitigating for potential avian and bat impacts. It also addresses post-construction monitoring and habitat impacts. We recommend completion of a BBCS for this proposed energy wind facility.

Meteorological Towers

Meterological towers associated with the Tatanka Ridge Wind Project are similar to other communication towers in that they are a known mortality hazard to wildlife, particularly birds. Of primary concern is the risk of avian collision mortality. Communication towers are currently estimated to kill 6.8 million birds per year in the United States and Canada (Longcore et al. 2012). To assist developers in establishing communications towers that are more compatible with wildlife, we have developed our 2018 *Recommended Best Practices for Communication Tower Design, Siting, Construction, Operation, Maintenance, and Decommissioning*, available online at: https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds/collisions/communication-towers.php. These recommendations incorporate the state of the science and the 2015 Federal Aviation Administration's *Obstruction Marking and Lighting Advisory Circular AC 70/7460-1L*, online at: https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_70_7460-1L_with_chg_1.pdf. 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 new 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 (avoid 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. The habitat at a tower location and surrounding area can also affect its level of risk to wildlife. Tower placement should occur in degraded sites avoiding ridgelines, coastal areas, wetlands or other bird concentration areas such as staging areas, rookeries, leks, and state or federal refuges. Please see the website provided above for additional information.

Overhead 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* includes many measures to reduce risk to birds 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: http://www.eei.org/resourcesandmedia/products/Pages/products.aspx, 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-to-skin 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:
https://www.edmlink.com/component/zoo/item/video-raptors-at-risk.

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.

While marking of power lines reduces line strike mortality, it does not preclude it entirely. Thus, marking of additional, existing, overhead lines is recommended to further offset the potential for avian line strike mortality.

Summary

Below we reiterate items above that are pertinent to the proposed project:

- Wind energy guidelines:
  - *U.S. Fish and Wildlife Service Land-Based Wind Energy Guidelines* http://www.fws.gov/windenergy/
  - South Dakota Game, Fish and Parks *Siting Guidelines for Wind Power Projects in South Dakota* https://gfp.sd.gov/userdocs/docs/wind-energy-guidelines.pdf

- Service land interests:
  - Contact Madison WMD

- Eagle guidance:
  - Bald and Golden Eagle Protection Act (BGEPA)
  - *National Bald Eagle Management Guidelines* https://www.fws.gov/northeast/ecologicalservices/pdf/NationalBaldEagleManagementGuidelines.pdf
  - *Eagle Conservation Plan Guidance, Module 1 – Land-based Wind Energy Version 2* https://www.fws.gov/migratorybirds/pdf/management/eagleconservationplanguidance.pdf
  - Eagle take permit https://www.gpo.gov/fdsys/pkg/FR-2016-12-16/pdf/2016-29908.pdf
  - *Region 6 Recommendations for Avoidance and Minimization of Impacts to Golden Eagles at Wind Energy Facilities* https://www.fws.gov/coloradoes/documents/Final_GOEA_Buffer_Recommendations_AvoidanceMinimization_WindFacilities_April_10_2013.pdf

- *Final Outline and Components of an Eagle Conservation Plan (ECP) for Wind Development: Recommendations from USFWS Region 6*
  https://www.fws.gov/coloradoes/documents/Final_USFWS_R6_ECP_guidance.pdf

- Threatened/endangered species - Endangered Species Act (ESA):
  - Topeka shiner
  - Rufa red knot
  - Northern long-eared bat
  - Dakota skipper
  - Poweshiek skipperling

- Wetlands – avoid, minimize, compensate for unavoidable impacts:
  https://www.fws.gov/wetlands/

- Native Grasslands – identify, avoid, minimize:
  - Bauman et al. 2016 inventory of untilled land
    https://openprairie.sdstate.edu/data_land-easternSD/1/

- Birds of Conservation Concern - *Birds of Conservation Concern 2008:*
  https://www.fws.gov/migratorybirds/pdf/grants/BirdsofConservationConcern2008.pdf

- Avian Avoidance of Wind Turbines - compensate for unavoidable indirect impacts::
  - Loesch et al. (2013) – displacement of waterfowl
  - Shaffer and Buhl (2016) – displacement of grassland nesting birds
  - Leddy et al. (1999) – displacement of grassland nesting birds in CRP

- Mitigation - 1981 Service Policy: https://www.fws.gov/policy/a1npi89_02.pdf

- Bird and Bat Conservation Strategy – WEG and *U.S. Fish and Wildlife Service, Region 6, Mountain-Prairie Region Outline for a Bird and Bat Conservation Strategy: Wind Energy Projects:*
  https://www.fws.gov/coloradoes/documents/Final%20R6%20BBCS%20Outline%20with%20annotation.pdf

- Meteorological Towers:
  - *2018 Recommended Best Practices for Communication Tower Design, Siting, Construction, Operation, Maintenance, and Decommissioning*
    https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds/collisions/communication-towers.php
  - 2015 Federal Aviation Administration Obstruction Marking and Lighting Advisory Circular AC70/7460-1L
    https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_70_7460-1L_with_chg_1.pdf

- Overhead Power Lines:
  - *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006*
    http://www.eei.org/resourcesandmedia/products/Pages/products.aspx
  - *Raptors at Risk* video
    https://www.edmlink.com/component/zoo/item/video-raptors-at-risk
  - *Reducing Avian Collisions with Power Lines: The State of the Art in 2012*
    http://www.eei.org/resourcesandmedia/products/Pages/products.aspx

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