

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA**

**IN THE MATTER OF THE APPLICATION OF
CROWNED RIDGE WIND, LLC FOR A FACILITIES PERMIT TO
CONSTRUCT A 300 MEGAWATT WIND FACILITY**

Docket No. EL19-

**DIRECT TESTIMONY AND EXHIBITS
OF TYLER WILHELM AND SAM MASSEY**

January 29, 2019

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INTRODUCTION AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAMES AND BUSINESS ADDRESS.

A. Tyler Wilhelm and Sam Massey. Our business address is 700 Universe Blvd., Juno Beach, Florida, 33408.

Q. WHAT IS YOUR JOB AND WHAT ARE YOUR JOB RESPONSIBILITIES?

A. We are both employed by NextEra Energy Resources, LLC (“NEER”). Mr. Wilhelm is a Project Manager of Renewable Development at NEER. Mr. Massey is Director of Renewable Development at NEER. Together, we are responsible for the development, permitting, community outreach, regulatory compliance, and meeting the commercial operations date (“COD”) for the 300 megawatt (“MW”) Crowned Ridge wind generation project (“Project”). The Project’s COD is planned for first quarter of 2020.

Q. WHAT IS THE ORGANIZATIONAL RELATIONSHIP BETWEEN NEER AND CROWDED RIDGE WIND, LLC?

A. Crowned Ridge Wind, LLC (“CRW”) is an indirect, wholly-owned subsidiary of NEER. NEER, through its affiliated entities, is the world’s largest generator of renewable energy from the wind and sun, generating over 19,000 MWs in 29 states and Canada. NEER affiliates in the State of South Dakota own the following wind facilities: Day County Wind, South Dakota Wind Energy Center, and Wessington Springs Wind.

1 **Q. PLEASE DESCRIBE YOUR PROFESSIONAL BACKGROUNDS.**

2 A. Mr. Wilhelm has been employed by NEER since 2015, in the capacity of Land Services
3 Representative, Associate Project Manager, and Project Manager on NEER's
4 Midcontinent Renewable Development team. As a Project Manager, Mr. Wilhelm
5 manages NEER's development efforts within the state of South Dakota. Since 2015, Mr.
6 Wilhelm has actively developed multiple renewable energy projects within 4 mid-western
7 states contributing to the procurement of over 200 MWs of renewable generation. His
8 involvement in the development process has included efforts such as landowner and
9 community outreach, lease negotiations, local and state permitting, and project
10 origination. Prior to joining NEER, Mr. Wilhelm attended the University of South Dakota
11 where he received his B.A in Business.

12

13 Mr. Massey has been employed by NEER since 2014, in the capacity of Project Director
14 and Director of Renewable Development on NEER's Midcontinent and Coastal
15 Renewable Development team. As a Director of Renewable Development, Mr. Massey
16 directs the development of renewable energy projects across multiple states in the
17 Midwest and mountain west regions. Since 2014, Mr. Massey has developed over 600
18 MWs of generation projects. Prior to joining NEER, Mr. Massey spent 10 years in the
19 U.S. Navy as a commissioned officer, serving on multiple submarine patrols and a
20 combat tour to Afghanistan, where he was subsequently awarded the Bronze Star for
21 meritorious service.

22

23

1 Q. HAS THIS TESTIMONY BEEN PREPARED BY YOU OR UNDER YOUR
2 DIRECT SUPERVISION?

3 A. Yes.

4

5 Q. HAVE EITHER OF YOU PREVIOUSLY TESTIFIED BEFORE THE PUBLIC
6 SERVICE COMMISSION OF SOUTH DAKOTA?

7 A. No.

8

9

PURPOSE OF TESTIMONY

10 Q. PLEASE DESCRIBE THE PURPOSE OF THE TESTIMONY.

11 A. The purpose of our testimony is to provide an overview: (1) of the Project; (2)
12 development activities; (3) the benefits associated with the Project.

13

14

OVERVIEW OF THE WIND FACILITY

15 Q. PLEASE DESCRIBE THE PROPOSED WIND FACILITY.

16 A. The Project is situated within an approximately 53,200-acre Project Area spanning across
17 parts of Codington County and Grant County, South Dakota. The Project will total
18 approximately 300 MWs of installed capacity and will consist of 130 three bladed,
19 upwind, horizontal-axis wind turbines, a collector substation, and an operations and
20 maintenance (“O&M”) facility located approximately 14-miles north-east of Watertown,
21 South Dakota.

22

1 The Project will utilize 117 GE 2.3 MW turbines with 116-meter (381-foot) rotor
2 diameter and 90-meter (295-foot) hub height, and 13 GE 2.3MW turbines with 116-meter
3 (381-foot) rotor diameter and an 80- meter (262-foot) hub height. Twenty alternate
4 turbine locations have been identified and will use GE 2.3MW with 116-meter (381-foot)
5 rotor diameter and 90-meter (295-foot) hub height. In the end, a maximum of 130
6 turbines in total will be constructed. Alternate turbines are included to provide flexibility
7 through the permitting and construction process in the event an unforeseen condition
8 arises during construction that indicates a primary turbine location should be dropped and
9 an alternate turbine location activated.

10 The Project will utilize the proposed Crowned Ridge 34-mile 230 kV generation tie line
11 and a new reactive power compensation substation to transport the generation from the
12 Project's collector substation to the Project's point of interconnection located at the Big
13 Stone South 230 kV Substation owned by Otter Tail Power Company. The Crowned
14 Ridge 34-mile 230kV generation tie line and new reactive power compensation
15 substation were approved in Docket EL17-050 on November 21, 2018. The location of
16 the turbines for CRW is illustrated in the map attached as Exhibit TW SM-1.

17
18 CRW requests that the permit allow turbines to be shifted within 500 feet of their
19 currently proposed locations, with the understanding that any such shifts would still need
20 to comply with setback and noise and shadow flicker thresholds and adhere to all
21 applicable local, State, and Federal requirements. Although such shifts are not expected
22 to be needed, such flexibility would allow for CRW to accommodate proposed shifts
23 from local stakeholders and governing bodies where possible.

1 **Q. EXPLAIN WHY THE WIND FACILITY IS NEEDED.**

2 A. On July 6, 2017, the Minnesota Public Service Commission approved Northern States
3 Power's ("NSP") Petition for Approval of the Acquisition of Wind Generation from the
4 Company's 2016-2030 Integrated Resource Plan, which included NSP's power purchase
5 agreement ("PPA") with CRW. Similarly, the North Dakota Public Service Commission
6 issued an order approving an advance determination of prudence for the PPA between
7 NSP and CRW on December 6, 2018.

8

9 **Q. WHO WILL BE RESPONSIBLE FOR OBTAINING ALL APPLICABLE
10 FEDERAL, STATE, AND LOCAL PERMITS?**

11 A. CRW will be responsible for obtaining all applicable federal, state, and local permits.

12

13 **Q. WHO WILL CONSTRUCT THE PROJECT?**

14 A. CRW will construct the Project.

15

16 **Q. WHO WILL CONDUCT O&M ON THE WIND FACILITY?**

17 A. CRW will be responsible for the O&M for the facility.

18

19 **Q. HAVE ALL NECESSARY PROPERTY RIGHTS BEEN SECURED FOR THE
20 WIND FACILITY?**

21 A. At this time 99% of the necessary property rights have been obtained by CRW for the
22 construction and O&M of the Project. CRW anticipates all necessary property rights to be
23 obtained by March 1, 2019.

DEVELOPMENT ACTIVITIES

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Q. PROVIDE AN OVERVIEW OF THE DEVELOPMENT ACTIVITIES.

A. Development activities for the Project commenced in 2008. Over the past 10 years the CRW has been actively engaging stakeholders by working closely with landowners, tribal and local governments, and federal and state agencies to design the Project. Stakeholders have been approached directly to address concerns with the proposed siting and placement of the Project's infrastructure.

CRW conducted informational events on April 25, 2017 in the town of Gary located in Deuel County, on October 2, 2017 and on November 16, 2017 in the city of Watertown located in Codington County. At these events stakeholders were provided information pertaining to the status of the Project's development, current development activities in process within the Project Area, potential impacts to the Project's layout, and a permitting timeline.

CRW conducted meetings with Grant County officials (the Grant County Commissioners, the Grant County Planning and Zoning Officer, and the Grant County Auditor) on November 8, 2016 and December 20, 2016 as well as on January 17, April 4, June 6 and June 20 in 2017. As a result of these meetings, CRW was able to better understand proposed changes to the Grant County zoning ordinance and how CRW could proactively develop the Project to ensure compliance.

1 CRW met with the Codington County Planner and First District Association of Local
2 Governments on February 9, April 5, May 23, and August 31 of 2017 to discuss the
3 requirements of the Codington County siting ordinances and the county's expectations
4 through the development and construction of the Project.

5
6 Although there is no federal nexus that mandates Tribal consultations, the CRW has
7 voluntarily consulted with the Sisseton Wahpeton Oyate ("SWO") tribe. As a result of
8 these consultations, the SWO tribe and CRW have successfully worked together on the
9 following issues: (1) siting Project infrastructure to avoid direct impacts to lands
10 containing cultural sensitivities; (2) minimizing construction impacts by reducing the size
11 or revising the location of construction easements; and (3) managing access to locations
12 where Project infrastructure is proposed to avoid impacts during the surveying process.

13
14 Project team members have also engaged the local telecommunication company to
15 exchange general information on the Project, such as location of Project Area and
16 proposed Project infrastructure, and obtain documentation from the local
17 telecommunication company on the location of existing utilities within or adjacent to the
18 proposed Project area. The information allow for CRW to continue working with all
19 necessary telecommunication companies to assess areas where interference could
20 potentially occur, make necessary adjustments to minimize the chances of interference,
21 design for underground crossing of existing utilities, as well as implement a mitigation
22 plan to address how interferences would be cured through the operations and

1 maintenance phase of the Project. This collaboration will continue until Project's layout
2 is finalized.

3
4 Additionally, CRW will continue its coordination with the Federal Aviation
5 Administration ("FAA") to: (1) obtain the Determinations of No Hazard ("DNH") and (2)
6 apply for the permitted use of an Aircraft Detection Lighting System ("ADLS"). Per
7 both Codington and Grant County ordinances, towers will be marked as required by the
8 FAA. There will be no lights on the towers other than what is required by the FAA. This
9 restriction will not apply to infrared heating devices used to protect the monitoring
10 equipment.

11
12 The preferred manner of lighting is by using an ADLS. Subject to FAA approval,
13 applicants will install an ADLS within one (1) year of approval by FAA. In the event
14 FAA does not approve the use of an ADLS system, CRW will comply with all lighting
15 and markings otherwise required by FAA. CRW intends to apply for the use of an ADLS
16 upon receiving DNHs from the FAA, which is expected in the second quarter of 2019.

17 CRW will continue this collaborative process with landowners, tribal and local
18 governments, and federal and state agencies throughout the development, construction
19 and operation phases of the Project.

20
21 **Q. PROVIDE THE STATUS OF THE LOCAL CONDITIONAL USE PERMITS.**

22 A. CRW has obtained local Conditional Use Permits ("CUP") for the Project from both the
23 Codington County Board of Adjustment on July 16, 2018 and the Grant County Board of

1 Adjustment on December 17, 2018. The Grant County Board of Adjustment also awarded
2 a CUP approval on March 13, 2016 for a portion of the Project that is located within the
3 f/k/a Cattle Ridge Wind Project Area previously owned by Geronimo Energy, LLC. The
4 Cattle Ridge Wind Project was acquired from Geronimo Energy, LLC on November 22,
5 2017.

6
7 Although some alterations and improvements have been made to the locations of Project
8 infrastructure since the awarded CUPs, CRW will ensure that the Project's final
9 configuration will meet or exceed the setback distances, and noise and shadow flicker
10 thresholds as required by both the Codington and Grant County ordinances.

11
12 **Q. WHAT ARE THE LOCAL SET BACKS REQUIRED IN THE CUP AND DOES**
13 **THE WIND FACILITY COMPLY WITH THE SET BACKS?**

14 A. The Project meets or exceeds all local setback requirements as approved within the
15 Codington and Grant County CUPs. The required setbacks are as follows for each
16 county:

17
18 **Codington County Setback Requirements:**

- 19 • 550' from participating occupied residence, business, church, or school;
20 • 1,500' from non-participating occupied residence, business, church, or school
21 (within all Districts other than Town Districts);
22 • 5,280' from non-participating occupied residence, business, church, or school
23 (within Town Districts);

- 1 • 5,280' from Municipal Boundaries at the time of CUP Application;
- 2 • 110% of the height of the wind turbine from right-of-way of public roads;
- 3 • 110% the height of the wind turbines from any property line;
- 4 • Noise level generated by wind energy system shall not exceed 50 dBA, average A-
- 5 weighted Sound pressure level effects at the property line of existing non-
- 6 participating residences, businesses, and buildings owned and/or maintained by a
- 7 governmental entity; and
- 8 • Flicker at any receptor shall not exceed thirty (30) hours per year within the analysis
- 9 area for all schools, churches, businesses and occupied dwellings within a one (1)
- 10 mile radius of each turbine within the Project.

11

Grant County Setback Requirements:

- 13 • 1,500' from participating residence, business, church, or school, building
- 14 owner and/or operated by a governmental entity;
- 15 • 1,500' from non-participating residence, business, church, or school, building owned
- 16 and/or operated by a governmental entity;
- 17 • 5,280' from municipal boundaries existing at the time of CUP Application;
- 18 • 500' or 110% of the vertical height of the wind turbine, whichever is greater, from
- 19 Public right-of-way;
- 20 • 500' or 110% of the vertical height of the wind turbine, whichever is greater;
- 21 • Noise level shall not exceed 45 dBA, average A-weighted Sound pressure including
- 22 constructive interference effects measured twenty-five (25) feet from the perimeter of

1 the existing non-participating residences, businesses, and buildings owned and/or
2 maintained by a governmental entity;

- 3 • Noise level shall not exceed 50 dBA, average A-weighted Sound pressure including
4 constructive interference effects measured twenty-five (25) feet from the perimeter of
5 participating residences, businesses, and buildings owned and/or maintained by a
6 governmental entity; and
- 7 • Flicker at any receptor shall not exceed thirty (30) hours per year within the analysis
8 area for all schools, churches, businesses and occupied dwellings within a one (1)
9 mile radius of each turbine within the Project.

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13 **Q. WERE TURBINE, ACCESS ROAD, AND COLLECTOR LINE LOCATIONS**
14 **COORDINATED WITH LANDOWNERS?**

- 15 A. Yes. Upon completion of field surveys for natural and cultural resources, the Project's
16 preliminary site plan was created. CRW conducted several meetings with landowners to
17 discuss the proposed placement of project infrastructure and to take into consideration
18 feedback from landowners. CRW incorporated landowner feedback and made revisions
19 to the site plan where feasible to help preserve the use of private lands and maintain
20 compatibility with farming operations. For example, in some cases landowners preferred
21 for CRW to adjust the approaches and/or the alignment of turbine access roads to utilize
22 existing farming approaches off of county roads or to avoid noted acreage that produces
23 higher yields. CRW also adopted changes to county setback requirements during the
24 development process. Shifts to turbine placement were recommended, but could not

1 always be adopted on a landowner's property due to a new setback requirement from a
2 participating landowner's residence or minimum setback requirements from a nearby
3 municipal boundary.
4

5 **BENEFITS OF THE WIND FACILITY**

6 **Q. ARE THERE ANY BENEFITS ASSOCIATED WITH THE WIND FACILITY**
7 **FOR SOUTH DAKOTA?**

8 A. Yes, South Dakota will benefit from the proposed Project. Specifically, the Project will
9 produce the following benefits: (1) the delivery of 300 MWs of zero-emissions wind
10 energy; (2) the creation of approximately 250 temporary construction jobs, which will
11 include employing local workers if qualified and available; (3) supporting the local
12 economy through the purchase of regional goods and services, including increasing the
13 use of hotels and restaurants in Codington and Grant County; (4) the creation of 7–12
14 permanent O&M jobs; (5) increasing sales/use tax and contractor excise tax revenues; (6)
15 the generation of property tax revenues of approximately \$41 million over the contracted
16 life of the Project; (7) land lease payments to landowners of approximately \$40 million
17 over the contracted term of the project; and (8) approximately \$400 million in capital
18 investment within the state of South Dakota.
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22 **Q. HOW MANY HOMES CAN BE SERVED BY THE CLEAN ENERGY THAT THE**
23 **WIND FACILITY WILL DELIVER?**

1 A. The Wind Facility will deliver enough energy to power more than 150,000 homes.

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3 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

4 A. Yes, it does.

5

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2

STATE OF FLORIDA)
) ss
COUNTY OF PALM BEACH)

I, Tyler Wilhelm, being duly sworn on oath, depose and state that I am the witness identified in the foregoing prepared testimony and I am familiar with its contents, and that the facts set forth are true to the best of my knowledge, information and belief.

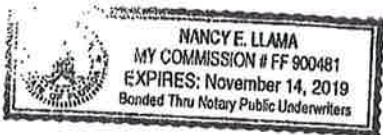

Tyler Wilhelm

Subscribed and sworn to before me this 29 day of January 2019.

SEAL


Nancy E Llama
Notary Public


My Commission Expires _____



3

STATE OF FLORIDA)
) ss
COUNTY OF PALM BEACH)

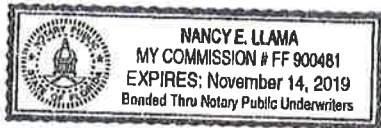
I, Sam Massey, being duly sworn on oath, depose and state that I am the witness identified in the foregoing prepared testimony and I am familiar with its contents, and that the facts set forth are true to the best of my knowledge, information and belief.



Sam Massey

Subscribed and sworn to before me this 29 day of
January 2019.

SEAL





Notary Public

My Commission Expires _____

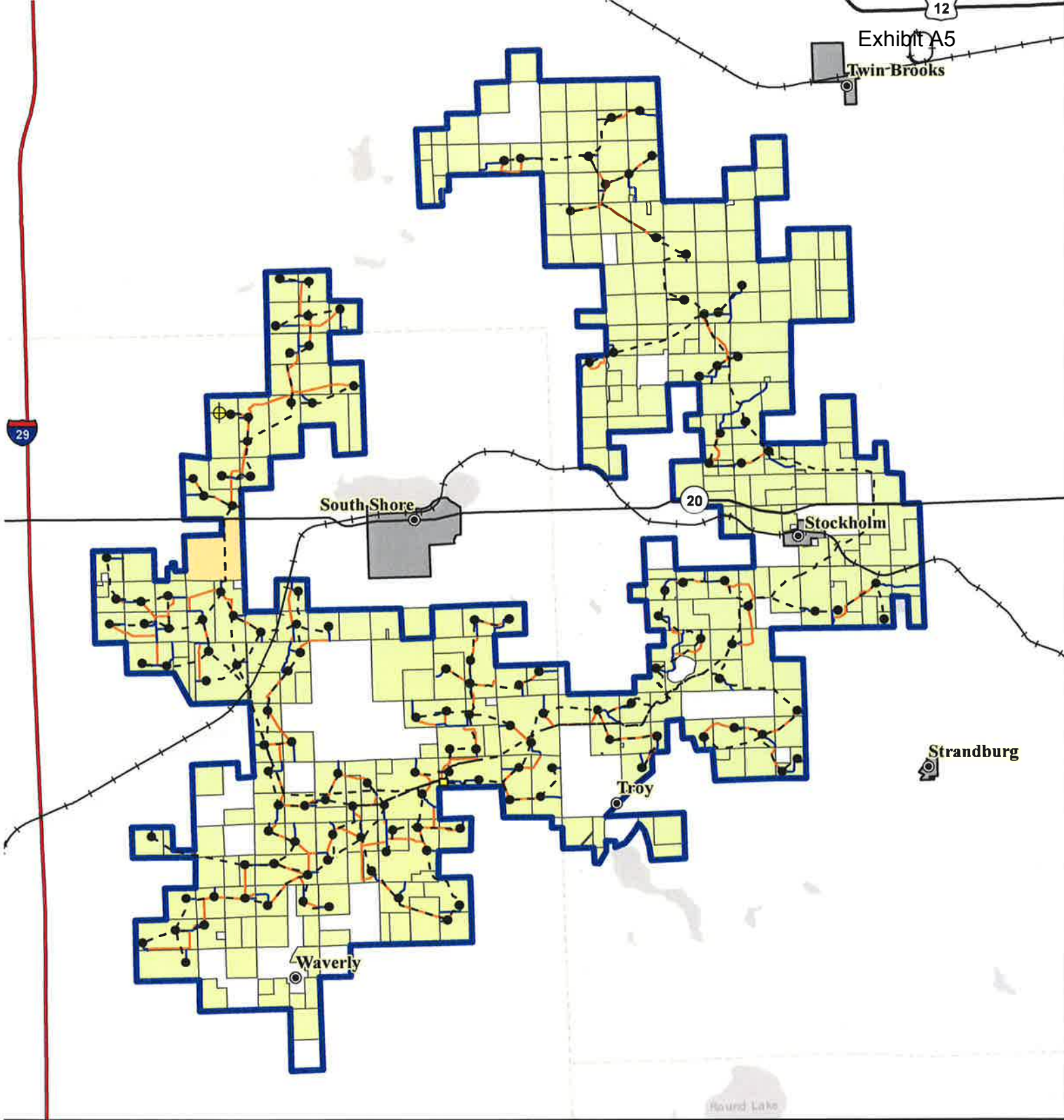
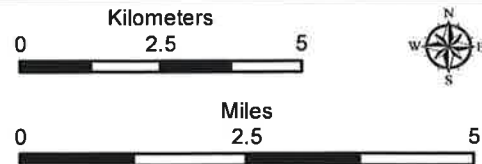


Figure 3. Project Map

Crowned Ridge Wind Farm

- MET Tower
 - Turbine
 - City
 - Proposed Turbine Access Road
 - Collector Line
 - Crane Path
 - Railroad
 - Interstate Highway
 - U.S. Highway
 - State Highway
 - O&M Facility/Substation
 - Town Boundary
 - Project Boundary
- Lease Status**
- Lease, Signed
 - Pending Approval



Base Map: World Light Gray Canvas Base
 Sources: Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community
 Codington and Grant Counties, South Dakota