

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

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**IN THE MATTER OF THE  
APPLICATION BY PREVAILING WIND  
PARK, LLC FOR A PERMIT OF A WIND  
ENERGY FACILITY IN BON HOMME  
COUNTY, CHARLES MIX COUNTY,  
AND HUTCHINSON COUNTY,  
SOUTH DAKOTA, FOR THE  
PREVAILING WIND PARK ENERGY  
FACILITY**

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**PREVAILING WIND PARK, LLC'S  
PROPOSED FINDINGS OF FACT,  
CONCLUSIONS OF LAW AND ORDER**

**EL18-026**

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**BEFORE THE PUBLIC UTILITIES COMMISSION  
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**IN THE MATTER OF THE  
APPLICATION BY PREVAILING  
WIND PARK, LLC FOR A PERMIT OF  
A WIND ENERGY FACILITY IN  
BON HOMME COUNTY, CHARLES  
MIX COUNTY, AND HUTCHINSON  
COUNTY, SOUTH DAKOTA, FOR  
THE PREVAILING WIND PARK  
ENERGY FACILITY**

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**PREVAILING WIND PARK, LLC'S  
PROPOSED FINDINGS OF FACT,  
CONCLUSIONS OF LAW AND ORDER**

**EL18-026**

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**APPEARANCES**

Commissioners Kristie Fiegen, Gary Hanson, and Chris Nelson.

Mollie Smith and Lisa Agrimonti, Fredrikson & Byron, P.A., 200 South Sixth Street, Minneapolis, Minnesota 55402, appeared on behalf of the Applicant, Prevailing Wind Park, LLC (“Prevailing Wind Park” or “Applicant”).

Kristen Edwards and Amanda Reiss, 500 E. Capitol Ave., Pierre, South Dakota 57501, appeared on behalf of the South Dakota Public Utilities Commission Staff (“Staff”).

Reece Almond, Davenport, Evans, Hurwitz & Smith, LLP, 206 West 14th Street, Sioux Falls, South Dakota, 57101, appeared on behalf of Intervenors Gregg Hubner, Marsha Hubner, Lisa Schoenfelder, and Paul Schoenfelder (“Intervenors”).

Sherman Fuerniss appeared on behalf of himself.

Kelli Pazour appeared on behalf of herself.

Karen Jenkins appeared on behalf of herself.

**PROCEDURAL HISTORY**

On May 30, 2018, Prevailing Wind Park filed an Application for an Energy Facility Permit for an up to 219.6 megawatt (“MW”) nameplate capacity wind energy facility to be located in Hutchinson County, Bon Homme County, and Charles Mix County, South Dakota, known as the Prevailing Wind Park Project (“Project”) with the South Dakota Public Utilities Commission (“Commission”).<sup>1</sup> Also on May 30, 2018, Prevailing Wind Park filed the pre-filed

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<sup>1</sup> See Ex. A1 (Application).

direct testimony of James Damon, Bridget Canty, Keith Thorstad, Aaron Anderson, and Chris Howell.

On June 1, 2018, the Commission issued a Notice of Application; Order for and Notice of Public Input Hearing; Notice of Opportunity to Apply for Party Status.

On June 21, 2018, Prevailing Wind Park filed a certificate of service confirming it had sent copies of the Application and Prevailing Wind Park's pre-filed direct testimony to the Bon Homme, Charles Mix, and Hutchinson county auditors.

On June 21, 2018, Prevailing Wind Park filed a Proof of Mailing to affected landowners demonstrating compliance with the requirements of South Dakota Codified Law 49-41B-5.2.

On June 29, 2018, the Commission issued an Order assessing Prevailing Wind Park a filing fee in an amount not to exceed \$348,500, with a minimum filing fee of \$8,000. In the same Order, the Commission further voted unanimously to authorize the executive director to enter into necessary consulting contracts.

On July 12, 2018, a public input hearing was held as scheduled.

On July 19, 2018, an Affidavit of Publication was filed confirming that the Notice of Public Hearing was published in the *Tripp Star Ledger* on June 6, 2018 and June 13, 2018.

On July 19, 2018, an Affidavit of Publication was filed confirming that the Notice of Public Hearing was published in the *Yankton Daily Press and Dakotan* on June 6, 2018 and June 13, 2018.

On July 19, 2018, an Affidavit of Publication was filed confirming that the Notice of Public Hearing was published in the *Scotland Journal* on June 6, 2018 and June 13, 2018.

On July 19, 2018, an Affidavit of Publication was filed confirming that the Notice of Public Hearing was published in the *Avon Clarion* on June 6, 2018 and June 13, 2018.

On July 19, 2018, an Affidavit of Publication was filed confirming that the Notice of Public Hearing was published in *The Wagner Post* on June 6, 2018 and June 13, 2018.

On July 20, 2018, Staff submitted a Motion for Adoption of Procedural Schedule.

The Commission received seven (7) applications for party status by the July 30, 2018 deadline.

On August 2, 2018, Prevailing Wind Park filed a Response to Staff's Motion for Adoption of Procedural Schedule.

On August 8, 2018, Affidavits of Publication were filed confirming that the Notice of Public Hearing was published in the *Tripp Star Ledger* on June 20, 2018 and July 11, 2018.

On August 8, 2018, an Affidavit of Publication was filed confirming that the Notice of Public Hearing was published in the *Yankton Daily Press and Dakotan* on June 20, 2018 and July 11, 2018.

On August 8, 2018, Affidavits of Publication were filed confirming that the Notice of Public Hearing was published in the *Avon Clarion* on June 20, 2018 and July 11, 2018.

On August 8, 2018, an Affidavit of Publication was filed confirming that the Notice of Public Hearing was published in *The Wagner Post* on June 20, 2018 and July 11, 2018.

On August 9, 2018, the Commission issued an Order Granting Party Status and Establishing Procedural Schedule. The Commission granted party status to: Marsha Hubner, Gregg Hubner, Lisa Schoenfelder, Paul Schoenfelder, Charles Mix County, Sherman Fuerniss, and Karen Jenkins.

On August 10, 2018, Prevailing Wind Park filed the pre-filed supplemental testimony of Bridget Canty, Dr. Mark Roberts, Michael MaRous, Daniel Pardo, and Peter Pawlowski.

On August 28, 2018, Kelli Pazour filed an application for party status.

On September 10, 2018, Staff filed the pre-filed testimony of David Hessler, David Lawrence, and Darren Kearney.

On September 10, 2018, Intervenors filed Intervenors' Disclosure of Lay Witnesses and the pre-filed testimony of Richard R. James,<sup>2</sup> Jerry L. Punch,<sup>3</sup> and Mariana Alves-Pereira.<sup>4</sup>

On September 11, 2018, Intervenor Karen Jenkins filed a letter stating that she intends to testify only if called as a witness, but reserves the right to submit testimony.

On September 11, 2018, the Commission issued an Order For and Notice of Evidentiary Hearing.

On September 13, 2018, Intervenors filed a Motion to Have Witnesses Appear Telephonically.

On September 14, 2018, Prevailing Wind Park filed an Answer to the Application for Party Status of Kelli Pazour. On the same day, Staff filed a Response to Late Intervention.

On September 14, 2018, Prevailing Wind Park filed a Motion to Exclude Lay Witness Testimony, to Quash Subpoenas and to Require Further Disclosures.

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<sup>2</sup> At the evidentiary hearing, Mr. James was ruled unqualified to testify regarding health-related impacts. Portions of his pre-filed testimony were stricken accordingly and refiled on October 29, 2018 as Ex. I-1.

<sup>3</sup> At the evidentiary hearing, Dr. Punch was ruled unqualified to testify regarding health-related impacts. Portions of his pre-filed testimony were stricken accordingly and refiled on October 29, 2018 as Ex. I-2.

<sup>4</sup> Intervenors did not offer Dr. Alves-Pereira for live testimony at the evidentiary hearing and withdrew her pre-filed testimony. As such, that testimony is not part of this record.

On September 14, 2018, the Commission issued an Order For and Notice of Ad Hoc Motions Hearing.

On September 19, 2018, Staff filed a Response to Applicant's Motion to Exclude Lay Testimony, to Quash Subpoenas and to Require Further Disclosures.

On September 19, 2018, Prevailing Wind Park filed Applicant's Response to Intervenors' Motion to Have Witnesses Appear Telephonically.

On September 19, 2018, Intervenors filed Intervenors' Response to Applicant's Motion to Exclude Lay Testimony, to Quash Subpoenas and to Require Further Lay Disclosures. Included in this filing was Intervenors' First Amended Disclosure of Lay Witnesses.

On September 20, 2018, Intervenor Karen Jenkins filed a Response to Applicant's Motion to Exclude Lay Testimony, to Quash Subpoenas, and to Require Further Lay Disclosures.

On September 21, 2018, the Commission issued an Order Granting Late Party Status (Kelli Pazour).

On September 26, 2018, Intervenors filed a Subpoena for Testimony at Evidentiary Hearing to Michael Soukup.

On September 26, 2018, Intervenors filed a Subpoena for Testimony at Evidentiary Hearing to Keith Mushitz.

On September 26, 2018, Intervenor Mr. Fuerniss filed the Response of Sherman Fuerniss to Direct Testimonies.

On September 26, 2018, Prevailing Wind Park filed Applicant's Disclosure of Lay Witnesses and the pre-filed rebuttal testimony of Bridget Canty, Dr. Jeffrey Ellenbogen, Aaron Anderson, Dr. Mark Roberts, Peter Pawlowski, Michael MaRous, and Scott Creech.

On October 1, 2018, the Commission issued an Order Granting Motion for Telephonic Testimony and Order Denying Motion to Exclude Lay Testimonies and Quashing Subpoenas.

On October 1, 2018, Intervenors filed a Subpoena for Testimony at Evidentiary Hearing to Jack Soulek.

On October 1, 2018, Prevailing Wind Park filed Applicant's Witness List and Exhibit List and exhibits for hearing.

On October 1, 2018, Staff filed its Witness List and Exhibit List and exhibits for hearing.

On October 1, 2018, Intervenor Mr. Fuerniss filed his exhibits for hearing.

On October 1 and 2, 2018, Intervenors filed their Witness List and Exhibit List and exhibits for hearing.

On October 2, 2018, Intervenor Ms. Jenkins filed her exhibits for hearing.

On October 4, 2018, Prevailing Wind Park filed Applicant's Corrected Exhibit A5.

On October 4, 2018, Intervenors filed the Subpoena for Testimony at Evidentiary Hearing to Eric Elsberry. On the same day, Admissions of Service of Subpoenas were filed for Eric Elsberry and Michael Soukup. Charles Mix County Sheriff Office's Return of Service for Keith Mushitz was also filed.

On October 4, 2018, Intervenor Ms. Jenkins filed Additional Exhibits.

On October 5, 2018, Intervenors filed Intervenors' Corrected Exhibit I-16 and Exhibit I-17.

On October 5, 2018, Intervenor Mr. Fuerniss filed Additional Exhibits.

On October 9, 2018, Intervenors filed Intervenors' Opposition to Having Exhibits I-16 and I-17 be Confidential.

On October 9, 2018, Intervenors filed Exhibits I-16, I-17, I-28, I-29, and I-30.

Also on October 9, 2018, Prevailing Wind Park filed Applicant's Exhibits A3-2, A10-2, A16-R, A20-1, A20-2, A22-3, A24, A27, A28, A29, A30, A31, A32<sup>5</sup>, and A33. Staff filed Exhibit S5.

On October 10 and 12, 2018, Prevailing Wind Park filed Exhibits A34, A35, A36, A37, A38, A39, A40, and A41. Prevailing Wind Park also filed an updated map, designated Attachment 4-2, to Intervenors' Exhibit I-29.<sup>6</sup> Intervenors also filed Exhibits I-31, I-32, I-33, I-34, I-35, I-36, and I-37.

The evidentiary hearing was held before the Commission on October 9-12, 2018 in Pierre, South Dakota.

On October 29, 2018, Prevailing Wind Park filed Exhibit A42, which was pre-admitted at the evidentiary hearing on October 12, 2018.

Also on October 29, 2018, in accordance with the Commission's decision regarding the striking of portions of Intervenors' Exhibits I-1 and I-2 and of the transcript from the evidentiary hearing on October 12, 2018, the hearing examiner filed the redacted versions of Intervenors' Exhibits I-1 and I-2 and the redacted transcript of the evidentiary hearing on October 12, 2018.

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<sup>5</sup> Exhibit A32 is Applicant's and Staff's Proposed Conditions. Exhibit A33 were Applicant's Proposed Conditions relating to sound (Condition 27) and turbine flexibility (Condition 29). Applicant and Staff subsequently agreed to the turbine flexibility Condition 29 and to add meteorological towers to Condition 24, which were incorporated into Applicant's and Staff's Revised Joint Recommended Conditions attached to Applicant's brief as **Attachment A**. Applicant's Proposed Sound and Charles Mix Conditions is attached to Applicant's brief as **Attachment B**.

<sup>6</sup> This map is attached to Applicant's brief as **Attachment C**.

Having considered the evidence of record, applicable law, and the briefs and arguments of the parties, the Commission makes the following Findings of Fact, Conclusions of Law, and Order:

## **FINDINGS OF FACT**

### **I. PROCEDURAL FINDINGS.**

1. The Procedural History set forth above is hereby incorporated by reference in its entirety in these Procedural Findings. The procedural findings set forth in the Procedural History are a substantially complete and accurate description of the material documents filed in this docket and the proceedings conducted and decisions rendered by the Commission in this matter.

### **II. PARTIES.**

2. Prevailing Wind Park, LLC is a South Dakota limited liability company and a wholly owned subsidiary of sPower Development Company, LLC (“sPower”).<sup>7</sup>

3. sPower is an independent renewable energy company based in Salt Lake City, Utah. sPower is the largest private owner of operating solar assets in the United States. sPower owns and operates a portfolio of solar and wind assets greater than 1.3 gigawatts (“GW”) and has a development pipeline of more than 10 GW.<sup>8</sup>

4. Intervenors Gregg and Marsha Hubner are landowners within the Project area.

5. Intervenors Paul and Lisa Schoenfelder are landowners within the Project area.

6. Intervenor Sherman Fuerniss is a landowner within the Project area.

7. Intervenor Karen Jenkins is a landowner within the Project area.

8. Intervenor Kelli Pazour resides adjacent to the Project area.

9. Staff fully participated as a party in this matter, in accordance with SDCL 49-41B-17.

### **III. PROJECT DESCRIPTION.**

10. The proposed Project is an up to 219.6 MW wind energy conversion facility located in Hutchinson, Bon Homme, and Charles Mix counties, South Dakota. The proposed Project includes up to 61 wind turbine generators, access roads to each turbine, underground 34.5-kilovolt (“kV”) electrical collection system, including an occasional aboveground junction box, connecting the turbines to the Project collector substation, underground fiber-optic cable for turbine communications co-located with the collector lines, a 34.5-kV to 115-kV collector substation, up to four permanent meteorological (“MET”) towers, an operations and maintenance

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<sup>7</sup> Ex. A1 at 1-1 (Application).

<sup>8</sup> Ex. A1 at 1-1 (Application).



“O&M”) facility, and additional temporary construction areas, including crane paths, public road improvements, a laydown yard, and a concrete batch plant(s) (as needed).<sup>9</sup>

11. The Project would interconnect with Western Area Power Administration’s (“WAPA’s”) existing Utica Junction Substation, located approximately 27 miles east of the Project. The Applicant is proposing to construct a new 115 kV gen-tie line in Bon Homme and Yankton counties from the Project collector substation to the Utica Junction Substation. The gen-tie line is not under the jurisdiction of the Commission and will be permitted in Bon Homme and Yankton counties.<sup>10</sup> A 115-/230-kV substation would be constructed near the point of interconnection to step up the voltage to match that of WAPA’s 230 kV interconnection facilities.<sup>11</sup>

12. The Project is located on approximately 50,364 acres of land in Hutchinson, Charles Mix, and Bon Homme counties, South Dakota (“Project Area”).<sup>12</sup>

13. The current estimated capital cost of the Project is approximately \$297 million based on indicative construction and wind turbine pricing cost estimates. This estimate includes lease acquisition; permitting, engineering, procurement, and construction of turbines, access roads, underground electrical collector system, Project collector substation, interconnection facilities, O&M facility, supervisory control and data acquisition (“SCADA”) system, and MET towers; and project financing. Capital cost estimates could fluctuate for the Project, dependent on which turbine model is ultimately used, materials and labor costs, and interconnection costs.<sup>13</sup>

14. Prevailing Wind Park provided evidence to support the need for turbine model flexibility.<sup>14</sup> The proposed turbine model that would be utilized for the Project is the GE 3.8-137, a 3.8 MW turbine with a 111.5-meter hub height and 137-meter rotor diameter (“RD”).<sup>15</sup> For up to nine turbines, Prevailing Wind Park requested the option to use a GE 2.3 MW turbine, which has an 80-meter hub height and 116 meter RD.<sup>16</sup> Prevailing Wind Park demonstrated that this turbine model flexibility is necessary in case use of the smaller turbine model is required to qualify for the production tax credit.<sup>17</sup> Further, Prevailing Wind Park has committed to the process outlined in Condition 29 of Applicant’s and Staff’s Revised Joint Recommended Conditions for addressing the change in turbine model and demonstrating compliance with all of the conditions of the permit for the Project.<sup>18</sup>

15. All turbines will be constructed within the Project Area consistent with the configuration presented in the updated map labeled Attachment 4-2 to Applicant’s Responses to

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<sup>9</sup> Ex. A1 at 1-1 (Application); *see also* Ex. A1 at § 8.7 (Application).

<sup>10</sup> Ex. A1 at 1-1 (Application).

<sup>11</sup> Ex. A1 at 8-7 (Application).

<sup>12</sup> Ex. A1 at 1-1, 8-1 (Application).

<sup>13</sup> Ex. A1 at 7-1 (Application).

<sup>14</sup> *See* Ex. A1 at 8-3 (Application).

<sup>15</sup> Ex. A7 at 2 (Pawlowski Rebuttal).

<sup>16</sup> Evid. Hrg. Tr. at 209 (Pawlowski).

<sup>17</sup> Evid. Hrg. Tr. at 209, 254-55 (Pawlowski).

<sup>18</sup> Applicant’s and Staff’s Revised Joint Recommended Condition 29.

Intervenor's Fourth Set of Data Requests,<sup>19</sup> and subject to all commitments, conditions, and requirements of this Order.

16. sPower currently owns Prevailing Wind Park and is overseeing development of the Project. Prevailing Wind Park will own, manage, and operate the Project.<sup>20</sup>

17. Prevailing Wind Park presented evidence of consumer demand and need for the Project.<sup>21</sup> Prevailing Wind Park has entered into a 30-year Power Purchase Agreement ("PPA") with a South Dakota load serving entity. The output from the facility, which could annually generate up to 933,116 megawatt-hours ("MWh"), will be used to meet the needs for South Dakota residential, commercial, and industrial customers.<sup>22</sup> The proposed Project would provide a new source of low cost energy in South Dakota and help the country move towards the goal of energy independence, while reducing pollution and carbon emissions.<sup>23</sup>

18. With regard to micro siting, Prevailing Wind Park provided evidence to support the need for turbine and associated facility flexibility.<sup>24</sup> With respect to turbine flexibility, Prevailing Wind Park and Staff agreed to the turbine flexibility and "material change" provisions set forth in Applicant's and Staff's Revised Joint Recommended Condition 23.<sup>25</sup> With respect to the access roads, the collector system, O&M facility, Project substation, temporary facilities, MET towers, and other facilities, Prevailing Wind Park and Staff agreed to Condition 24 of Applicant's and Staff's Revised Joint Recommended Conditions.<sup>26</sup>

19. The record demonstrates that Prevailing Wind Park has made appropriate and reasonable plans for decommissioning.<sup>27</sup>

20. With respect to financial security for decommissioning, Staff and Prevailing Wind Park have agreed to Condition 40 of Applicant's and Staff's Revised Joint Recommended Conditions, which provides for a decommissioning escrow account.<sup>28</sup>

21. The record demonstrates that Prevailing Wind Park has provided adequate information on potential cumulative impacts and that the Project will not have a significant impact.<sup>29</sup>

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<sup>19</sup> Attachment C to Applicant's Brief.

<sup>20</sup> Ex. A1 at 5-1 (Application).

<sup>21</sup> See Ex. A1 at 6-1, § 6.1 (Application).

<sup>22</sup> Ex. A1 at 6-1 (Application).

<sup>23</sup> Ex. A1 at 6-5 (Application).

<sup>24</sup> See Ex. A1 at 8-2 – 8-3 (Application).

<sup>25</sup> Applicant's and Staff's Revised Joint Recommended Condition 23.

<sup>26</sup> Applicant's and Staff's Revised Joint Recommended Condition 24.

<sup>27</sup> See Ex. A1 at Ch. 24.0 (Application); Ex. A6 at 6 (Pawlowski Supplemental Direct); Ex. A7 at 4-5 (Pawlowski Rebuttal); Ex. A11 (Pardo Supplemental Direct); Ex. A11-2 (Decommissioning Cost Analysis).

<sup>28</sup> Applicant's and Staff's Revised Joint Recommended Condition 40.

<sup>29</sup> See, e.g., Ex. A1 at Ch. 22.0 (Application).

#### IV. FACTORS FOR AN ENERGY FACILITY PERMIT.

22. Under the SDCL 49-41B-22, the Commission must find:

- (1) The proposed facility will comply with all applicable laws and rules;
- (2) The facility will not pose a threat of serious injury to the environment nor to the social and economic condition of inhabitants or expected inhabitants in the siting area;
- (3) The facility will not substantially impair the health, safety or welfare of the inhabitants; and
- (4) The facility will not unduly interfere with the orderly development of the region with due consideration having been given the views of governing bodies of affected local units of government.

23. In addition, SDCL 49-41B-25 provides that the Commission must make a finding that the construction of the facility meets all of the requirements of Chapter 49-41B.

24. There is sufficient evidence on the record for the Commission to assess the proposed Project using the criteria set forth above.

#### V. SATISFACTION OF REQUIREMENTS FOR ISSUANCE OF AN ENERGY FACILITY PERMIT.

##### A. The proposed facility will comply with all applicable laws and rules.

25. The evidence submitted by Prevailing Wind Park demonstrates that the Project will comply with applicable laws and rules.<sup>30</sup> Neither Staff nor Intervenors have asserted otherwise or submitted evidence to the contrary.

26. Construction of the Project meets all of the requirements of Chapter 49-41B.

##### B. The facility will not pose a threat of serious injury to the environment nor to the social and economic condition of inhabitants or expected inhabitants in the siting area.

###### 1. Environment.

27. The evidence demonstrates that the Project does not pose a threat of serious injury to the environment in the Project Area and that Prevailing Wind Park has adopted reasonable avoidance and minimization measures, as well as commitments, to further limit potential

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<sup>30</sup> See Ex. A7 at 2-3 (Pawlowski Rebuttal); Ex. A6 at 3 (Pawlowski Supplemental Direct); Ex. A1 at §§ 27.1, 27.4 (Application); see also, e.g., Ex. A1 at 9-3, 9-4, 12-6, 15-7 (Application).

environmental impacts.<sup>31</sup> South Dakota Game, Fish and Parks Department (“GFP”) did not identify any concerns unique to the Project.<sup>32</sup>

28. Construction of the Project will not result in significant impacts on geological resources. The risk of seismic activity in the vicinity of the Project Area is low according to data from the U.S. Geological Survey (“USGS”).<sup>33</sup>

29. Prevailing Wind Park has demonstrated that it will minimize and/or avoid impacts to soil resources.<sup>34</sup> The majority of impacts will be temporary and related to construction activities.<sup>35</sup> Permanent impacts associated with operation of the Project will be up to 45 acres, which is less than 0.1 percent of the Project Area.<sup>36</sup> Prevailing Wind Park will implement various measures during construction and restoration to minimize impacts to the physical environment, including segregating topsoil and subsoil, use of erosion and sediment control during and after construction, noxious weed control, and reseeded of disturbed areas.<sup>37</sup>

30. The Project is not anticipated to have material impacts on existing air and water quality.<sup>38</sup>

31. Prevailing Wind Park has demonstrated that it will minimize and/or avoid impacts to hydrology.<sup>39</sup> The record demonstrates that Prevailing Wind Park has minimized impacts to wetlands and water bodies.<sup>40</sup> The Project is not anticipated to have long-term impacts on groundwater resources.<sup>41</sup> The Project is not anticipated to impact floodplains. There are no FEMA-mapped floodplains within the Project Area and the nearest mapped floodplains to the Project area are along Choteau Creek, over 1 mile southwest of the Project Area.<sup>42</sup> No turbines are located within wetlands, and Project facilities would potentially result in permanent impacts to two wetlands (0.0042 acre and 0.0002 acre of impacts, respectively) and would cross three intermittent streams (62.4 linear feet of stream segments).<sup>43</sup>

32. The record demonstrates that Prevailing Wind Park has minimized impacts to vegetation.<sup>44</sup> Permanent impacts associated with operation of the Project would be up to 45 acres (predominantly cropland and grassland/pasture), which is less than 0.1 percent of the Project Area.<sup>45</sup>

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<sup>31</sup> See, e.g., Ex. A1 at Ch. 10.0, 17.0 (Application); see also Ex. A1 at §§ 11.1.2, 11.2.2, 12.1.2, 12.2.2, 13.1.2, 13.2.2, 13.3.2, 13.4.2, 14.3, 18.2 (Application).

<sup>32</sup> Ex. S1 at 8 (Kearney Direct); Evid. Hrg. Tr. at 1119 (Kearney).

<sup>33</sup> Ex. A1 at 11-3 (Application).

<sup>34</sup> See Ex. A1 at §§ 11.2.2 (Application).

<sup>35</sup> See Ex. A1 at 11-9 (Application).

<sup>36</sup> Ex. A1 at 3-2, 11-9 (Application).

<sup>37</sup> Ex. A1 at 11-9 – 11-10 (Application).

<sup>38</sup> See Ex. A1 at Ch. 17.0, § 18.2 (Application).

<sup>39</sup> See Ex. A1 at §§ 12.1.2, 12.2.2 (Application).

<sup>40</sup> See Ex. A1 at § 13.3.2 (Application).

<sup>41</sup> See Ex. A1 at § 12.1.2 (Application).

<sup>42</sup> See Ex. A1 at §§ 12.2.1.4, 12.2.2.3 (Application).

<sup>43</sup> Ex. A1 at 13-6 (Application).

<sup>44</sup> See Ex. A1 at § 13.1.2 (Application).

<sup>45</sup> Ex. A1 at 13-3 (Application).

33. Prevailing Wind Park coordinated with GFP to avoid and minimize impacts to potentially untilled grasslands. Based on the 2018 desktop review of potential untilled grassland areas, 1 of the 63 turbine locations is located in untilled grassland. Only approximately 1 acre of long-term Project disturbance would occur in potential untilled grasslands.<sup>46</sup> Permanent habitat loss due to construction of wind turbines would be minimal across the Project Area and localized.<sup>47</sup>

34. Prevailing Wind Park will reseed temporarily disturbed uncultivated areas with certified weed-free seed mixes to blend in with existing vegetation.<sup>48</sup>

35. Prevailing Wind Park has conducted numerous wildlife studies and surveys for the Project to assess existing use, identify potential impacts, and incorporate appropriate avoidance and minimization measures.<sup>49</sup> Prevailing Wind Park consulted with the USFWS and GFP to seek input on wildlife resources potentially occurring within the Project Area and to seek guidance on the appropriate studies to evaluate risk and inform development of impact avoidance and minimization measures for the Project.<sup>50</sup> Prevailing Wind Park followed the processes outlined in the USFWS Land-Based Wind Energy Guidelines (“WEG”), Eagle Conservation Plan Guidance (“ECPG”), and the SD Siting Guidelines for developing, construction, and operation of wind energy projects.<sup>51</sup> In addition, Prevailing Wind Park prepared a Bird and Bat Conservation Strategy (“BBCS”) in accordance with the WEG, which includes strategies for mitigating risks to avian and bat species during construction and operation of the Project.<sup>52</sup>

36. Construction of the Project may have impacts on wildlife species primarily as a result of habitat disturbance. However, following construction, all areas of temporary disturbance will be reclaimed with vegetation consistent with the surrounding vegetation types.<sup>53</sup> The Project was designed to avoid and minimize displacement of wildlife by minimizing the Project’s footprint in undisturbed areas.<sup>54</sup> Permanent habitat loss due to construction of wind turbines would be minimal across the Project Area and localized.<sup>55</sup>

37. The record demonstrates that, while the Project may directly impact birds and bats, avian fatalities due to the Project are anticipated to be low and to not have significant population-level impacts.<sup>56</sup> To prevent potential bird strikes with electric lines, collector lines will be buried underground and the Project will incorporate other avian safe practices consistent with guidelines from the Avian Power Line Interaction Committee.<sup>57</sup> Based on available data, bat fatalities and the degree to which bat species would be affected by the Project would be

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<sup>46</sup> Ex. A1 at 13-4 (Application).

<sup>47</sup> Ex. A1 at 13-17 (Application).

<sup>48</sup> Ex. A1 at 3-4 (Application).

<sup>49</sup> See Ex. A1 at Table 2-1, § 13.4 (Application).

<sup>50</sup> See Ex. A1 at § 13.4 (Application).

<sup>51</sup> Ex. A1 at 13-7 (Application).

<sup>52</sup> Ex. A1 at Appendix L (Application).

<sup>53</sup> Ex. A1 at 13-19 (Application).

<sup>54</sup> Ex. A1 at 13-19 (Application).

<sup>55</sup> Ex. A1 at 13-17 (Application).

<sup>56</sup> Ex. A1 at 13-19 (Application).

<sup>57</sup> Ex. A1 at 13-19 (Application).

within the average range of bat mortalities found throughout the U.S.<sup>58</sup> The record demonstrates that the Project was designed to avoid and minimize impacts to bats. The Project Area was shifted to the north and away from the Missouri River, where more woodland habitat and higher bat populations are present. The Project has been sited in an area and designed in a manner to avoid and minimize impacts to birds and bats.<sup>59</sup>

38. Prevailing Wind Park conducted two years of pre-construction avian surveys.<sup>60</sup> Those surveys indicate that avian impacts from the Project are anticipated to be low.<sup>61</sup> Further, Prevailing Wind Park has committed to two years of post-construction avian mortality monitoring.<sup>62</sup>

39. Prevailing Wind Park has demonstrated that it will minimize and/or avoid impacts to federal- and State-listed species.<sup>63</sup> Only five federal- or State-listed threatened and/or endangered species have the potential to occur in the Project Area during some portion of the year: federally endangered interior least tern and whooping crane; and federally threatened piping plover, red knot, and northern long-eared bat.<sup>64</sup> The interior least tern, red knot, whooping crane, and piping plover could migrate through the Project Area during the spring and fall but are otherwise not expected to occur in the Project Area.<sup>65</sup> The northern long-eared bat is the only State and federally listed bat with the potential to occur within the area.<sup>66</sup> Impacts on federally-listed species due to Project construction and operations are anticipated to be minimal due to the low likelihood or frequency of species' presence in the Project Area and implementation of appropriate species-specific conservation measures.<sup>67</sup>

40. Prevailing Wind Park has demonstrated that it will minimize and/or avoid impacts to whooping cranes.<sup>68</sup> Prevailing Wind Park conducted a Whooping Crane Habitat Assessment in 2016 that included analysis of the Project Area.<sup>69</sup> The Project is located within an area where 10 percent or less of whooping crane migration occurs.<sup>70</sup> There have been no confirmed whooping crane sightings within the Project Area as of spring 2018.<sup>71</sup> Further, to date, no whooping crane has died as the result of a wind turbine.<sup>72</sup> Prevailing Wind Park will comply with applicable avoidance, minimization, and mitigation measures specified in the Upper Great Plains Wind Energy Final Programmatic Environmental Impact Statement ("PEIS"), prepared jointly by WAPA and the USFWS.<sup>73</sup> As part of the PEIS, Prevailing Wind Park has committed to a curtailment program whereby if a whooping crane is sighted within two miles of the Project,

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<sup>58</sup> Ex. A1 at 13-20 (Application).

<sup>59</sup> See Ex. A1 at 13-19 – 13-21 (Application); Ex. A12 at 13 (Canty Direct).

<sup>60</sup> Ex. A1 at 13-14 (Application); *see also* Ex. A1 at Appendices F and G (Application).

<sup>61</sup> Ex. A1 at 13-19 (Application).

<sup>62</sup> Applicant's and Staff's Revised Joint Recommended Condition 34.

<sup>63</sup> See Ex. A1 at §§ 13.4.2.4, 14.3 (Application).

<sup>64</sup> Ex. A1 at 3-2 – 3-3, 13-10 – 13-12, 13-18 (Application).

<sup>65</sup> Ex. A1 at 3-2, § 13.4.2.1 (Application); *see also* Ex. A1 at Table 13-4 (Application).

<sup>66</sup> Ex. A1 at 13-16 (Application).

<sup>67</sup> See Ex. A1 at §§ 13.4.2, 14.2, 14.3 (Application); Ex. A12 at 11-13 (Canty Direct).

<sup>68</sup> See Ex. A1 at 3-2 – 3-3, 13-16, 13-18, 27-4 (Application); Evid. Hrg. Tr. at 432 (Canty).

<sup>69</sup> Ex. A1 at 13-16 (Application); Ex. A1 at Appendix K (Application).

<sup>70</sup> Evid. Hrg. Tr. at 467 (Canty).

<sup>71</sup> Ex. A1 at 3-2 – 3-3 (Application).

<sup>72</sup> Evid. Hrg. Tr. at 467-68 (Canty).

<sup>73</sup> Ex. A1 at 13-8 (Application).

the turbines will be shut down until the cranes leave the area.<sup>74</sup> There will be two ways to stop operation of the turbines. First, monitors may call the operations center and ask them to shut the turbines down. Second, each monitor will have a laptop or tablet equipped with software that will allow him or her to shut down the turbines remotely if a whooping crane is sighted.<sup>75</sup> This software has been successfully implemented and is used by sPower on another wind project.<sup>76</sup> Additionally, Prevailing Wind Park has committed to monitoring during the spring and fall migration periods.<sup>77</sup> Prevailing Wind Park is coordinating with USFWS regarding the specific timing of that monitoring and has also engaged a consultant to assist in that process.<sup>78</sup>

41. Overall, there is a low level of risk for potential bald eagle impacts at the site.<sup>79</sup> Prevailing Wind Park conducted eagle nest surveys in 2015 and 2016.<sup>80</sup> No eagle nests were identified within the Project Area, and the nearest occupied bald eagle nest to the Project Area is located approximately 0.5 miles from the current Project Area boundary. The nest is located approximately two miles from the nearest proposed turbine.<sup>81</sup> Prevailing Wind Park conducted an updated search through the Natural Heritage Program of known bald eagle nest sites which identified this same single active nest.<sup>82</sup> In addition, Prevailing Wind Park has agreed to a number of avian-related impact minimization and avoidance measures, including: conducting post-construction avian mortality monitoring for two years; and implementing the BBCS developed in accordance with the USFWS WEG to minimize impacts to avian and bat species during construction and operation of the Project.<sup>83</sup>

42. Prevailing Wind Park has demonstrated that it will minimize and/or avoid impacts to aquatic ecosystems.<sup>84</sup> The federally- and state-listed aquatic species with potential to occur in or near the Project are not anticipated to be affected by the Project.<sup>85</sup>

43. Prevailing Wind Park has demonstrated that it will minimize and/or avoid impacts to land use.<sup>86</sup> The Project will not displace existing residences or businesses.<sup>87</sup> Areas disturbed due to construction that would not host Project facilities would be re-vegetated with vegetation types matching the surrounding agricultural landscape. Agricultural uses may continue within the Project Area during construction and operation.<sup>88</sup>

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<sup>74</sup> Evid. Hrg. Tr. at 432 (Canty).

<sup>75</sup> Evid. Hrg. Tr. at 1142 (Pawlowski).

<sup>76</sup> Evid. Hrg. Tr. at 461-62 (Canty); Evid. Hrg. Tr. at 1142 (Pawlowski).

<sup>77</sup> Evid. Hrg. Tr. at 432 (Canty).

<sup>78</sup> Evid. Hrg. Tr. at 468 (Canty).

<sup>79</sup> See Ex. A1 at 27-3 – 27-4 (Application).

<sup>80</sup> Ex. A1 at 2-2 (Application).

<sup>81</sup> Ex. A1 at 13-13, 27-3 – 27-4 (Application).

<sup>82</sup> Evid. Hrg. Tr. at 470-71 (Canty).

<sup>83</sup> See Ex. A12 at 13 (Canty Direct); Applicant's and Staff's Revised Joint Recommended Conditions 34 and 35.

<sup>84</sup> See Ex. A1 at § 14.3 (Application).

<sup>85</sup> See Ex. A1 at § 14.3 (Application).

<sup>86</sup> See Ex. A1 at §§ 15.1.2, 20.2.2 (Application).

<sup>87</sup> Ex. A1 at 15-3 (Application).

<sup>88</sup> Ex. A1 at 15-3 (Application).

44. Prevailing Wind Park has demonstrated that it will minimize and/or avoid impacts to recreation.<sup>89</sup> No Project facilities would be placed on USFWS Waterfowl Production Areas, GFP Game Production Areas, or GFP Walk-In Areas.<sup>90</sup>

45. Prevailing Wind Park has demonstrated that it will minimize and/or avoid impacts to conservation easements and publicly-managed lands.<sup>91</sup> Prevailing Wind Park coordinated with the USFWS to identify and avoid areas subject to USFWS easements within the Project Area. The Project has been designed such that no Project facilities (e.g., turbines, collector lines, access roads) would be placed on USFWS wetland or grassland easements, and thus, no direct impacts to these easement areas would occur.<sup>92</sup> As noted above, the Project will also avoid direct impacts to Game Production Areas and Waterfowl Production Areas.<sup>93</sup>

46. Prevailing Wind Park has demonstrated that it will minimize and/or avoid impacts to visual resources.<sup>94</sup> In accordance with Federal Aviation Administration (“FAA”) regulations, the turbine towers would be painted off-white to reduce potential glare and minimize visual impact.<sup>95</sup> No scenic resources with sensitive viewsheds are located within the Project Area. The nearest scenic resources to the Project Area are located approximately 12 and 13 miles away from the Project Area. At these distances, adverse visual impacts from construction or operation of the Project are not anticipated.<sup>96</sup> Additionally, Prevailing Wind Park will install and use an Aircraft Detection Lighting System (“ADLS”) if approved by the FAA for use for the Project, thereby reducing visual impacts.<sup>97</sup> Furthermore, the FAA has issued a Determination of No Hazard to Air Navigation for each of the Project’s proposed turbine sites.<sup>98</sup>

47. Prevailing Wind Park has demonstrated that it will minimize and/or avoid impacts to cultural resources.<sup>99</sup> Prevailing Wind Park conducted multiple cultural resource surveys to identify cultural resources within the Project Area.<sup>100</sup> Prevailing Wind Park conducted a Level I Cultural Resources Records Search for the Project Area and one-mile buffer area in April 2018. Prevailing Wind Park used this information to inform the siting of Project facilities and to identify areas that have a higher likelihood for containing intact cultural resources eligible for listing on the National Register of Historic Places (“NRHP”).<sup>101</sup> Prevailing Wind Park also completed a historical/architectural survey.<sup>102</sup> A draft report summarizing the results is expected by mid-November and will be submitted to the State Historic Preservation Office (“SHPO”) for review and concurrence.<sup>103</sup> Sites determined to be NRHP-eligible will be avoided by the Project.

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<sup>89</sup> See Ex. A1 at § 15.2.2 (Application).

<sup>90</sup> Ex. A1 at 15-4 (Application).

<sup>91</sup> See Ex. A1 at § 15.2 (Application).

<sup>92</sup> Ex. A1 at 15-4 (Application).

<sup>93</sup> Ex. A1 at 15-4 (Application).

<sup>94</sup> See Ex. A1 at § 15.4.2 (Application).

<sup>95</sup> Ex. A1 at 15-13 (Application).

<sup>96</sup> Ex. A1 at 15-13 (Application).

<sup>97</sup> Ex. A6 at 5 (Pawlowski Supplemental Direct).

<sup>98</sup> Ex. A6 at 5 (Pawlowski Supplemental Direct).

<sup>99</sup> See Ex. A1 at § 20.5.2 (Application); Ex. A12 at 14-16 (Canty Direct); Ex. A13 at 3-43 (Canty Supplemental Direct); Ex. A14 at 2-3 (Canty Rebuttal).

<sup>100</sup> See, e.g., Ex. A1 at § 20.5.1 (Application); Ex. A12 at 14-15 (Canty Direct).

<sup>101</sup> See Ex. A1 at § 20.5 (Application).

<sup>102</sup> Ex. A14 at 3 (Canty Rebuttal).

<sup>103</sup> Ex. A14 at 3 (Canty Rebuttal).



If avoidance is not practicable, Prevailing Wind Park will work with WAPA and SHPO to develop appropriate minimization or mitigation measures.<sup>104</sup> Further, Prevailing Wind Park has agreed to develop an unanticipated discovery plan for cultural resources.<sup>105</sup>

48. WAPA is preparing an Environmental Assessment (“EA”) for the Project interconnection in accordance with the applicable requirements and standards of the National Environmental Policy Act (“NEPA”). The proposed interconnection of the Project to WAPA’s transmission system is a Federal action under NEPA.<sup>106</sup> As part of the NEPA process for approval of the WAPA interconnection, Prevailing Wind Park is coordinating with WAPA to support WAPA’s compliance with Section 106 of the National Historic Preservation Act of 1966, as amended. WAPA is consulting with SHPO and interested tribes as part of the Section 106 compliance process.<sup>107</sup> Prevailing Wind Park expects that WAPA will issue the draft EA in the fall of 2018.<sup>108</sup>

49. Staff and Prevailing Wind Park have agreed upon Conditions 12 through 14 regarding cultural resources.<sup>109</sup>

## 2. Social and Economic.

50. Prevailing Wind Park acquired the Project in 2017 from Prevailing Winds, LLC, which was formed by a group of local investors who sought to create additional sources of income for area landowners and economic growth for the local communities through wind energy.<sup>110</sup> Since its October 2017 acquisition of the assets and development rights to the Project, Prevailing Wind Park has undertaken extensive development activities, consisting of landowner outreach and easement acquisition, detailed studies of resources in the Project Area, coordination with resource agencies, and design and refinement of the Project configuration.<sup>111</sup> Since acquiring the Project, Prevailing Wind Park negotiated additional lease agreements for approximately 40 percent of the total Project acreage.<sup>112</sup> Prevailing Wind Park has obtained all of the private land rights necessary to construct the Project.<sup>113</sup> The identification of the final Project site was primarily driven by: superior wind resources because of elevation, proximity and direct access to available transmission capacity, cost efficiency, low population density near the Project Area, and the Project’s ability to avoid or minimize potential adverse environmental impacts.<sup>114</sup> Prevailing Wind Park also considered input from agencies and the public in siting the Project, specifically: distance from the Missouri River, where higher populations of many plant and animal species are present; distance from the Whooping Crane Migration Corridor; state and Federal lands within or near the Project Area; potentially undisturbed grasslands, wetlands, and other habitats within or near Project Area; and an existing eagle nest located near

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<sup>104</sup> Ex. A1 at 20-14 (Application); Ex. A12 at 16 (Canty Direct).

<sup>105</sup> Applicant’s and Staff’s Revised Joint Recommended Condition 13.

<sup>106</sup> Ex. A12 at 7 (Canty Direct).

<sup>107</sup> Ex. A13 at 3 (Canty Supplemental Direct).

<sup>108</sup> Ex. A14 at 3 (Canty Rebuttal).

<sup>109</sup> Applicant’s and Staff’s Revised Joint Recommended Conditions 12 through 14.

<sup>110</sup> Ex. A1 at 2-1 (Application); Ex. A6-3 at 6 (Damon Direct); *see also* Ex. A1 at § 9.1 (Application).

<sup>111</sup> Ex. A1 at 2-1 (Application).

<sup>112</sup> Evid. Hrg. Tr. at 215, 226 (Pawlowski).

<sup>113</sup> Ex. A1 at 2-1 (Application).

<sup>114</sup> *See* Ex. A1 at § 9.1 (Application).

the Project Area.<sup>115</sup> The proposed configuration of Project facilities also reflects an optimal configuration to best capture wind energy within the Project Area, while avoiding impacts to residences, known cultural resources, wetlands, potentially undisturbed grasslands, and sensitive species and their habitats.<sup>116</sup>

51. In prior contested siting dockets, the Commission has considered the following socioeconomic issues in evaluating whether a project would pose a threat of serious injury to the social and economic condition: temporary and permanent jobs; tax revenue; and impacts on commercial, agricultural, and industrial sectors, housing, land values, labor market, health facilities, energy, sewage and water, solid waste management facilities, fire protection, law enforcement, recreational facilities, schools, transportation facilities, and other community and government facilities.<sup>117</sup>

52. The record demonstrates that the Project will not pose a threat of serious injury to the social and economic condition.<sup>118</sup> Prevailing Wind Park has demonstrated that the Project will not adversely impact property values.<sup>119</sup> Mr. MaRous, a South Dakota State Certified General Appraiser and a certified Member Appraisal Institute appraiser with extensive experience evaluating the impact of wind turbines on property values, conducted a Market Analysis to analyze the potential impact of the Project on the value of the surrounding properties and found no credible data indicating property values will be adversely impacted due to proximity to the Project.<sup>120</sup> Mr. MaRous further noted that the additional income from participating in the Project may actually increase the value and marketability of participating agricultural land.<sup>121</sup> This conclusion is also consistent with the Commission's recent findings regarding property values in the Crocker and Dakota Range wind farm proceedings.<sup>122</sup>

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<sup>115</sup> Ex. A1 at 9-2 (Application).

<sup>116</sup> Ex. A1 at 9-3 (Application).

<sup>117</sup> See, e.g., *In the Matter of the Application of Dakota Access, LLC for an Energy Facility Permit to Construct the Dakota Access Pipeline*, Docket HP14-002, Final Decision and Order; Notice of Entry (Dec. 14, 2015) at ¶¶ 100-101; *In the Matter of the Application by TransCanada Keystone Pipeline, LP for a Permit Under the South Dakota Energy Conversion and Transmission Facilities Act to Construct the Keystone XL Project*, Docket HP09-001, Amended Final Decision and Order; Notice of Entry (June 29, 2010) at ¶¶ 107-110 (discussing socioeconomic effects, including tax revenue, jobs, and impacts on agricultural, commercial, and industrial sectors and public facilities); *In the Matter of the Application of Dakota Range I, LLC and Dakota Range II, LLC for a Permit of a Wind Energy Facility in Grant County and Codington County, South Dakota, for the Dakota Range Wind Project*, Final Decision and Order Granting Permit to Construct Wind Energy Facility; Notice of Entry (July 23, 2018) at ¶¶ 50-57; *In the Matter of the Application of Montana-Dakota Utilities Co. and Otter Tail Power Company for a Permit to Construct the Big Stone South to Ellendale 345 kV Transmission Line*, Docket EL13-028, Final Decision and Order; Notice of Entry (Aug. 22, 2014) at ¶¶ 29-31 (discussing impacts to agriculture, property values, and local roads under this criterion).

<sup>118</sup> See, e.g., Ex. A1 at 20-3 – 20-4, 21-1 – 21-2 (Application); Ex. A1 at §§ 20.1.2, 20.3.2 (Application); Evid. Hrg. Tr. at 257 (Pawlowski).

<sup>119</sup> See Ex. A1 at § 20.1.2.3 (Application); Ex. A15 at 8, 11, 12-13, 18-19 (MaRous Supplemental Direct); Evid Hrg. Tr. at 292 (MaRous); see also Ex. A15-1 (Market Impact Analysis).

<sup>120</sup> See Ex. A15 at 12, 18-19 (MaRous Supplemental Direct); see also Ex. A15-1 at 4-5, 55 (Market Impact Analysis).

<sup>121</sup> Ex. A15 at 12 (MaRous Supplemental Direct).

<sup>122</sup> See *In the Matter of the Application by Dakota Range I, LLC and Dakota Range II, LLC for a Permit of a Wind Energy Facility in Grant County and Codington County, South Dakota, for the Dakota Range Wind Project*, Docket EL18-003, Final Decision and Order Granting Permit to Construct Wind Energy Facility; Notice of Entry (July 23,

53. There is no basis in the record to require a property value guarantee. There is no record evidence that property values will be adversely affected.<sup>123</sup>

54. The record demonstrates that the Project will not adversely impact hunting or gaming operations in the area. Mr. Jerome Powers testified regarding his concerns about the Project's impact on his guided hunting business. However, Mr. Powers' testimony did not support his claims and there is no evidence that the Project will impact Mr. Powers' hunting operation, or hunting in general. During his testimony, Mr. Powers acknowledged that he owns approximately 12.8 acres.<sup>124</sup> In the past, he has relied upon year-to-year leases for hunting rights on various properties.<sup>125</sup> He testified that some of those landowners have decided not to renew his leases for the coming year.<sup>126</sup> One of those landowners – Clearfield Colony – is a participating landowner in the Project. Mr. Powers attributes that landowner's decision not to renew his hunting lease to the Project.<sup>127</sup> However, each landowner has the right to decide whether to enter into a hunting lease for his/her property. As acknowledged by Mr. Powers, the Project does not prohibit or otherwise restrict hunting.<sup>128</sup> Thus, it is Mr. Powers' ownership of limited acreage and his need to hunt on others' land that affects his hunting business and not the Project.

55. The record demonstrates that the Project will, on the whole, have positive impacts on the community.<sup>129</sup> Construction and operation of the Project will result in substantial benefits to South Dakota and local economies.<sup>130</sup> The Project will create temporary job opportunities during construction, and permanent operations and maintenance job opportunities. During construction, up to 245 temporary construction jobs are anticipated at the peak of construction, and 8 to 10 permanent jobs will also be created in the community.<sup>131</sup> Additionally, local businesses would also likely benefit from construction-related expenditures for the Project.<sup>132</sup> The Project will make lease payments to participating landowners and will provide long-term

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2018) at ¶¶ 53-54; *In the Matter of the Application by Crocker Wind Farm, LLC for a Permit of a Wind Energy Facility and a 345 kV Transmission Line in Clark County, South Dakota, for Crocker Wind Farm*, Docket EL17-055, Final Decision and Order Granting Permit to Construct Facilities and Notice of Entry (June 12, 2018) at ¶¶ 58-60; *see also* Ex. A15 at 16-19 (MaRous Supplemental Direct); Ex. A15-7 (Surrebuttal Testimony of David Lawrence in Dakota Range Docket).

<sup>123</sup> *See* Ex. A1 at § 20.1.2.3 (Application); Ex. A15 at 8, 12, 18-19 (MaRous Supplemental Direct); Ex. A16R at 2 (Revised MaRous Rebuttal); *see also In the Matter of the Application by Dakota Range I, LLC and Dakota Range II, LLC for a Permit of a Wind Energy Facility in Grant County and Codington County, South Dakota, for the Dakota Range Wind Project*, Docket EL18-003, Final Decision and Order Granting Permit to Construct Wind Energy Facility; Notice of Entry (July 23, 2018) at ¶ 55; *In the Matter of the Application by Crocker Wind Farm, LLC for a Permit of a Wind Energy Facility and a 345 kV Transmission Line in Clark County, South Dakota, for Crocker Wind Farm*, Docket EL17-055, Final Decision and Order Granting Permit to Construct Facilities and Notice of Entry (June 12, 2018) at ¶ 61.

<sup>124</sup> Evid. Hrg. Tr. at 1017 (Powers).

<sup>125</sup> Evid. Hrg. Tr. at 1017, 1023-24 (Powers).

<sup>126</sup> Evid. Hrg. Tr. at 1024, 1028 (Powers).

<sup>127</sup> Evid. Hrg. Tr. at 1029-30 (Powers).

<sup>128</sup> Evid. Hrg. Tr. at 1018 (Powers).

<sup>129</sup> *See, e.g.*, Ex. A1 at § 20.1.2, 21-1 – 21-2 (Application); Ex. A1 at 6-5 – 6-6 (Application); Evid. Hrg. Tr. at 394-98 (Brandt); Evid. Hrg. Tr. at 187, 200 (Peters).

<sup>130</sup> *See, e.g.*, Ex. A1 at § 20.1.2 (Application).

<sup>131</sup> Ex. A1 at 6-1 (Application).

<sup>132</sup> Ex. A1 at 20-4 (Application).

benefits to the state and local tax base.<sup>133</sup> The Project is anticipated to result in more than \$20.4 million in additional annual tax revenue for the state and local governments.<sup>134</sup>

56. With almost any energy infrastructure project, there is not unanimous support for the Project.<sup>135</sup> There are residents in the Project Area who do not support the Project, some of whom participated in these proceedings to advocate for their views. However, the opposition to this Project is similar to that for other energy infrastructure projects.<sup>136</sup> Moreover, while the intervenors voiced their concerns, the Commission also heard the testimony of landowners who do support the Project and they explained their reasons for participating in the Project. Participating landowners Ms. Karen Peters and Mr. Dustin Brandt testified to their good working relationships with Prevailing Wind Park and how they believe the Project will benefit the community.<sup>137</sup> Ms. Peters and Mr. Brandt explained their reasons for supporting the Project, including that the Project will provide an additional stable source of income for landowners, generate much-needed revenue for the counties, townships, and local schools, and create good-paying jobs in the community that will open up new career opportunities.<sup>138</sup> The testimony demonstrates that while people may have differences of opinion concerning the Project, it is no more than expected from an energy infrastructure project and is not anticipated to have permanent adverse impacts on the community. As Mr. Brandt and Mr. Schoenfelder testified, people may disagree about the Project, but they are, and will remain, a community and

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<sup>133</sup> Ex. A1 at 6-5 – 6-6 (Application).

<sup>134</sup> Ex. A1 at 20-3 – 20-4 (Application). At the evidentiary hearing, Commissioner Hanson questioned a portion of Mr. Damon’s testimony that included a calculation regarding the anticipated benefits of the Project. *See Evid. Hrg. Tr.* at 270-71. As requested by the Commissioners, in its post-hearing brief Prevailing Wind Park clarified that the excerpt in question (on page 14 of Mr. Damon’s testimony) corresponds to page 20-4 of the Application, which states: “construction of the Project would create a \$14.9 million boost to the local economy. Prevailing Wind Park estimates that \$220,000 of food, supplies, and fuel would be purchased locally by the Project and Project staff annually (or \$20.4 million over the life of the Project).” The \$20.4 million total cited in Mr. Damon’s testimony and the Application includes the \$14.9 million *plus* the \$220,000 in annual purchasing over the life of the Project. Thus, there was no calculation error in Mr. Damon’s direct testimony.

<sup>135</sup> *See, e.g., In the Matter of the Application by Dakota Range I, LLC and Dakota Range II, LLC for a Permit of a Wind Energy Facility in Grant County and Codington County, South Dakota, for the Dakota Range Wind Project*, Docket EL18-003, Final Decision and Order Granting Permit to Construct Wind Energy Facility; Notice of Entry (July 23, 2018) (Two intervenors); *In the Matter of the Application by Crocker Wind Farm, LLC for a Permit of a Wind Energy Facility and a 345 kV Transmission Line in Clark County, South Dakota, for Crocker Wind Farm*, Docket EL17-055, Final Decision and Order Granting Permit to Construct Facilities and Notice of Entry (June 12, 2018) (Two intervenors); *In the Matter of the Application of Dakota Access, LLC for an Energy Facility Permit to Construct the Dakota Access Pipeline*, Docket HP14-002, Final Decision and Order; Notice of Entry (Dec. 14, 2015) (50 intervenors); *In the Matter of the Application by TransCanada Keystone Pipeline, LP for a Permit Under the South Dakota Energy Conversion and Transmission Facilities Act to Construct the Keystone XL Project*, Docket HP09-001, Amended Final Decision and Order; Notice of Entry (June 29, 2010) (15 intervenors); *In the Matter of the Application by Buffalo Ridge II LLC, a Subsidiary of Iberdola Renewables, Inc. for an Energy Conversion Facility Permit for the Construction of the Buffalo Ridge II Wind Farm and Associated Collection Substation and Electric Interconnection System*, Docket EL08-031, Final Decision and Order; Notice of Entry (April 23, 2009) (Six Intervenors); *In the Matter of the Application of Montana-Dakota Utilities Co. and Otter Tail Power Company for a Permit to Construct the Big Stone South to Ellendale 345 kV Transmission Line*, Docket EL13-028, Final Decision and Order; Notice of Entry (Aug. 22, 2014) (three intervenors).

<sup>136</sup> *See Evid. Hrg. Tr.* at 257 (Pawlowski).

<sup>137</sup> *See Evid. Hrg. Tr.* at 185-87 (Peters); *Evid. Hrg. Tr.* at 394-98, 426-27 (Brandt).

<sup>138</sup> *See Evid. Hrg. Tr.* at 185-87 (Peters); *Evid. Hrg. Tr.* at 394, 396-98 (Brandt).

neighbors.<sup>139</sup> Many of the comments expressed by opponents of the Project relate to fears regarding potential health impacts, noise, and shadow flicker; however, as discussed in the section below, allegations of potential health effects are not supported by record evidence. Further, as discussed below, Prevailing Wind Park has addressed other concerns raised such as by proposing a reasonable and appropriate sound limit and committing to utilize turbine control software to limit shadow flicker at non-participating residences in the Project Area to no more than 30 hours per year or 30 minutes per day at non-participating residences.<sup>140</sup> In addition, Prevailing Wind Park is committed to continuing community outreach and dialogue in the community regarding the Project.<sup>141</sup>

57. The record demonstrates that the Project is not anticipated to adversely impact communications systems.<sup>142</sup> Prevailing Wind Park completed a study on the effects of the Project upon Federal Communications Commission (“FCC”)-licensed radio frequency facilities, including analyses of microwave point-to-point paths, airports, radar stations, military aircraft operations, and National Telecommunication Information Agency (“NTIA”) notification.<sup>143</sup> Based on the results of this study and consultation with NTIA, Prevailing Wind Park shifted a turbine 50 feet to the north to ensure avoidance of microwave beam paths.<sup>144</sup> In addition, Prevailing Wind Park and Staff have agreed upon Condition 25 regarding interference with communication systems.<sup>145</sup>

58. The record demonstrates that Prevailing Wind Park has avoided and/or minimized impacts to transportation.<sup>146</sup> Prevailing Wind Park will work with local units of government to obtain the necessary road crossing and utility permits for the Project.<sup>147</sup> Prevailing Wind Park will coordinate with applicable local road authorities to establish road use agreements, as needed, to minimize and mitigate Project impacts to haul roads.<sup>148</sup> The Project will participate in the South Dakota One-Call program.<sup>149</sup>

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<sup>139</sup> Evid. Hrg. Tr. at 403-04 (“It’s not like there’s a huge thing there. I mean, there’s people for it. There’s people against it. But life goes on. In the end we’re all still Avon residents.”); *see also id.* at 419-20 (“There is always some controversy with a project, but, as I stated before, I believe when this is all said and done, whether it is built or not, we are all still a community. I mean, these people are my neighbors. They’re still going to be my neighbors when this is all said and done. So I do not believe that there’s been so much [word unclear] that we can’t get along and go about life.”); Evid. Hrg. Tr. at 945-46 (Schoenfelder) (“I made a commitment early in this process that I would want to be treated the way other people want to be treated. I hope that other people feel the same way. These are my neighbors. A lot of those neighbors are taking the stands for a lot of different reasons. They’re not evil people. I just – I – I refuse to – I refuse to hate anyone through this process.”).

<sup>140</sup> *See* Applicant’s Proposed Sound and Charles Mix Conditions; Applicant’s and Staff’s Revised Joint Recommended Condition 28; Evid. Hrg. Tr. at 42-43 (Anderson); Evid. Hrg. Tr. at 207 (Pawlowski).

<sup>141</sup> Evid. Hrg. Tr. at 1139-40, 1145-46 (Pawlowski); *see also* Ex. A1 at 2-1 (Application).

<sup>142</sup> *See* Ex. A1 at § 15.6 (Application); Ex. A14 at 5 (Canty Rebuttal).

<sup>143</sup> Ex. A1 at 15-15 – 15-16 (Application); *see also* Ex. A1 at Appendix O (Application).

<sup>144</sup> Ex. A14 at 5 (Canty Rebuttal); Evid. Hrg. Tr. at 444-45 (Canty).

<sup>145</sup> *See* Applicant’s and Staff’s Revised Joint Recommended Condition 25.

<sup>146</sup> *See* Ex. A1 at § 20.4.2 (Application); Ex. A6 at 4 (Pawlowski Supplemental Direct); Ex. A6-2 (Examples of FAA DNH).

<sup>147</sup> Ex. A6-3 at 5 (Damon Direct).

<sup>148</sup> Ex. A1 at 20-10 (Application).

<sup>149</sup> Ex. A6-3 at 14 (Damon Direct).

C. **The facility will not substantially impair the health, safety or welfare of the inhabitants.**

59. The record demonstrates Prevailing Wind Park has minimized impacts from noise.<sup>150</sup> Prevailing Wind Park has proposed Condition 27 regarding noise.<sup>151</sup>

60. Section 1741 of the Bon Homme County Zoning Ordinance provides: “Noise level produced by the LWES shall not exceed forty-five (45) dBA, average A-weighted sound pressure at the perimeter of occupied residences existing at the time the permit application is filed, unless a signed waiver or easement is obtained from the owner of the residence.”<sup>152</sup>

61. Charles Mix County does not have a zoning ordinance and does not require wind energy system permits.<sup>153</sup> Prevailing Wind Park worked with the County to address concerns and provide assurances.<sup>154</sup> Prevailing Wind Park negotiated Project siting commitments with the County, which included a commitment that noise from the Project’s wind turbines would not exceed 43 dBA at any existing nonparticipating residences and 45 dBA at existing participating residences, unless a signed waiver is obtained from the owner of the residence.<sup>155</sup> Prevailing Wind Park executed an affidavit memorializing its commitments; this affidavit binds Prevailing Wind Park but imposes no obligations on Charles Mix County.<sup>156</sup>

62. Hutchinson County does not have a specific sound level requirement for wind turbines in its zoning ordinance. Therefore, Prevailing Wind Park used the Bon Homme County ordinance sound level limit as a design goal for Hutchinson County.<sup>157</sup>

63. Prevailing Wind Park retained an independent expert to independently model the predicted sound levels for the Project.<sup>158</sup> The highest predicted sound level at an occupied residence is 41.9 dBA. Accordingly, all residences are expected to be below 45 dBA – in most cases, far less than 45 dBA – and therefore meet the requirements of Bon Homme County, as well as Prevailing Wind Park’s commitment in Charles Mix County not to exceed 43 dBA at non-participant residences.<sup>159</sup>

64. The Project’s sound modeling utilized conservative assumptions and was conducted in accordance with the international standard (ISO 9613-2). The modeling assumes all turbines were operating and producing maximum acoustic output, these emissions propagate out fully in all directions, and that atmospheric conditions will be relatively ideal for the

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<sup>150</sup> See Ex. A1 at § 15.3.4 (Application); Ex. A10-2 (Updated Sound Study).

<sup>151</sup> See Applicant’s Proposed Sound and Charles Mix Conditions.

<sup>152</sup> Ex. A10-2 at 1-1 (Updated Sound Study).

<sup>153</sup> Ex. A1 at 15-7 (Application).

<sup>154</sup> Ex. A7 at 1 (Pawlowski Rebuttal); Evid. Hrg. Tr. at 217, 251, 253-54 (Pawlowski).

<sup>155</sup> Ex. A7 at 1 (Pawlowski Rebuttal); Ex. I-22 (Letter from Charles Mix County with Affidavit of Peter Pawlowski); Evid. Hrg. Tr. at 217, 251, 254 (Pawlowski). Prevailing Wind Park also committed that shadow flicker produced by the wind turbines would not exceed 30 hours per year and/or 30 minutes per day at currently inhabited residences of nonparticipants. Ex. I-22 (Letter from Charles Mix County with Affidavit of Peter Pawlowski).

<sup>156</sup> Evid. Hrg. Tr. at 217, 253 (Pawlowski).

<sup>157</sup> Ex. A1 at 15-7 (Application),

<sup>158</sup> Evid. Hrg. Tr. at 509 (Howell).

<sup>159</sup> Ex. A10 at 2 (Howell Rebuttal) and Ex. A10-1 at 2 (Memorandum Regarding Updated Modeling Results).

propagation of sound.<sup>160</sup> Additionally, the modeling uses a conservative ground absorption value of 0.5 and did not include attenuation for sound propagation through wooded areas, existing barriers, and shielding.<sup>161</sup> The model takes into account source sound power levels, air absorption, ground absorption and reflection, and terrain.<sup>162</sup> Prevailing Wind Park's acoustical expert Mr. Howell has verified these conservative assumptions through field measurements at other operating wind projects; thus, the methodology for modeling sound levels has been tested and confirmed in the field.<sup>163</sup> Mr. Howell's post-construction studies have demonstrated that his conservative pre-construction prediction methods typically exceed actual operational sound levels of proposed projects.<sup>164</sup> Based on the conservative nature of the sound modeling for the Project, actual sound levels for the Project are expected to be lower than the modeled levels.<sup>165</sup>

65. The record demonstrates that 45 dBA at non-participating residences is an appropriate and reasonable sound limit. Mr. Howell, who was retained by Prevailing Wind Park to independently model the predicted sound levels for the Project,<sup>166</sup> testified that this limit is one of the most restrictive sound limits he has seen and that, based on his modeling, the Project will meet these limits.<sup>167</sup> In his written testimony, Staff witness Mr. Hessler agreed that 45 dBA is appropriate, stating, "[i]n my experience 45 dBA is an appropriate and reasonably fair *regulatory* noise limit for wind projects at non-participating residences generally balancing the interests of [] both the community and developers."<sup>168</sup> At the evidentiary hearing, Mr. Hessler claimed that he would "like to see the project shoot for this 40" dBA.<sup>169</sup> However, Mr. Hessler continued to acknowledge that 45 dBA is "a reasonable limit under normal circumstances. When there's not a lot of opposition."<sup>170</sup> When asked about why he had determined there was "a lot of opposition" for this Project, Mr. Hessler referred to the time it took him to read Intervenors' submissions.<sup>171</sup> Mr. Hessler's perceived risk of potential future complaints is not a reasonable basis for imposing a sound limit lower than what experts agree is reasonable and appropriate. As Mr. Hessler acknowledged, it is not uncommon for there to be fear and resistance during the development phase of a project, often attributable to misinformation and highly-biased anti-wind groups, but once a project is operational, most of those fears prove to be unfounded.<sup>172</sup> It is also contradicted by Mr. Hessler's own testimony that there is no limit that could be set to avoid sound complaints.<sup>173</sup> Mr. Hessler and Intervenors' witnesses referred to the eight-turbine Shirley Wind

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<sup>160</sup> See Ex. A10-2 at 17-19 (Updated Sound Study); Ex. A9 at 7 (Howell Direct); Ex. A10 at 8 (Howell Rebuttal).

<sup>161</sup> See Ex. A10 at 8 (Howell Rebuttal); Ex. A10-2 at 19 (Updated Sound Study).

<sup>162</sup> See Ex. A10-2 at 17 (Updated Sound Study); Ex. A9 at 8 (Howell Direct).

<sup>163</sup> Evid. Hrg. Tr. at 489 (Howell); see also Ex. A9 at 8 (Howell Direct) ("Our own post-construction studies have demonstrated that our pre-construction conservative prediction methods typically exceed actual operational sound levels of proposed projects."); see also Ex. A9 at 9 (Howell Direct) ("In-house and third-party monitoring has routinely demonstrated that our prediction methods are conservative, and monitoring results are typically between 1 and 3 dBA lower than our predictions.").

<sup>164</sup> See Ex. A9 at 8 (Howell Direct).

<sup>165</sup> Evid. Hrg. Tr. at 500 (Howell).

<sup>166</sup> Evid. Hrg. Tr. at 509 (Howell).

<sup>167</sup> Evid. Hrg. Tr. at 493, 509, 511 (Howell); see also Ex. A10 at 2 (Howell Rebuttal).

<sup>168</sup> Ex. S3 at 4 (Hessler Direct) (emphasis added); see also Ex. S3 at 7-8 (Hessler Direct) (stating that he is not aware of any wind project being designed to a 35 dBA sound limit).

<sup>169</sup> Evid. Hrg. Tr. at 721-22 (Hessler).

<sup>170</sup> Evid. Hrg. Tr. at 727 (Hessler).

<sup>171</sup> Evid. Hrg. Tr. at 729 (Hessler).

<sup>172</sup> Ex. S3 at 5 (Hessler Direct); Evid. Hrg. Tr. at 727-29 (Hessler).

<sup>173</sup> Evid. Hrg. Tr. at 726-27, 780 (Hessler); see also Ex. S3 at 4 (Hessler Direct).

Project in their testimonies as evidence regarding the potential for complaints from a wind project. However, the Wisconsin Public Service Commission was unpersuaded to implement the lower sound level for which Mr. Hessler advocated.<sup>174</sup> The Wisconsin Public Service Commission adopted the following requirement: “[A]n owner shall operate the wind energy system so that the noise attributable to the wind energy system does not exceed 50 dBA during daytime hours and 45 dBA during nighttime hours.”<sup>175</sup> Thus, 45 dBA limit at non-participants’ residences in Bon Homme County and Hutchinson County is consistent with prior dockets, consistent with Bon Homme County’s requirements, and fully supported on the record. In Charles Mix County, based solely on Prevailing Wind Power’s commitments, the appropriate sound level is 43 dBA for non-participants and 45 dBA at participant’s residences unless a written waiver is obtained from the owner of the residence.

66. Section 1741 of the Bon Homme County zoning ordinance states the following: “When determined appropriate by the County, a Shadow Flicker Control System shall be installed upon all turbines which will cause a perceived shadow effect upon a habitable residential dwelling. Such system shall limit blade rotation at those times when shadow flicker exceeds thirty (30) minutes per day or thirty (30) hours per year at perceivable shadow flicker intensity as confirmed by the Zoning Administrator are probable.”<sup>176</sup>

67. The record demonstrates that Prevailing Wind Park has minimized and/or avoided impacts from shadow flicker.<sup>177</sup> Consistent with industry standard, Prevailing Wind Park has committed to limiting shadow flicker at non-participating residences in the Project Area to no more than 30 hours per year at non-participating residences.<sup>178</sup> In addition, Prevailing Wind Park has also committed to limiting shadow flicker at non-participating residences in the Project Area to no more than 30 minutes per day.<sup>179</sup> Where shadow flicker exceeds the commitments made by Prevailing Wind Park, Prevailing Wind Park has committed to use Turbine Control Software programmed to automatically shut down a specific turbine or turbines for an appropriate amount of time as necessary to comply with that commitment.<sup>180</sup> Specifically, the software will shut a turbine down before it exceeds the committed shadow flicker limits and will not turn the turbine back on until the shadow flicker at that location has ended.<sup>181</sup>

68. The record demonstrates that the 30 hour/year limit is an appropriate limit that is consistent with industry standards.<sup>182</sup> There is no federal standard for shadow flicker exposure

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<sup>174</sup> See Wisc. Admin. Code § PSC 128.14(3)(a).

<sup>175</sup> Wisc. Admin. Code § PSC 128.14(3)(a).

<sup>176</sup> Ex. A1 at 15-14 (Application).

<sup>177</sup> See, e.g., Ex. A1 at § 15.5.2 (Application).

<sup>178</sup> Evid. Hrg. Tr. at 42-43, 73, 81, 83-84 (Anderson); Ex. A2 at 4 (Anderson Direct); Evid. Hrg. Tr. at 207 (Pawlowski); Applicant’s and Staff’s Revised Joint Recommended Condition 28.

<sup>179</sup> Applicant’s and Staff’s Revised Recommended Condition 28; Evid. Hrg. Tr. at 42-43, 73, 81 (Anderson); Evid. Hrg. Tr. at 207 (Pawlowski).

<sup>180</sup> Evid. Hrg. Tr. at 207-08 (Pawlowski).

<sup>181</sup> Evid. Hrg. Tr. at 207-08 (Pawlowski); see also Evid. Hrg. Tr. at 54 (Anderson) (“It’s part of the machine itself, and it’s simply a modification of the control software for the turbine. And we can modify that so that if the flicker above a certain threshold occurs, whether that’s hours per year, minutes per day, et cetera, we can adjust the turbine control settings and, simply put, tell it not to operate or to operate in a different way.”).

<sup>182</sup> See Evid. Hrg. Tr. at 51, 73, 81, 83-84 (Anderson); Evid. Hrg. Tr. at 259-60, 1114 (Pawlowski).



from wind turbines, and state and local standards are uncommon.<sup>183</sup> This standard is commonly applied in regulatory proceedings in other jurisdictions.<sup>184</sup> No jurisdictions prohibit shadow flicker at non-participating residences.<sup>185</sup> Staff and Prevailing Wind Park have agreed upon Conditions 28 and 29 regarding shadow flicker.<sup>186</sup>

69. There is no record evidence that the proposed Project will have adverse impacts on human health.<sup>187</sup> Construction and placement of facilities meet or exceed industry standards established for protection of the health and welfare of residences and businesses in and around the Project.<sup>188</sup> Further, the South Dakota Department of Health provided Staff with a letter stating that the Department of Health has not taken a formal position on the issue of wind turbines and human health.<sup>189</sup> The South Dakota Department of Health referenced the Massachusetts Department of Public Health and Minnesota Department of Health studies and noted that those studies generally conclude that there is insufficient evidence to establish significant risk to human health.<sup>190</sup>

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<sup>183</sup> Evid. Hrg. Tr. at 51 (Anderson).

<sup>184</sup> See, e.g., *In the Matter of the Application of Freeborn Wind Energy LLC for a Large Wind Energy Conversion System Site Permit for the up to 84 MW Freeborn Wind Farm in Freeborn County*, Minnesota Public Utilities Commission Docket WS-17-410, Minnesota Department of Commerce Energy Environmental Review and Analysis (“EERA”) Comments and Recommendations on Draft Site Permit at 18 (December 5, 2017) (eDocket No. [201712-137950-01](#)) (“Some of the comments indicated that non-participants should not experience more than 30 hours of shadow flicker per year. 30 hours of flicker per year was a suggested standard in a couple sources of information reviewed by EERA, but those sources do not provide supporting scientific data that would suggest there is a link between shadow flicker in excess of 30 hours per year of exposure and negative human health impacts.”); *In the Matter of the Application of Lindahl Wind Project, LLC’s Application for a Certificate of Site Compatibility for the Lindahl Wind Farm Project in Williams County, North Dakota*, Docket PU-15-482, North Dakota Public Service Commission Findings of Fact, Conclusions of Law and Order, (Dec. 2, 2016) at Order ¶ 8. see also Evid. Hrg. Tr. at 1127 (Kearney) (“Ultimately what I looked at was what the county was comfortable with as being a nuisance issue and if they were comfortable with 30 hours without some study saying that’s right or wrong, I was comfortable with that.”).

<sup>185</sup> Evid. Hrg. Tr. at 80 (Anderson).

<sup>186</sup> Applicant’s and Staff’s Revised Joint Recommended Conditions 28, 29.

<sup>187</sup> See, e.g., Ex. A4 at 16 (Roberts Supplemental Direct) (“the levels of sound and infrasound from wind turbines are significantly lower than those that have been shown to cause harm.”); Ex. A18 at 4-5 (Ellenbogen Rebuttal) (“None of the limited epidemiological evidence reviewed suggested an association between noise from wind turbines and a wide range of topics we considered: pain, stiffness, diabetes, high blood pressure, tinnitus, hearing impairment, cardiovascular disease, and/or headache/migraine. In addition, claims that infrasound from wind turbines directly impacts the vestibular system have not been demonstrated scientifically. . . . We did not find evidence in the human or animal literature to support that vibrations of the kind produced by a wind turbine could influence the vestibular system.”); see also Ex. A4 at 4, 18, 21 (Roberts Supplemental Direct); Ex. A18 at 12 (Ellenbogen Rebuttal); Evid. Hrg. Tr. at 118, 171-72 (Roberts); Evid. Hrg. Tr. at 327, 375-76 (Ellenbogen).

<sup>188</sup> Ex. A1 at 25-1 – 25-2 (Application).

<sup>189</sup> Ex. S1 at 9 and DK-4 (Kearney Direct); see *In the Matter of the Application by Crocker Wind Farm, LLC for a Permit of a Wind Energy Facility and a 345 kV Transmission Line in Clark County, South Dakota, for Crocker Wind Farm*, Docket EL17-055, Exhibit S1 at DK-4, Letter, Kim Malsam-Rysdon, Secretary of Health, South Dakota Department of Health (Oct. 13, 2017) (“These studies generally conclude that there is insufficient evidence to establish a significant risk to human health.”).

<sup>190</sup> Ex. S1 at 9 and DK-4 (Kearney Direct).

70. Prevailing Wind Park offered the testimony of two highly qualified medical doctors with unchallenged credentials: Dr. Mark Roberts and Dr. Jeff Ellenbogen.<sup>191</sup> Dr. Roberts is a medical doctor and a PhD epidemiologist who spent 18 years working in public health with the Oklahoma State Department of Health.<sup>192</sup> Dr. Ellenbogen, also a medical doctor, is a Board-certified neurologist and spent five years as a professor of neurology at The Johns-Hopkins University School of Medicine.<sup>193</sup> Both Dr. Roberts and Dr. Ellenbogen testified that there is no scientific evidence that wind turbines cause adverse health effects.<sup>194</sup>

71. The testimony of Prevailing Wind Park's medical doctors was un rebutted. Intervenors did not present any expert medical testimony. While Intervenors submitted pre-filed testimony from three individuals – Mr. James, Dr. Punch, and Dr. Alves-Pereira<sup>195</sup> – Intervenors withdrew Dr. Alves-Pereira as a witness the day she was to testify. Mr. James and Dr. Punch were precluded from testifying regarding health effects because neither has the education, training, nor experience to provide expert testimony on health effects.<sup>196</sup> Neither Mr. James nor Dr. Punch is a medical doctor, nor did either perform medical evaluations on any of the people that provided complaints to them.<sup>197</sup> Further, neither Mr. James nor Dr. Punch provided credible literature supporting their assertions regarding health-related effects.<sup>198</sup> Accordingly, the Commission ordered redactions of Mr. James' and Dr. Punch's pre-filed testimony and of the transcript of their oral testimony at the evidentiary hearing to reflect the hearing examiner's ruling that neither Mr. James nor Dr. Punch is qualified to testify about health issues.<sup>199</sup>

72. Prevailing Wind Park's two independent medical experts, Dr. Roberts and Dr. Ellenbogen, provided extensive testimony confirming that there is no scientifically proven link

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<sup>191</sup> The expert qualifications of Prevailing Wind Park's experts are undisputed. For example, Dr. Roberts' expert opinion was supported by citation to corroborating studies representing reliable scientific knowledge, provided as schedules to his testimony. See, e.g., Ex. A4-2 through A4-8 and A5-1 through A5-11.

<sup>192</sup> See Ex. A4 at 2-3 (Roberts Supplemental Direct); Ex. A4-1 (Roberts Statement of Qualifications); Evid. Hrg. Tr. at 87-88 (Roberts).

<sup>193</sup> See Ex. A18-1 (Ellenbogen Rebuttal); Ex. A18-1 (Ellenbogen Statement of Qualification); Evid. Hrg. Tr. at 318-19 (Ellenbogen).

<sup>194</sup> See, e.g., Evid. Hrg. Tr. at 89, 92, 129, 154, 159-60 (Roberts); Ex. A4 at 4, 18, 21 (Roberts Supplemental Direct); Ex. A5 at 7-8 (Roberts Rebuttal); Evid. Hrg. Tr. at 325, 327, 360-61, 364-65, 366-67, 377-78, 382 (Ellenbogen); Ex. A18 at 4-5, 12 (Ellenbogen Rebuttal).

<sup>195</sup> On the day she was scheduled to appear, Intervenors withdrew Dr. Alves-Pereira as a witness. As such, her pre-filed testimony is not part of this record.

<sup>196</sup> See Evid Hrg. Tr. at 821-23 (James) and 833-35; Evid. Hrg. Tr. at 897-99, 902-03 (Punch) and 910-11, 914-15; see also Ex. A36 at 11 (*Williams v. Invenergy, LLC*, 2016 WL 1275990 (D. Oregon, April 28, 2016)) (holding that Mr. James "is not a doctor or epidemiologist. As a result, he does not have the training to opine that the infrasound and audible noise created by wind turbines activates physiological mechanisms in the body which produce adverse health effects"); *id.* at 14 ("Punch is neither a medical doctor nor an epidemiologist who could opine on the cause of Williams's symptoms solely on the basis of these qualifications. Therefore, for Punch's causation testimony to be admissible under *Daubert*, he must support his causation opinion with reference to foundational literature which establishes the causal relationship through the application of 'scientific knowledge.'").

<sup>197</sup> Evid. Hrg. Tr. at 823 (James); Evid. Hrg. Tr. at 897, 901-02 (Punch).

<sup>198</sup> See Evid. Hrg. Tr. at 825-27 (James); Evid. Hrg. Tr. at 901, 904 (Punch). For example, the paper authored by Mr. James and Dr. Punch and which both referred to in their testimony was not peer-reviewed, as that phrase is typically used. See Ex. A5 at 17-18 (Roberts Rebuttal).

<sup>199</sup> Order Redacting Exhibits and Testimonies (Nov. 1, 2018).

between wind turbines and any adverse health effect.<sup>200</sup> Dr. Roberts, a medical doctor and epidemiologist, analyzed and reviewed peer reviewed, published literature as well as literature generated through government process (such as a legislative committee or State Health Department) whereby the government empanels a group to review the literature and provide insight on a particular topic (known as “grey literature”) and did not identify any credible scientific works that provide objective support for claims that wind turbines cause adverse health effects.<sup>201</sup> He concluded that there is no peer-reviewed, scientific data to support a claim that wind turbines are causing disease or specific health conditions.<sup>202</sup>

73. Dr. Ellenbogen, a Harvard-educated neurologist and a sleep specialist, led a Massachusetts health impact study that concluded that wind turbines do not pose a risk to human health. Dr. Ellenbogen “specifically evaluated the merits of ‘wind turbine syndrome’” and “found no basis for a set of health effects from wind turbines.”<sup>203</sup> He also evaluated four individuals claiming to suffer from “wind turbine syndrome” and found that the claims could not be substantiated and in fact prevented the individuals from seeking appropriate treatment.<sup>204</sup> Dr. Ellenbogen testified: “[I]n my opinion, the misapplied blame to wind turbines prevented these individuals from seeking and obtaining much-needed medical treatment for their underlying conditions.”<sup>205</sup>

74. There is no evidence in the record to support a finding that wind turbines cause adverse health effects.<sup>206</sup> This conclusion has been reached by well-respected, governmental agencies charged with protecting public health that have evaluated the available evidence and concluded that wind turbines are not a cause of adverse health effects.<sup>207</sup> For example, the Australian National Health and Medical Research Council concluded that there is no consistent evidence that wind turbines cause adverse health effects in humans.<sup>208</sup> Similarly, the Wisconsin Siting Council concluded that no association between wind turbines and health effects has been scientifically shown.<sup>209</sup> Researchers at the Lawrence Berkeley National Laboratory also found

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<sup>200</sup> See, e.g., Evid. Hrg. Tr. at 89, 92, 129, 154, 159-60 (Roberts); Ex. A4 at 4, 18, 21 (Roberts Supplemental Direct); Ex. A5 at 7-8 (Roberts Rebuttal); Evid. Hrg. Tr. at 325, 327, 360-61, 364-65, 366-67, 377-78, 382 (Ellenbogen); Ex. A18 at 4-5, 12 (Ellenbogen Rebuttal).

<sup>201</sup> See Ex. A4 at 14-15 (Roberts Supplemental Direct) and Evid. Hrg. Tr. at 173-74 (Roberts). Intervenors questions Dr. Roberts about an article he authored in 2013 regarding his review of the literature available as of late 2012 on wind turbines and health effects. Evid. Hrg. Tr. at 99-100. As Dr. Roberts explained, he did not include his 2013 article as an exhibit to his prefiled testimony because he chose instead to include as exhibits the up-to-date, current reviews of the literature that have been conducted since his 2013 article. Evid. Hrg. Tr. at 174-75 (Roberts).

<sup>202</sup> Ex. A4 at 12 (Roberts Supplemental Direct); see also Ex. A4 at 15 (Roberts Supplemental Direct) (“Despite the attribution of various health events to wind turbines, there has not been a specific health condition documented in the peer-reviewed published literature to be recognized by the medical community or professional societies as a disease caused by exposure to sound levels and frequencies generated by the operation of wind turbines.”).

<sup>203</sup> Ex. A18 at 5 (Ellenbogen Rebuttal).

<sup>204</sup> Ex. A18 at 7-8 (Ellenbogen Rebuttal).

<sup>205</sup> Ex. A18 at 8 (Ellenbogen Rebuttal).

<sup>206</sup> See, e.g., Evid. Hrg. Tr. at 89, 92, 129, 154, 159-60 (Roberts); Ex. A4 at 4, 18, 21 (Roberts Supplemental Direct); Ex. A5 at 7-8 (Roberts Rebuttal); Evid. Hrg. Tr. at 325, 327, 360-61, 364-65, 366-67, 377-78, 382 (Ellenbogen); Ex. A18 at 4-5, 12 (Ellenbogen Rebuttal).

<sup>207</sup> See Ex. A4 at 4 (Roberts Supplemental Direct).

<sup>208</sup> Ex. A4 at 12-13 (Roberts Supplemental Direct).

<sup>209</sup> Ex. A4 at 13 (Roberts Supplemental Direct).

no link between wind turbines and adverse health effects.<sup>210</sup> In addition, an independent expert panel for Massachusetts (which included Dr. Ellenbogen) found that there was insufficient evidence that noise from wind farms directly causes health problems or disease.<sup>211</sup>

75. With respect to sleep disturbance specifically, Dr. Ellenbogen referred to a recent study from Health Canada, which found no evidence of sleep disruption from wind turbines at up to 46 dBA.<sup>212</sup> Specifically, the Health Canada study found that “[t]his demonstrated sensitivity, together with the observation that there was consistency between multiple measures of self-reported sleep disturbance and among some of the self-reported and actigraphy measures, lends strength to the robustness of the conclusion that [wind turbine noise] levels *up to 46 dB(A) had no statistically significant effect on any measure of sleep quality.*”<sup>213</sup>

76. Infrasound is generally defined as sound in the approximately 0 to 20 Hz frequency range.<sup>214</sup> A level of 20 Hz is commonly considered the low end of the range of human hearing.<sup>215</sup> Infrasound is generated by both natural and man-made sources, including: the human heart, waves, thunder, waterfalls, washing machines, fans, and heating and refrigeration systems.<sup>216</sup> The levels of infrasound produced by wind turbines are not only below the threshold of human hearing but are multiple orders of magnitude below the threshold.<sup>217</sup> There is no scientifically proven evidence of adverse effects in this level range.<sup>218</sup> Infrasound is not unique to wind turbines, nor is the infrasound from wind turbines unique or distinct from infrasound produced by other sources at similar levels.<sup>219</sup> Further, the levels of infrasound produced by wind turbines are significantly lower than those that have been shown to cause harm, such as

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<sup>210</sup> Ex. A4 at 13 (Roberts Supplemental Direct).

<sup>211</sup> Ex. A4 at 13-14 (Roberts Supplemental Direct); Ex. A18 at 4-5 (Ellenbogen Rebuttal).

<sup>212</sup> See Evid. Hrg. Tr. at 364-65 (Ellenbogen); Ex. A39 at 107 (Michaud et al., Effects of Wind Turbine Noise on Self-Reported and Objective Measures of Sleep (2016)).

<sup>213</sup> Ex. A39 at 107 (Michaud et al., Effects of Wind Turbine Noise on Self-Reported and Objective Measures of Sleep (2016)) (emphasis added).

<sup>214</sup> Ex. A4 at 17 (Roberts Supplemental Direct).

<sup>215</sup> Ex. A4 at 17 (Roberts Supplemental Direct). In addition, Exhibit A40 is a graphic showing the relationship between sound pressure levels (dB) and frequency (Hz) as it relates to human hearing. As indicated on the graphic, sound pressure levels must be above 100 dB for humans to hear at very low frequencies.

<sup>216</sup> Ex. A5 at 6-7 (Roberts Rebuttal); Ex. A4 at 17 (Roberts Supplemental Direct).

<sup>217</sup> Ex. A5 at 7 (Roberts Rebuttal).

<sup>218</sup> Ex. A5 at 7 (Roberts Rebuttal). Ex. A4 at 17 (Roberts Supplemental Direct); see also Evid. Hrg. Tr. at 169 (Roberts) (“If we begin to have regulations about infrasound, we’re going to have to consider the other sources. Our lungs, our heart, our diaphragm, my GI tract all make low frequency sounds. My joints make low frequency sounds as well.”); Evid. Hrg. Tr. at 171 (Roberts) (“Infrasound is caused by a large number of different natural and technical sources. It is every day part of our environment that can be found everywhere. Wind turbines make no considerable contribution to it. The infrasound levels generated by them lie clearly below the limits of human perception. There is no scientifically proven evidence of adverse effects in this level range.”) (quoting Ex. A5-1 at 12) Intervenor referenced a study conducted on guinea pigs to argue that wind turbine infrasound could be detected and/or somehow impact the inner ear. This study is neither relevant nor helpful, as Dr. Ellenbogen explained. First, there are significant differences between the inner ears of guinea pigs and humans. Second, it has nothing to do with adverse health effects. See Evid. Hrg. Tr. at 386, 389-90 (Ellenbogen) (“I actually don’t have confidence that the study is relevant for this panel for two reasons. One, because of the animal comparison and also because it was not about health effects. It was about perception.”).

<sup>219</sup> See Evid. Hrg. Tr. at 177 (Roberts); Ex. A4 at 17 (Roberts Supplemental Direct); Ex. A5 at 6-7 (Roberts Rebuttal).

from jet engines or blast injuries.<sup>220</sup> There have been numerous studies analyzing wind turbine effects; none of these studies have found a causal relationship between wind turbine infrasound and human health effects.<sup>221</sup> As Dr. Roberts testified, these studies looked at sound overall from wind turbines when drawing their conclusions about health effects – these studies necessarily would have included infrasound.<sup>222</sup> Thus, there is no evidence in the record to support a finding that wind turbines cause adverse health effects.<sup>223</sup>

77. While there are no limits specifically addressing infrasound levels, it is well understood that limiting wind turbine noise emissions using a dBA standard automatically limits infrasound.<sup>224</sup> There is a fixed relationship between the dBA scale and infrasound. Thus, once one part of the spectrum is limited, the rest of the spectrum is limited as well. For this Project, the 45 dBA limit controls infrasound levels from the Project to levels that would not cause health effects and which are orders of magnitude below the human hearing threshold.<sup>225</sup> As Staff's witness Mr. Hessler testified, there are currently over 90,000 MW of wind power installed in the United States involving more than 50,000 wind turbines, with self-reported adverse health effect complaints at only a very small number of those turbines.<sup>226</sup>

78. The record demonstrates that shadow flicker from turbines is not harmful to the health of photosensitive individuals, including those with epilepsy.<sup>227</sup> Seizures that occur as a result of flashes of light (a condition known as photic-stimulated epilepsy) happen as a result of frequencies greater than 5 Hz, usually substantially higher.<sup>228</sup> The frequency of any shadow flicker from wind turbines will be approximately 0.5 to 1 Hz, which is considerably below the

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<sup>220</sup> Ex. A4 at 16 (Roberts Supplemental Direct); *see, e.g.*, Evid. Hrg. Tr. at 150 (describing effects of sound levels of 110-120 dB from jet engines); Evid. Hrg. Tr. at 375-76 (describing blast injuries experienced by veterans from sound pressure levels exceeding 110 dB).

<sup>221</sup> *See* Evid. Hrg. Tr. at 118, 135, 139-40, 160-62, 171-74 (Roberts); *see also* Ex. A5 at 7 (Roberts Rebuttal); Ex. A18 at 5 (Ellenbogen Rebuttal); Evid. Hrg. Tr. at 516-17 (Howell) (“In general the absolute values that we’re talking about for this wind farm don’t require any further analysis of low frequency noise, in my opinion. . . . In this scenario we looked at dBA and I did an off the cuff look at the dBC values as well and none of the values exceeded that recommended differential to determine if there’s a low frequency component. So I would not expect a significant low frequency component here.”).

<sup>222</sup> *See* Evid. Hrg. Tr. at 118, 135, 139-40, 143, 160-62, 171-74 (Roberts).

<sup>223</sup> *See* Ex. A5 at 7 (Roberts Rebuttal); Ex. A18 at 4-5 (Ellenbogen Rebuttal) (“None of the limited epidemiological evidence reviewed suggested an association between noise from wind turbines and a wide range of topics we considered: pain, stiffness, diabetes, high blood pressure, tinnitus, hearing impairment, cardiovascular disease, and/or headache/migraine. In addition, claims that infrasound from wind turbines directly impacts the vestibular system have not been demonstrated scientifically. . . . We did not find evidence in the human or animal literature to support that vibrations of the kind produced by a wind turbine could influence the vestibular system.”); Ex. A4 at 16 (Roberts Supplemental Direct) (“the levels of sound and infrasound from wind turbines are significantly lower than those that have been shown to cause harm.”); Evid. Hrg. Tr. at 118, 171-72 (Roberts); Evid. Hrg. Tr. at 327, 375-76 (Ellenbogen).

<sup>224</sup> *See* Evid. Hrg. Tr. at 382, 387 (Ellenbogen).

<sup>225</sup> Evid. Hrg. Tr. at 382, 387 (Ellenbogen).

<sup>226</sup> *See* Ex. S3 at 7 (Hessler) (“According to the latest quarterly report of the American Wind Energy Association there are now over 90,000 MW of installed wind power in this country involving more than 50,000 wind turbines. To my knowledge, instances of apparent adverse health effects from wind turbines have occurred at only a small handful of sites with only a few turbines each, such as Falmouth in Massachusetts (three 1.5 MW GE units) and Shirley Wind in Wisconsin (eight 2.5 MW Nordex units.”); Evid. Hrg. Tr. at 733 (“If this problem were common at all, it would be in the forefront of every project’s Application and would be a totally disruptive issue.”).

<sup>227</sup> *See* Ex. A18 at 5 (Ellenbogen Rebuttal); Evid. Hrg. Tr. at 94, 154, 159 (Roberts).

<sup>228</sup> Ex. A18 at 5 (Ellenbogen Rebuttal); Evid. Hrg. Tr. at 154 (Roberts).

range that would elicit a seizure even in someone who is vulnerable to seizures as a result of flashes of light.<sup>229</sup> No supporting scientific data has been provided to suggest that there is a link between shadow flicker in excess of 30 hours per year of exposure and negative human health impacts.

79. Overall, the record shows that Prevailing Wind Park has met its burden to demonstrate that the Project will not substantially impair human health; indeed, there is no evidence in the record that the Project would impair human health (substantially or insubstantially). Although Intervenors provided some testimony concerning speculative health concerns, the large body of reliable and vetted medical evidence refutes these claims.<sup>230</sup>

80. The Project will utilize an Aircraft Detection Lighting System (“ADLS”) provided that the FAA approves it for the Project.<sup>231</sup> The FAA has issued a Determination of No Hazard to Air Navigation for each of the Project’s proposed turbine sites.<sup>232</sup>

81. The record demonstrates that Prevailing Wind Park has taken appropriate measures to avoid and/or minimize the risk of ice throw occurring.<sup>233</sup> Although icing can occur on turbine blades during freezing rain conditions, the record demonstrates that it is not common and is generally controlled by ice detection systems on the turbines.<sup>234</sup> Project turbines will include the standard turbine control system on each turbine, as well as an additional purchased accessory software package, including Turbine Computer Monitoring (“TCM”).<sup>235</sup> The turbine controller senses when the rotor revolutions per minute are not consistent with the measured wind speed (which may occur as the buildup of ice breaks the perfected aerodynamic shape of the blade).<sup>236</sup> The turbine controller then evaluates the temperature and recognizes that icing conditions may exist. The TCM system measures vibration on many components of the turbine and, when it senses vibration above pre-set levels, the turbine automatically shuts down.<sup>237</sup> This shut-down will occur in less than two minutes from the time icing is detected.<sup>238</sup> The turbine will not attempt to restart until conditions (temperature) become favorable or human intervention occurs.<sup>239</sup>

82. The evidence presented in the record demonstrates that Project setbacks and the proposed permit condition regarding turbine icing will protect human health and safety.<sup>240</sup>

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<sup>229</sup> Ex. A18 at 5 (Ellenbogen Rebuttal).

<sup>230</sup> For example, Intervenors solicited testimony from individuals regarding other wind projects (Scott Rueter, Vickie May). These witnesses clearly have strong feelings about wind projects. However, they did not provide any medical evidence of any adverse health effects and well-regarded medical research and literature – relied upon by many other regulatory bodies – refutes any claims they may be making regarding health issues and wind turbines.

<sup>231</sup> Ex. A6 at 5 (Pawlowski Supplemental Direct); Applicant’s and Staff’s Revised Joint Recommended Condition 39.

<sup>232</sup> Ex. A6 at 5 (Pawlowski Supplemental Direct).

<sup>233</sup> *See, e.g.*, Ex. A17 at 2-3 (Creech Rebuttal); Applicant’s and Staff’s Revised Joint Recommended Condition 38.

<sup>234</sup> Ex. A17 at 2 (Creech Rebuttal).

<sup>235</sup> Ex. A17 at 2 (Creech Rebuttal).

<sup>236</sup> Ex. A17 at 2 (Creech Rebuttal).

<sup>237</sup> Ex. A17 at 2-3 (Creech Rebuttal).

<sup>238</sup> Evid. Hrg. Tr. at 558 (Creech).

<sup>239</sup> Ex. A17 at 3 (Creech Rebuttal).

<sup>240</sup> *See, e.g.*, Ex. A17 at 2-5 (Creech Rebuttal); Applicant’s and Staff’s Revised Joint Recommended Condition 38; *see also* Evid. Hrg. Tr. at 525-256, 551 (Creech).

Prevailing Wind Park provided testimony from Mr. Scott Creech, the construction manager for the Project, who has over a decade of experience working with wind turbines.<sup>241</sup> Specifically, Mr. Creech testified that the farthest distance he is aware of ice being thrown from a turbine is approximately 250 feet.<sup>242</sup> The Project is set back at least 649.61 feet (1.1 times the tip height of the tower) from non-participating property lines.<sup>243</sup> In Hutchinson and Bon Homme Counties, the Project is set back at least 1,000 feet from non-participating residences. Per Prevailing Wind Park's commitments to Charles Mix County, Project turbines are set back at least 3.5 times the system height or 2,000 feet, whichever is greater, from non-participating residences in Charles Mix County.<sup>244</sup> The closest participating residence to a turbine is more than 1,550 feet away.<sup>245</sup> In addition, Prevailing Wind Park has agreed to the same turbine icing condition as the Commission imposed in the Dakota Range proceeding, which requires Prevailing Wind Park to use two methods to detect icing conditions on turbine blades.<sup>246</sup> Intervenors relied on an outdated article to assert that ice throw may occur as far as 6,500 feet away from a 20 MW wind turbine.<sup>247</sup> Such a machine is not proposed for the Project, nor does it exist. As such, the document is irrelevant. Rather, the real-world data and experience, coupled with the manufacturer recommendations and turbine control software, show that the Project as designed is appropriately sited and will minimize the potential for ice throw.<sup>248</sup>

**D. The facility will not unduly interfere with the orderly development of the region with due consideration having been given the views of governing bodies of affected local units of government.**

83. The record demonstrates that the Project will not unduly interfere with the orderly development of the region. The Project complies with all applicable local land use requirements, and the evidence demonstrates that Prevailing Wind Park has worked cooperatively with local governments, even where no local land use controls existed. Specifically: Bon Homme County granted a Large Wind Energy System approval for the Project on August 21, 2018; Hutchinson County granted conditional use approvals for the Project on September 4, 2018; and, the Project received building permits from Charles Mix County in July 2018 and has worked with Charles Mix County to address concerns regarding the Project.<sup>249</sup> Prevailing Wind Park executed an affidavit memorializing its commitments to Charles Mix County; this affidavit binds Prevailing Wind Park but imposes no obligations on Charles Mix County.<sup>250</sup>

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<sup>241</sup> See Ex. A17 (Creech Rebuttal); Evid. Hrg. Tr. at 534 (Creech).

<sup>242</sup> Ex. A17 at 3 (Creech Rebuttal).

<sup>243</sup> Ex. A17 at 5 (Creech Rebuttal).

<sup>244</sup> Ex. I-22 (Letter from Charles Mix County with Affidavit of Peter Pawlowski).

<sup>245</sup> Ex. A42 (Distance from Each Residence to the Nearest Wind Turbine, Modeled Shadow Flicker and Sound Pressure Levels).

<sup>246</sup> Ex. A17 at 4 (Creech Rebuttal).

<sup>247</sup> See Ex. A28 at 1 and Attachment B (Intervenors' Responses to Staff's Second Set of Data Requests); Evid. Hrg. Tr. at 533-34 (Creech).

<sup>248</sup> Ex. A17 at 2-3 (Creech Rebuttal); Evid. Hrg. Tr. at 534, 551, 554-55, 556, 558 (Creech); Ex. A31 at "Setback Considerations for Wind Turbine Siting" (Applicant's Updated Responses to Intervenors' Data Requests).

<sup>249</sup> Ex. A7 at 1 (Pawlowski Rebuttal).

<sup>250</sup> Ex. I-22 (Letter from Charles Mix County with Affidavit of Peter Pawlowski); Evid. Hrg. Tr. at 253 (Pawlowski).

84. Intervenors take issue with the development of zoning ordinances relating to the Project. As an initial matter, the local development of zoning regulations is outside the scope of the Commission's jurisdiction and is not relevant to this proceeding.<sup>251</sup> That said, the testimony from local officials demonstrates that those local officials listened to input from people on both sides and consulted many different resources before making their decisions.<sup>252</sup> Michael Soukup from the Bon Homme County Commission testified to the thorough and fair process the county undertook in adopting its wind energy system zoning ordinance; specifically, that the county looked to other zoning ordinances for guidance, and considered input from both supporters and opponents of wind energy systems in adopting its wind energy system zoning ordinance.<sup>253</sup> Keith Mushitz, Chairman of the Charles Mix County Commission, testified to the multiple public meetings and opportunities for public comment that were fully utilized by the public, and how the county considered all of these comments in making its decision.<sup>254</sup> Even Intervenor Mr. Hubner testified that he was unhappy with the outcome of such proceedings – not the process itself.<sup>255</sup>

85. Intervenors requested a two-mile setback from non-participating residences. There is no evidence in the record supporting a two-mile setback from nonparticipating residences.<sup>256</sup> The record demonstrates that the Project meets the Commission's siting requirements applying the current setbacks, as well as Prevailing Wind Park's voluntary commitments.<sup>257</sup> Additionally, there is no reasonable basis in the record to support a 1,500-foot setback from property lines.<sup>258</sup>

### **CONCLUSIONS OF LAW**

From the foregoing Findings of Fact and the record in this proceeding, the Commission now makes the following Conclusions of Law:

1. The Commission has jurisdiction to consider the Application under South Dakota Codified Law Chapter 49-41B.
2. The wind energy conversion facility proposed by Applicant is a wind energy facility as defined under South Dakota Codified Law 49-41B-2(13).
3. The Application submitted by Applicant meets the criteria required by South Dakota Codified Law 49-41B-25, and construction of the Project meets the requirements of South Dakota Codified Law 49-41B.

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<sup>251</sup> Evid. Hrg. Tr. 627-28.

<sup>252</sup> See Evid. Hrg. Tr. at 685-93 (Soukup); Evid. Hrg. Tr. at 696-703 (Mushitz).

<sup>253</sup> See Evid. Hrg. Tr. at 668-69, 688-89 (Soukup).

<sup>254</sup> See Evid. Hrg. Tr. at 697-99, 703 (Mushitz).

<sup>255</sup> See Evid. Hrg. Tr. at 979 (Hubner) (“Well, I never contended their procedure. I mean, I – whether they made a mistake or didn't make a mistake as they were doing this. How they did it was really not an issue for me. It's what they did and who they listened to.”).

<sup>256</sup> See Ex. A7 at 3 (Pawlawski Rebuttal); Ex. S1 at 11 (Kearney Direct).

<sup>257</sup> See Ex. A7 at 3 (Pawlawski Rebuttal); Ex. S1 at 11 (Kearney Direct).

<sup>258</sup> See Ex. A7 at 4 (Pawlawski Rebuttal); Ex. S1 at 11 (Kearney Direct).



4. The Commission satisfied the hearing and notice requirement in South Dakota Codified Law Chapter 49-41B.

5. Applicant satisfied the applicable notice requirements in South Dakota Codified Law Chapter 49-41B.

6. Applicant has demonstrated that the proposed facility will comply with all applicable laws and rules.

7. Applicant has demonstrated that the facility will not pose a threat of serious injury to the environment nor to the social and economic condition of inhabitants or expected inhabitants in the siting area.

8. Applicant has demonstrated that the facility will not substantially impair the health, safety or welfare of the inhabitants.

9. Applicant has demonstrated that the facility will not unduly interfere with the orderly development of the region with due consideration having been given the views of governing bodies of affected local units of government.

10. All other applicable procedural requirements in South Dakota Codified Law Chapter 49-41B have been satisfied.

11. No party has provided evidence sufficient for the Commission to impose a property value guarantee.

12. No party has provided evidence sufficient for the Commission to impose a sound limit of 40 dBA on non-participating or participating residences.

13. No party has provided evidence sufficient for the Commission to impose a two-mile setback from non-participating landowners.

14. No party has provided evidence sufficient for the Commission to impose a 1,500-foot setback from property lines.

15. No party has provided evidence sufficient for the Commission to impose a condition regarding decommissioning above and beyond the condition agreed to by Staff and Prevailing Wind Park.

16. To the extent that any Finding of Fact set forth above is more appropriately a conclusion of law, that Finding of Fact is incorporated by reference as a Conclusion of Law.

### **ORDER**

From the foregoing Findings of Fact and Conclusions of Law, it is therefore:

ORDERED, that an energy facility permit is issued to Prevailing Wind Park, LLC for the Prevailing Wind Park Project.

ORDERED, that Applicant shall comply with the attached Permit Conditions, which are hereby incorporated into and made a part of this Order.

Dated on \_\_\_\_\_

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