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October 18, 2012

Dr. Burl W. Haar  
Executive Secretary  
Minnesota Public Utilities Commission  
127 7<sup>th</sup> Place East, Suite 350  
St. Paul, MN 55101-2147

**RE: Comments and Recommendations of the Department of Commerce Energy Facility Permitting Staff**  
Docket No. IP-6853/WS-10-1240

Dear Dr. Haar:

Attached please find the comments and recommendations of the Department of Commerce Security Energy Facility Permitting in the following matter:

Site Permit Application for a 42 Megawatt Large Wind Energy Conversion System in Stearns County, Minnesota

The site permit application was filed on December 6, 2010, by:

Patrick Smith  
Black Oak Wind, LLC  
7650 Edinborough Way, Suite 7250  
Edina, MN 55435

Energy Facility Permitting staff has prepared: (1) proposed findings of fact, conclusions of law, and order, and (2) a proposed LWECS site permit. EFP staff is available to answer any questions the Commission may have.

Sincerely,

A handwritten signature in black ink that reads "Suzanne Steinhauer". The signature is written in a cursive, flowing style.

Suzanne Lamb Steinhauer  
Energy Facility Permitting

Attachments

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## BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

### COMMENTS AND RECOMMENDATIONS OF THE MINNESOTA DEPARTMENT OF COMMERCE ENERGY FACILITY PERMITTING STAFF

DOCKET NO. IP-6853/WS-10-1240

EFP Staff: Suzanne Lamb Steinhauer.....651-296-2888

**In the Matter of** the Site Permit Application for a 42 Megawatt (MW) Large Wind energy Conversion System (LWECS) in Stearns County

**Issues Addressed:** The following are the Department of Commerce, Energy Facility Permitting (EFP) staff's comments on a site permit for the proposed Black Oak Wind Farm.

**Documents Attached:**

1. Project Location Maps
2. Proposed Findings of Fact, Conclusions of Law, and Order
3. Exhibit List
4. Proposed Site Permit with Turbine Layout Maps

Additional documents and information can be found on eDockets:

<https://www.edockets.state.mn.us/EFiling/search.jsp> (10-1240), and on the Department's energy facilities permitting website: <http://mn.gov/commerce/energyfacilities/Docket.html?Id=30578>.

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## Introduction and Background

On December 6, 2010, Black Oak Wind, LLC (Black Oak) filed a site permit application with the Public Utilities Commission for the 42 MW Black Oak Wind Farm (Project).<sup>1</sup>

### *Project Location*

<sup>1</sup> Black Oak Wind, LLC Application for a LWECS Site Permit for the Black Oak Wind Farm, December 6, 2010, eDocket ID: [201012-57165-01](#) – 10 [herein after Site Permit Application]

Black oak proposes to locate The Project in an agricultural area south and southwest of the city of Sauk Centre. As shown in Figure 1, Black Oak has identified a site of approximately 7,100 acres located in Sections 25-27 and 34-36 of Ashley Township (T126N, R35W) and Sections 1-3, 11-14, and 23 of Raymond Township (T125N, R35W) in Stearns County.<sup>2</sup>

The Project is adjacent to, and immediately west of the Getty Wind Project being developed by Getty Wind Company, LLC (see Figure 2, attached). The Commission is reviewing the site permit application for the Getty Wind Project under Commission Docket IP6866/WS-11-831. The Padua Wildlife Management Area (WMA) is located approximately 500 feet southeast of the Project Area. Five additional WMAs are located within five miles of the Project Area. The Behnen and Trisko Waterfowl Production Areas (WPAs) are adjacent to the site; 15 additional WPAs are located within five miles of the Project Area.<sup>3</sup>

### ***Project Description***

Black Oak is considering three turbine models ranging between 1.5 and 3.0 MW for the Project. Depending upon the turbine model selected, the Black Oak Wind Farm would be comprised of up to 22 REpower MM100 1.8 MW turbines for an installed capacity of 39.6 MW, up to 28 Goldwind 87/1500 1.5 MW turbines for an installed capacity of 42 MW, and up to 13 Vestas V112 3.0 MW turbines for an installed capacity of 39 MW. All of the proposed turbine layouts have two alternate turbine locations.<sup>4</sup> The height of the proposed turbines would be 80 to 100 meters (262 or 328 feet), with rotor diameters of 87 to 112 meters (285 to 368 feet) for a total height of between 423 and 492 feet with a blade fully extended.<sup>5</sup>

The project will also include an underground automated supervisory control and data acquisition system (SCADA) for real-time monitoring and control of turbine operations. Up to two (2) permanent free standing 80 meter meteorological towers will be used as part of the communication system.<sup>6</sup> Other components of the project include a concrete and steel foundation for each tower, transformers (either within the turbine or pad-mounted), all weather class 5 roads of gravel or similar material, an operation and maintenance (O&M) building, a Sonic Detection and Ranging (SODAR) unit or a Light Detection and Ranging (LIDAR) unit, and an underground energy collection system, a project substation, and a 69 kV transmission line connecting the project substation to Xcel Energy's Black Oak Switching Station.<sup>7</sup>

Each turbine is interconnected through an underground electrical collection system at 34.5 kV. All of the proposed feeder lines from the Project, approximately six miles, would connect to the project substation.<sup>8</sup> Depending upon whether the Getty and Black Oak projects are constructed together or separately, separate substations may be constructed for each project, or the projects

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<sup>2</sup> Site Permit Application, at p. 2

<sup>3</sup> Ibid., at pp. 27 - 29

<sup>4</sup> Black Oak, Hearing Testimony of Patrick Smith with Schedules, June 22, 2012, at Figures 2 – 4, eDocket ID: [20126-75957-03](#) [herein after Smith Direct Testimony]

<sup>5</sup> Black Oak Filing Updating Turbine Layout Based on Avian Report, January 17, 2012, eDocket ID: [20121-70385-01](#) [Herein after Black Oak Filing - January 17, 2012] , at p. 4

<sup>6</sup> Black Oak Wind, LLC and Getty Wind, LLC Post-Hearing Comments , July 10, 2012, eDocket ID: [20127-76674-07](#) [herein after Black Oak & Getty Post-Hearing Comments], at response 10

<sup>7</sup> Black Oak Wind, LLC Amended Application for a LWECs Site Permit for the Black Oak Wind Farm, eDocket ID: [20111-58574-02](#), [20111-58574-03](#), [20111-58574-04](#), and [20111-58574-05](#), [herein after Revised Site Permit Application], at p. 2

<sup>8</sup> Ibid., at p. 16

may jointly construct one substation. Black Oak has tentatively identified a substation site in Section 12 of Ashley Township (see Site Permit Maps, shown in Attachments 1a – 1c of the proposed site permit). Alternatively, if the Black Oak and Getty projects are constructed simultaneously, Black Oak may tie into the Getty Substation, tentatively located in Section 7 of Black Oak Township near the intersection of County Roads 187 and 190 (415<sup>th</sup> Avenue and 370<sup>th</sup> Street.<sup>9</sup> Final substation siting remains dependent on archaeological and biological field surveys as well as soil testing. The Project will interconnect with the electrical grid at Xcel Energy's Black Oak Switching Station, located approximately three and one-half miles east of the Getty Wind Project's eastern boundary.<sup>10</sup> Getty and/or Black Oak will seek a permit from Stearns County for the 69 kV transmission line between the Project Substation and the Black Oak Switching Station and for the O&M facility.

Depending upon final site design Black Oak anticipates that the project would permanently occupy approximately 13.5 to 20 acres when constructed.<sup>11</sup> EFP staff estimates that approximately 60 to 100 additional acres will be temporarily disturbed for contractor staging and assembly areas, turbine foundations, access roads, electric collection lines, substation, and an operations and maintenance facility.

Assuming net capacity factor of 35 - 40 percent, projected average annual output from the Project, based on a nameplate generating capacity of 42 MW, will be approximately 129,000 to 147,000 MWh per year.<sup>12</sup>

Black Oak anticipates that a contract for the power will be negotiated sometime in late 2012 and that construction of the Project will begin in mid-2013, with commercial operation expected by the end of 2013.<sup>13</sup> Black Oak estimates capital costs for the project to be \$82 million and ongoing operating and administrative costs, including property taxes and royalties to landowners, to be approximately \$2.5 million per year.

## **Regulatory Process and Procedures**

Commission review of an LWECs application entails two separate processes: the Certificate of Need (CN) and the Site Permit. Pursuant to Minn. Rule 7854.0500, subp. 2A, the Commission shall not issue a site permit for which a CN is required until the CN has been issued by the Commission. The following provides an overview of the CN and Site Permit processes.

### ***Certificate of Need Process***

A CN is required for any "large energy facility" as defined by Minnesota Statutes section 216B.2421, subdivision 2(1). In the order dated March 11, 2011, the Commission stated that, based on the information in the record to date, the Commission determined that a CN was not required for the Project.

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<sup>9</sup> Black Oak & Getty Post-Hearing Comments, at Response 7

<sup>10</sup> Revised Site Permit Application, at p. 9

<sup>11</sup> *Ibid.*, at p. 65

<sup>12</sup> Black Oak & Getty Post-Hearing Comments, at response 13

<sup>13</sup> Smith Direct Testimony, at p.12

Subsequent to the Commission's order accepting the application, on October 11, 2011, Black Oak, together with Getty Wind, LLC, jointly submitted a petition for a Certificate of Need for the Black Oak Wind Farm and the Getty Wind Farm (PUC Docket IP-6853 & IP-6866/CN-11-471).

On December 15, 2011, the Commission issued an order authorizing an informal review process for its consideration of the need for the project. A public hearing on the Black Oak Wind Farm and Getty Wind Farm projects was held in Sauk Centre on June 26, 2012;<sup>14</sup> the hearing was noticed to include opportunity for public comments on both the Black Oak and Getty site permits.<sup>15</sup> The OAH received eight written comments before the close of the comment period on July 10, 2012.<sup>16</sup> Administrative Law Judge Bruce H. Johnson issued a Summary of Public Testimony on August 8, 2012.<sup>17</sup>

A site permit may not be issued until the commission determines the need for the facility.

### ***Site Permit Process***

A site permit from the Commission is required to construct an LWECS, which is any combination of wind turbines and associated facilities with the capacity to generate five megawatts or more of electricity. This requirement became law in 1995. The Minnesota Wind Siting Act is found at Minnesota Statutes Chapter 216F. The rules to implement the permitting requirements for LWECS are in Minn. Rule 7854.

On December 6, 2010, Black Oak Wind, LLC (Black Oak), filed a site permit application with the Public Utilities Commission for the 42 MW Black Oak Wind Farm.<sup>18</sup> On January 14, 2011, a Commission Order accepted the application for the Black Oak Wind Farm as complete with the condition that Black Oak provide additional information on the project as requested by the Commission and EFP staff.<sup>19</sup> On January 14, 2011, Black Oak filed amended maps and texts to the Site Permit Application as recommended in the December 23, 2010, EFP staff comments.<sup>20</sup>

Following a public comment period on the site permit application, the Commission issued a draft site permit for the project in its order of March 11, 2011.<sup>21</sup> Following notice, a public meeting on the Draft Site Permit was held in on April 7, 2011. A public comment period was open through April 22, 2011.

On January 17, 2012, Black Oak submitted comments to the Commission providing a draft Avian and Bat Protection Plan (ABPP), providing a revised layout, and informing the

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<sup>14</sup> Transcript of Public Hearing held June 26, 2012, July 11, 1012, eDocket ID: [20127-76685-01](#)

<sup>15</sup> Revised Notice of Public Hearing, May 25, 2012, eDocket ID: [20125-75012-02](#)

<sup>16</sup> Written Public Comments, August 14, 2012 and July 12, 2012, eDocket ID: [20128-77851-01](#), [20127-76745-02](#), [20127-76745-05](#)

<sup>17</sup> OAH Summary of Public Testimony, August 8, 2012, eDocket ID: [20128-77667-01](#)

<sup>18</sup> Site Permit Application

<sup>19</sup> Commission Order Accepting Black Oak Wind, LLC's LWECS Site Permit Application, eDocket ID: [20111-58530-01](#)

<sup>20</sup> Revised Route Permit Application

<sup>21</sup> Commission Order Issuing Draft Site Permit for Public Review and Comment, March 11, 2011, eDocket ID: [20113-60298-01](#)

Commission of certain project changes resulting from coordination with the adjacent Getty Wind Project.<sup>22</sup>

As noted above, comments on the Black Oak and Getty Site Permits were also accepted during the comment period for the CN public hearing and are included in the ALJ's Summary of Public Testimony.

### ***Standard for Permit Issuance***

The test for issuing a site permit for an LWECS is to determine whether a project is compatible with environmental preservation, sustainable development, and the efficient use of resources. Pursuant to Minnesota Statute 216F.02, certain sections of Minnesota Statutes 216E (Minnesota Power Plant Siting Act) apply to siting LWECS, including 216E.03, subdivision 7 (considerations in designating sites and routes). Minnesota Statutes section 216F.04 (d) allows the Commission to place conditions in LWECS permits.

### ***County Ordinance Standards for LWECS***

Minnesota Statutes section 216F.08 authorizes counties to assume responsibility for processing permit applications for LWECS with a combined nameplate capacity of less than 25,000 kilowatts. Pursuant to Minnesota Statutes section 216F.08, Stearns County assumed permitting responsibility for projects under 25 MW in December 2009.

Certain standards adopted by ordinance by Stearns County are more stringent than the Commission's General Permit Standards as set forth in Docket No. E,G-999/M-07-1102. Minnesota Statutes section 216F.081 states that the Commission shall consider and apply those more stringent standards unless the Commission finds good cause not to apply the standards. The Draft Site Permit issued for public comment identified these more stringent standards in Special Condition 13.1.

## **DOC EFP Staff Analysis and Comments**

DOC EFP staff addresses oral and written comments below relating to the siting of the Project and LWECS site permit conditions. EFP staff comments do not address issues related to the Certificate of Need.

### ***Wind Access Buffer Setback***

In consideration of the statutory directive to site LWECS "in an orderly manner compatible with environmental preservation, sustainable development, and the efficient use of resources,"<sup>23</sup> LWECS site permits issued by the Commission and the Environmental Quality Board have long addressed the importance of wind rights and the free flow of wind by providing for a "wind access buffer," between a proposed project and areas where the applicant does not hold wind rights.

In its January 2008 Order adopting "General Wind Turbine Permit Setbacks and Standards for LWECS Facilities Permitted by Counties Pursuant to Minnesota Statute 216F.08," the Commission affirmed a long-standing Wind Access Buffer Setback of three rotor diameters on

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<sup>22</sup> Black Oak Filing – January 17, 2012

<sup>23</sup> MN Stat. 216F.03

the secondary wind axes and five rotor diameters (RD) on the predominant axes.<sup>24</sup> The Commission's found that,

"Therefore the Commission will maintain its current setbacks of three rotor diameters on the secondary wind axis and five rotor diameters on the predominant axis. This buffer setback has been shown to protect wind rights and future development options of adjacent rights owners."<sup>25</sup>

Although the Commission's January 2008 Order established general permit standards for permitting of LWECs less than 25 MW, the 3 by 5 RD setback is typical of most permits issued by the Commission.

The most recent layouts provided for the Project were filed on June 22, 2012.<sup>26</sup> The proposed layouts appear to show that setback buffers for a number of the turbines near the eastern portion of the project overlap setback buffers for some turbines on the adjacent Getty Wind Project.

In the July 10, 2012 comment letter to the ALJ Black Oak and Getty acknowledge that certain of the turbines are within the 3 by 5 RD Wind Access Buffer between the Black Oak and Getty Projects and provide their justification for the spacing.

"The Applicants understand this question to refer to turbines G21 and G1 of the GW87 layout, G2 and G20 of the MM100 Layout, and G1 and G2 of the V112 Layout. All of these turbines are located within the 3 x 5 RD setback buffer between the Black Oak and Getty project boundaries.

This wind resource area is under wind lease and easement agreements and shared between the two projects via an agreement as part of Black Oak and Getty's joint development partnership. Because the wind leases and easements are shared, there should be no need for the Commission to vary the 3 x 5 RD wind access buffer. However, if the Commission believes approval is required, Black Oak and Getty believe such approval is justified based on the shared lease interests and the joint turbine siting activities undertaken to carefully consider the reciprocal impact of each Black Oak and Getty wind turbine."<sup>27</sup>

Stearns County has established in its ordinances a Project Boundary requiring a setback of 5 RD from all parcels of land for which the Permittee has a wind easement for the Project unless the county finds the wake interference to be less than 5 RD.

**EFP Response:** Although the July 10, 2012, comments refer to turbines on the Getty Project (denoted by a "G" preceding the turbine number), EFP staff notes that, based on the maps shown in Schedules 1-6 of Mr. Smith's pre-filed testimony of June 22, 2012, certain turbines on the

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<sup>24</sup> Minnesota Public Utilities Commission "Order Establishing General Wind Permit Standards," January 15, 2008. eDocket ID: [4897855](#)

<sup>25</sup> Ibid., at p. 4

<sup>26</sup> Smith Direct Testimony, at schedules 1 - 6

<sup>27</sup> Black Oak Wind & Getty Post-Hearing Comments, at Response 4

Black Oak Project appear to be located within the 3 by 5 RD Wind Access Buffer:<sup>28</sup> These turbines are:

- B24 and B27 in the GW 87 1.5 MW Turbine layout shown in schedules 1 and 2,
- B21 and B16 on the MM100 1.8 MW turbine layout shown in schedules 3 and 4, and
- B8 in the V112 3.0 MW turbine layout show in schedules 5 and 6.

The proposed permit, at section 13.1, requires Black Oak to site turbines consistent with the more stringent setbacks set forth in the Stearns County wind energy ordinance. This includes a 5 RD setback from lands for which the Permittee has a wind easement for this Project (see proposed findings 40 and 50) . In the case of the adjacent Getty Project, Stearns County filed comments on the LWECS Site Permit Application stating that Getty Wind had demonstrated wake interference of less than 5 RD, and recommending a setback of 5 RD on the prevailing wind axis and 3 RD on the non-prevailing wind access, consistent with the 3 RD by 5 RD Wind Access Buffer identified in the permit.<sup>29</sup> Stearns County did not file comments in the Black Oak Docket and the 5 RD setback is called for in the proposed site permit at section 13.1(d). Special conditions take precedence over other conditions of the permit (see proposed finding 51); consequently the 5 RD setback takes precedence over the 3 RD by 5 RD setback established at section 4.1 of the proposed permit. Based on a cursory review of the layouts provided in schedules 1 – 6 of Mr. Smith's direct testimony, it appears that more turbines than those identified above may not meet this 5 RD setback.

Black Oak's wind rights may extend beyond the site boundary identified on the maps attached to the proposed permit but that information is not in the record at this time. Although Black Oak and Getty have stated in their July 10, 2012, Post-Hearing Comments that wind leases and easement agreements are shared between the two projects, neither has provided evidence of the extent of their wind rights within their separate sites or shared between projects. The permit, at section 10.1, requires the permittee to demonstrate that it has obtained wind rights necessary to construct and operate the Project. In this instance, a filing by Black Oak establishing the extent of its wind rights overlain with a turbine layout prior to the Commission's decision would be useful in clarifying the extent of the wind rights and ensuring that Black Oak is able to comply with the 5 RD setback.

Minnesota Statutes section 216F.081 states that the Commission shall consider and apply those more stringent standards of a county unless the Commission finds good cause not to apply the standards. The Draft Site Permit issued for public comment identified these more stringent standards in Special Condition 13.1, no comments suggesting less stringent standards were submitted during the comment period. EFP staff does not believe that the record provides good cause not to apply the standards (see Finding 51). Black Oak could pursue a finding from the Stearns County Commission that it finds that wake interference is less than 5 RD and provide that as a compliance filing.

As noted in the Project Description above, Black Oak's most recent layouts include two alternate turbine sites for each proposed layout. If Black Oak is unable to demonstrate sufficient wind

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<sup>28</sup> Smith Direct Testimony, at schedules 1-6.

<sup>29</sup> Public Comments received on Getty Wind Company, LLC's LWECS Site Permit Application for the 40 MW Getty Wind Project in Stearns County, January 18, 2012, eDockets ID: [20121-70416-01](#), at p. 19

rights to site the preferred turbine locations, it has the option of using one or more of the alternate turbines in a final layout. Alternatively, Black Oak could construct a project with fewer turbines than shown in the proposed layouts and still be in compliance with the site permit as proposed.

### ***Avian and Bat Impacts and Mitigation***

Bird and bat fatalities are known to occur with wind projects and would be expected to occur as a result of the Project. The joint Getty - Black Oak surveys of wildlife habitat and use of the sites emphasized on avian species.

Black Oak and Getty jointly developed an Avian and Bat Protection Plan (ABPP).<sup>30</sup> The intent of the ABPP, as stated in the permit, is to address steps taken to identify, avoid, minimize and mitigate impacts to avian and bat species during both the construction and operations phase of a project as well as including formal and informal monitoring, training, wildlife handling, documentation, and reporting protocols for each phase of the Project. In response to comments received from EFP staff, DNR, and the United States Fish and Wildlife Service (USFWS), Black Oak and Getty submitted a Revised ABPP on July 10, 2012.<sup>31</sup>

Based on results of the avian surveys conducted for the Project and the adjacent Getty Wind Project, Black Oak revised the turbine layouts to avoid flyways identified in the field surveys. DNR reviewed the proposed turbine layouts submitted by and recommends post construction fatality monitoring consistent with the DNR draft avian and bat fatality protocols for moderate risk sites for all layouts under consideration.<sup>32</sup>

Black Oak and Getty installed bat detectors in the spring of 2012 and, as part of the Getty site permitting process have committed to reporting on the results of the preconstruction monitoring.

**EFP Response:** EFP staff believes the Revised ABPP filed July 10, 2012, provides both the necessary background for understanding potential avian and bat impacts and a framework for avoiding, minimizing, and mitigating potential impacts that are important for the Commission's decision. Issues raised in the comments on the Draft ABPP from the USFWS and DNR have either been incorporated into the Revised ABPP or in sections 6.7, 13.2, 13.3, and 13.4 of the proposed site permit as discussed below.

It has been the Commission's practice for the past few years to require preparation of an ABPP for wind projects. Historically, the ABPP was provided after the issuance of the permit, but before construction. In the case of the Project, Getty and Black Oak provided a Draft ABPP on January 17, 2012.

EFP staff proposes a number of changes to Section 6.7 of the permit to (1) recognize that an ABPP exists for the project and require the Permittee to comply with the provisions of the ABPP filed on July 10, 2012, and (2) characterize the ABPP document as one component of an

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<sup>30</sup> Draft Black Oak and Getty Wind Avian and Bat Protection Plan, January 17, 2012, eDocket ID: [20121-70380-02](#)

<sup>31</sup> Black Oak & Getty Avian and Bat Protection Plan – REVISED July 9, 2012, eDocket ID: [20127-76674-01](#)

<sup>32</sup> DNR Comments on Turbine Layouts for Black Oak and Getty Wind Projects in Stearns County, August 24, 2012, eDocket ID: [20128-78119-01](#).

ongoing compliance system, rather than a static document. The proposed changes separate the required compliance filings:

**6.7.1 ABPP:** The proposed permit requires annual audits of the ABPP as recommended by the DNR in their comments and incorporated by Black Oak and Getty in the Revised ABPP. As proposed the audit would summarize bird and bat fatalities and injuries reported over the previous year and provide estimates of overall bird and bat injuries at the site. The audit would identify any deficiencies or recommended changes in operation to the Project along with a proposed schedule for implementing any changes. The audit provides a mechanism to identify issues related to avian impacts over the potentially 30 year lifetime of the Project.

**6.7.2 Quarterly Incident Reports:** The proposed permit continues the requirement for filing quarterly incident reports and, consistent with the language from the Getty Draft Site Permit, specifies that the report describe the potential cause of the incident and steps taken to avoid future incidents. The proposed permit also requires Black Oak to provide copies of these reports to the USFWS and DNR at the time the reports are filed with the Commission.

**6.7.2 Immediate Incident Reports:** Pursuant to comments from the USFWS the proposed permit requires reporting within 24 hours of any dead or injured bald eagle, regardless of its listing status.

The proposed permit also includes three special conditions related to avian and bat species:

**Section 13.2 Overhead Feeder Lines:** The proposed addition of this section is based on a special condition requiring installation of bird flight diverters developed in response to concerns addressed by USFWS for the Getty Project staff in that docket. The proposed language contains a requirement that Black Oak provide locations of the bird flight diverters to the Commission and DNR before construction and is consistent with language proposed in the Site Permit for the Getty Project.

**Section 13.3 Site Specific Bat Study:** The proposed addition of this section carries forward a special condition from the Getty Draft Site Permit. Black Oak and Getty have installed bat monitors in both project areas and will report on findings from the study by December 15, 2012.

**13.4 Post-Construction Fatality Monitoring:** Pursuant to DNR comments on post-construction fatality monitoring, the proposed site requires Black Oak to design and execute post-construction monitoring consistent with DNR recommendations.

### ***Landowner Participation***

Applicants state that they have approximately 6,500 acres within the project area under site control. One written comment alleged that wind rights may have been obtained under duress and that signed easements may not have been properly executed with the required witness.<sup>33</sup>

**EFP Response:** The Permit, at Section 10.1 requires Black Oak to demonstrate it has obtained wind rights necessary to construct and operate the Project prior to construction.

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<sup>33</sup> Public Hearing Written Comments, August 14, 2012, eDockets ID: [20128-77851-01](#), see Wiener comments

### ***Setbacks***

One commenter questioned why the proposed permit does not require setbacks as stringent as the permit issued by the Commission in the Goodhue Wind Project. Stearns County Ordinance sets forth different requirements than Goodhue County.<sup>34</sup>

**EFP Response:** As discussed above, Stearns County assumed permitting for Projects less than 25 MW in December 2009. Certain standards adopted by ordinance in Stearns County are more stringent than the Commission's General Permit Standards. The Draft Site Permit issued for public comment identified these more stringent standards in permit condition 13.1.

### ***Other Comments***

Public Comments received during the comment period on the Draft Site Permit and as part of the Public Hearing Record addressed many topics. Issues of need for the Project and other Project alternatives are subject of the Certificate of Need before the Commission. Wind resources are addressed in Findings 33 – 36; wind rights and agreements are discussed in Findings 37 – 41 and in the Site Permit at section 10.1; impacts to property values are addressed in Findings 52 – 53; noise impacts are discussed at sections 4.3, 5.1, and 6.6 of the permit and at Findings 54 – 57. Shadow flicker from the Project is addressed in section 6.2 of the permit and in Findings 58 – 62; aesthetic impacts are discussed in Findings 63 – 65; stray voltage is addressed in Finding 73; impacts to farmland are discussed in sections 7.2 – 7.6 of the permit, and in Findings 93 – 95; wildlife impacts are discussed in Findings 101 – 112 and in the Site Permit at sections 6.1, 6.7, 13.2, 13.3, and 13.4; groundwater impacts are addressed in Finding 120; impacts to surface water and wetlands are addressed in the Site Permit at sections 4.6, 6.1, 7.11, and 10.5.1 and at Findings 121 – 123; decommissioning is addressed in the Site Permit at sections 9.1 – 9.3, and in Findings 128 – 132. The Site Permit, at Section 10.2 requires a power purchase agreement or other enforceable mechanism; Black Oak anticipates a contract for sale of the power in late 2012, as noted in Finding 30.

### ***Other Proposed Changes in Proposed Permit***

In addition to the changes in permit language noted above (Sections 6.1, 13.2, 13.3, and 13.5 of the permit), EFP staff proposes some additional changes in permit language between the Draft Site Permit and the proposed Permit. New language is noted in the attached permit by underline and strikeout. Some changes are grammatical and to provide small changes (e.g. use of "Project" rather than "LWECS") language consistent with the proposed Getty permit and are not described further. Additional changes proposed to provide consistency with recently issued permits and permit amendments issued by the Commission, and with the structure of the permit are detailed below:

**Use of Calendar Days:** The draft permit requires a number of compliance filings be submitted within a certain number (generally 10) working days. Recently issued permits have used calendar days, rather than working days, to allow for better compliance tracking. Throughout the Draft Site Permit, EFP staff has changed references to "working days" to "days," both to remove confusion, and to allow for better tracking of the timeliness of compliance filings.

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<sup>34</sup> Ibid., see Mueller Comments, Commission Order issuing LWECS Site Permit for Goodhue Wind Project, August 24, 2011, eDockets ID: [20118-65631-01](#)

**Section 1 Project Description:** The proposed permit includes technical corrections to the ownership of the Black Oak Switching Station and specifies that Black Oak is seeking local permitting for the transmission line and the operations and maintenance facility, not the project substation.

**Section 3 Application Compliance:** The proposed permit corrects the date of the application.

**Section 4.6 Wetlands:** The proposed permit adds language identifying local units of government as implementers of the Minnesota Wetland Conservation Act. The proposed language is consistent with that of the Draft Site Permit for the Getty Project.

**Section 4.7 Native Prairie:** The proposed language is consistent with that of the Draft Site Permit for the Getty Project.

**Section 4.15 Electrical Collector and Feeder Lines:** The proposed language is consistent with that of the Draft Site Permit for the Getty Project.

**Section 5.1 Site Plan:** The proposed language references the statutory definition of construction, consistent with that of the Draft Site Permit for the Getty Project.

**Section 6.1 Biological Inventory/Survey:** The proposed language makes certain technical corrections and also clarifies that this information is not considered trade-secret or proprietary, consistent with the language in the Draft Site Permit for the Getty Project. EFP staff note that although there are constraints on providing the location of threatened or endangered species as well as cultural resources, the presence or absence of these resources within a 7,100 acre site can reasonably be considered to be public information.

**Section 6.2, Shadow Flicker:** The proposed language changes "impact" to "exposure," and clarifies that the Permittee shall file these surveys with the Commission prior to the pre-construction meeting. These changes are consistent with the language adopted by the Commission in its amendment to the Morgan Wind Project (Docket No. IP-6723/WS-09-360).<sup>35</sup>

**Section 6.3 Archaeological Resources:** The proposed language requires the Permittee to mark and promptly notify the Commission and state historical preservation offices of any newly previously unrecorded archaeological site discovered during construction. These changes are consistent with that of the Draft Site Permit for the Getty Project.

**Section 6.8 Project Energy Production:** This section contains technical changes consistent with the language adopted by the Commission in its amendment to the Morgan Wind Project.

**Section 6.9 Wind Resource Use:** This section contains minor technical changes and clarifies that the information is considered public, consistent with the language adopted by the Commission in its amendment to the Morgan Wind Project.

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<sup>35</sup> Commission Order Amending Site Permit In the Matter of Morgan Wind Acquisition Group, LLC's Site Permit for a 31.5 Megawatt Large Wind Energy Conversion System in Redwood and Brown Counties, July 26, 2012, eDocket ID: [20127-77265-01](#)

**Section 8.4 Notification to Commission:** The proposed permit adds a condition, requiring the Permittee to notify the Commission prior to commercial operation; this is used to establish an operation date from which compliance filings will flow. The proposed language is consistent with that in the Getty Draft Site Permit.

**9.2 Site Restoration:** This section adds a clause clarifying that the site must be restored upon early termination of the Project or any turbine within the Project, not just the expiration of the term of the permit. The language is consistent with that in the Getty Draft Site Permit.

**Section 10.2 Power Purchase Agreement:** The proposed language replaces "commitment" with "power purchase agreement or other enforceable mechanism," consistent with the language in the Getty Draft Site Permit.

**Section 10.3 Failure to Commence Construction:** The proposed permit includes a clause referencing the statutory definition of construction, consistent with the language in the Getty Draft Site Permit.

**Section 10.5.2 Compliance with County, City, or Municipal Permits:** Consistent with the change noted in Section 4.6, EFP staff added a clause to this section stating that local authorizations include, but are not limited to, compliance with Minnesota's Wetland Conservation Act. This language is consistent with that in the Draft Site Permit for the Getty Project.

**Section 11.7 Proprietary Information:** The proposed changes remove specific reference to energy production and wake loss data as trade secret information. As discussed in comments relating to Section 6.8 of the permit, the requested information is summary monthly and annual energy production and will be considered public. If Black Oak believes the wake loss information required under Section 6.5 of the site permit constitutes trade secret proprietary information, it may file it as such subject to requirements of applicable law.

### **13.5 Project Substation**

EFP staff has added a special condition clarifying that the location of the Project Substation complies with the setback requirements in the Stearns County Land Use and Zoning Ordinance.

### ***Proposed Findings of Fact and LWECS Site Permit***

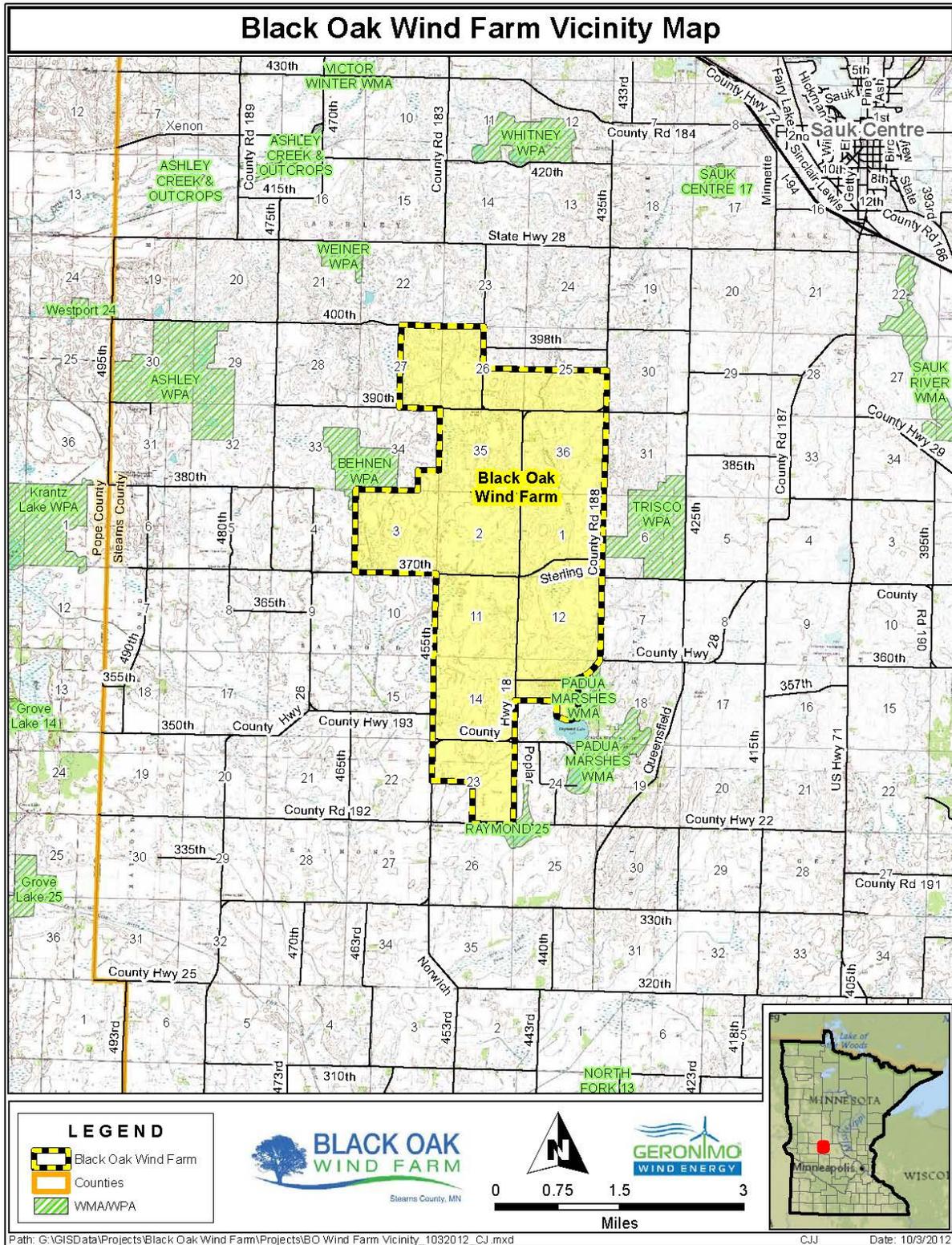
EFP staff has prepared (1) proposed findings of fact, conclusions of law, and order, and (2) a proposed LWECS site permit (attached). The proposed findings address the procedural aspects the process followed, describe the Project, and address the environmental and other considerations of the Project, incorporating some findings that were previously made for other LWECS projects. The site considerations addressed in the proposed findings (such as human settlement, public, health and safety, noise, recreational resources, community beliefs, effects on land based economies, archaeological and historical resources, wildlife, and surface water) track the factors described in the Commission's rules for other types of power plants that are pertinent to wind projects. The proposed permit includes measures to ensure that the Project is constructed safely and that impacts from construction and operation of the Project are minimized or mitigated.

## **EFP Staff Recommendations**

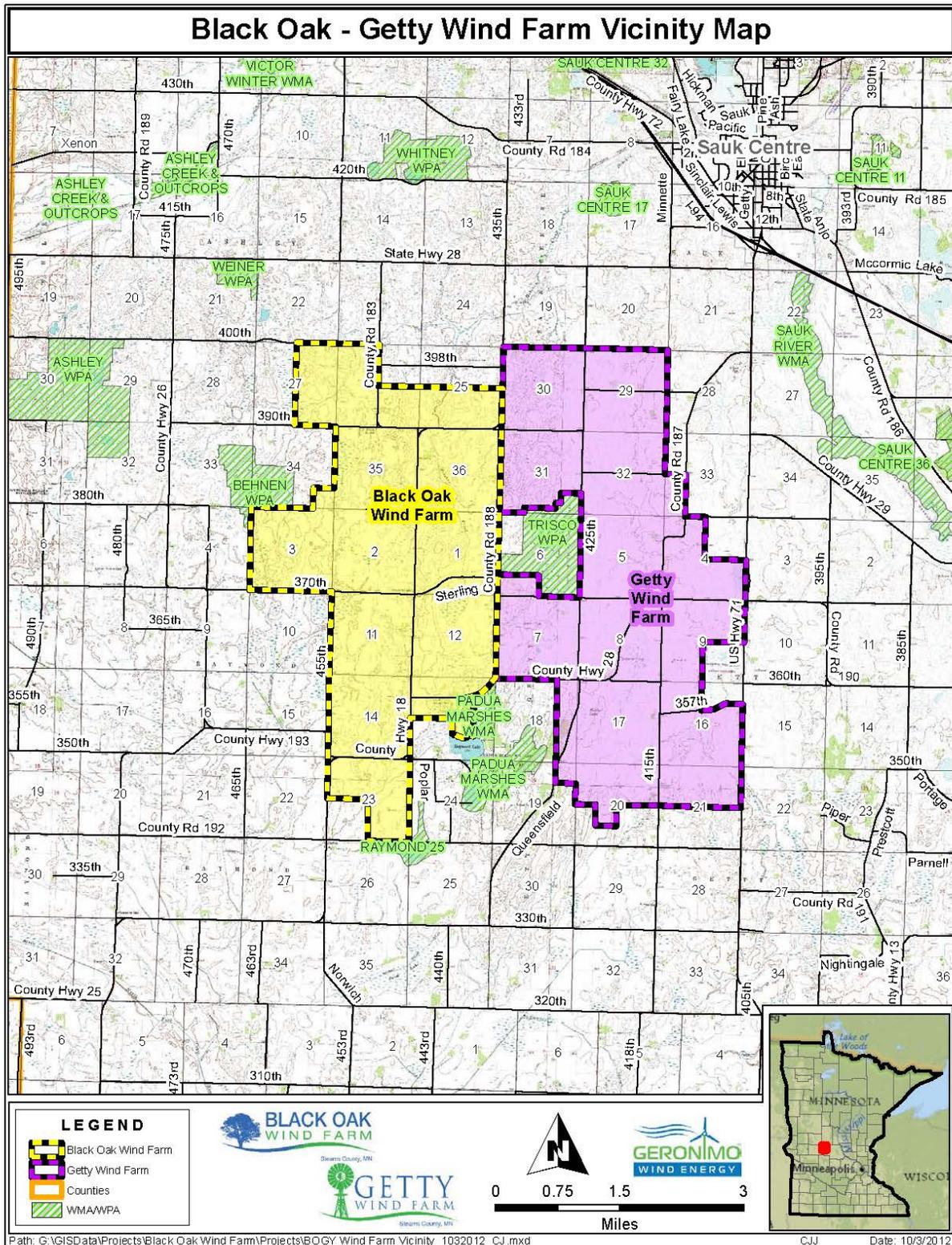
Department EFP staff recommends that the Commission:

1. Approve and adopt the proposed findings of fact, conclusions of law, and order, thereby
  - a. Designating a site for the up to 42 MW Black Oak Wind Farm LWECS in Stearns County
  - b. Issuing a site permit, with appropriate conditions, to Black Oak Wind, LLC, for the up to 42 MW Black Oak Wind Farm LWECS in Stearns County.

**Figure 1: Black Oak Wind Farm Site**



**Figure 2: Black Oak & Getty Wind Projects Vicinity**



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**STATE OF MINNESOTA  
PUBLIC UTILITIES COMMISSION**

Beverly Jones Heydinger  
David Boyd  
J. Dennis O'Brien  
Phyllis Reha  
Betsy Wergin

Chair  
Commissioner  
Commissioner  
Commissioner  
Commissioner

In the Matter of the Site Permit Application  
for a 42 Megawatt Large Wind Energy  
Conversion System in Stearns County,  
Minnesota

**ISSUE DATE:**

**DOCKET NO.**

IP-6853/WS-10-1240

**FINDINGS OF FACT, CONCLUSIONS  
OF LAW AND ORDER ISSUING A  
SITE PERMIT TO BLACK OAK  
WIND, LLC FOR THE BLACK OAK  
WIND FARM**

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The above-entitled matter came before the Minnesota Public Utilities Commission (Commission) pursuant to an application submitted by Black Oak Wind, LLC (Black Oak or Applicant) for a site permit to construct, own, operate, maintain and manage a 42 Megawatt (MW) nameplate capacity Large Wind Energy Conversion System (LWECS) and associated facilities in Stearns County.

A public meeting was held on April 7, 2011, in Sauk Centre, Minnesota. The meeting was presided over by the Department of Commerce (DOC) Energy Facility Permitting (EFP) staff. The meeting continued until all persons who desired to speak had done so. The public comment period closed on April 22, 2011. Comments on the Black Oak Wind Farm (Project) were also received during the public hearing record for the combined Black Oak/Getty Certificate of Need docket (IP-6553 and 6866/CN-11-471). Administrative Law Judge Bruce H. Johnson presided over a public hearing on the Black Oak and Getty projects held in Sauk Centre, Minnesota, on June 26, 2012. The Comment period closed on July 10, 2012 and Administrative Law Judge Johnson issued a Summary of Public Testimony on August 8, 2012.

**STATEMENT OF ISSUE**

Should Black Oak be granted a site permit under Minnesota Statutes section 216F.04 to construct a 42 MW Large Wind Energy Conversion System in Stearns County?

Based upon the record created in this proceeding, the Public Utilities Commission makes the following:

## FINDINGS OF FACT

### Category Findings

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### **Background and Procedure**

1. On December 6, 2010, Black Oak Wind, LLC (Black Oak), filed a site permit application with the Public Utilities Commission for the 42 MW Black Oak Wind Farm.<sup>1</sup>
2. Black Oak is a wholly owned subsidiary of Geronimo Wind Energy, LLC (GWE). The project will be owned and operated by Black Oak upon construction. GWE is a Minnesota-based wind energy developer and has developed other wind projects in Minnesota, including the Prairie Rose Wind Farm currently under construction in Rock

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<sup>1</sup> Black Oak, *Site Permit Application*, December 6, 2010, eDocket ID: [201012-57165-01](#) – 10 (Exhibit 1)

and Pipestone counties, and the 95 MW Paynesville Wind Farm that is currently in development in Stearns County.<sup>2</sup>

3. Department of Commerce Energy Facility Permitting (EFP) staff reviewed the December 6, 2010, application for compliance with the application requirements of Minnesota Rules, part 7854.0500. In its comments and recommendations to the Commission, EFP staff recommended that the Commission accept the application, and that Black Oak update the application to reflect recently adopted Stearns County Ordinance and correct labeling on some maps.<sup>3</sup>
4. On January 14, 2011, a Commission Order accepted the application for the Black Oak Wind Farm.<sup>4</sup>
5. On January 14, 2011, Black Oak filed amended maps and text to the Site Permit Application as recommended in the December 23, 2010, EFP staff comments.<sup>5</sup>
6. Published notice of site permit application acceptance, and opportunity to comment on the site permit application appeared in the *Sauk Centre Herald*, on January 25, 2011.<sup>6</sup> The published notice provided: a) description of the proposed project; b) deadline for public comments on the application; c) description of the Commission site permit review process; and d) identification of the public advisor. The notice published meets the requirements of Minnesota Rules, Part 7854.0600, subpart 2.
7. On January 14, 2011, Black Oak distributed copies of the Site Permit Application for the Black Oak Wind Farm and Notice of Application Acceptance, to government agencies and landowners pursuant to the requirements of Minnesota Rules, Part 7854.0600, subpart 3.<sup>7</sup> On January 19, 2011, EFP Staff mailed a notice of application acceptance to landowners and local government officials pursuant to the requirements of Minnesota Rules, Part 7854.0600, subpart 2.<sup>8</sup>
8. Four comment letters were received prior to the close of the official public comment period on February 11, 2011, and three comments were received after the close of the

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<sup>2</sup> Exhibit 1, at p. 1,

<sup>3</sup> EFP Staff Comments, December 23, 2010, eDocket ID: [201012-57812-01](#) (Exhibit 2)

<sup>4</sup> Commission Order Accepting Black Oak Wind, LLC's LWECS Site Permit Application, January 14, 2011, eDocket ID: [20111-58530-01](#) (Exhibit 3)

<sup>5</sup> Black Oak Wind Farm Site Permit Application for a Large Wind Energy Conversion System: Amended January 2011, January 14, 2011, eDocket ID: [20111-58574-02](#), [20111-58574-03](#), [20111-58574-04](#), [20111-58574-05](#) (Exhibit 4)

<sup>6</sup> Notice of PUC's acceptance of the LWECS Site Permit Application for Black Oak Wind Farm, *Sauk Centre Herald*, January 25, 2011, eDockets ID: [20126-75611-01](#) (Exhibit 5)

<sup>7</sup> Affidavit of Service: Notice of the PUC's acceptance of the LWECS, eDockets ID: [20111-58574-01](#), [20111-58620-01](#) (Exhibit 6)

<sup>8</sup> Notice of Application Acceptance in the Matter of the Site Permit Application for a 40 Megawatt Large Wind Energy Conversion System in Stearns County, January 19, 2011, eDocket ID: [20111-58673-01](#) (Exhibit 7)

comment period.<sup>9</sup> All seven comments are summarized in EFP's March 1, 2011, Comments and Recommendations to the Commission.<sup>10</sup>

9. On March 11, 2011, the Commission Order issued a "Draft Site Permit" for the Black Oak Wind Farm.<sup>11</sup>
10. On March 18, 2011, the Department's EFP staff issued a notice of draft site permit issuance and public information meeting. The published notice provided: a) location and date of the public information meeting; b) description of the proposed project; c) deadline for public comments on the application and draft site permit; d) description of the Commission's site permit review process; and e) identification of the public advisor. The notice meets the requirements of Minnesota Rules, Part 7854.0900 subp 1. This notice was posted on the EFP website and sent to interested persons and governmental agencies on March 21, 2011, as required by Minnesota Rules, Part 7854.0900, subp. 2.<sup>12</sup> Additional notice of the availability of the Draft Site Permit was sent to local units of government on June 21, 2012.<sup>13</sup>
11. Published notice of draft site permit issuance and public information meeting appeared in the *Sauk Centre Herald* on March 22, 2011,<sup>14</sup> and in the *EQB Monitor* on March 21, 2011,<sup>15</sup> as required by Minnesota Rules, Part 7854.0900, subp. 2. The published notice contained all of the information required by Minnesota Rules part 7854.0900 subp. 1.
12. A Public Information Meeting on the Project was held in Sauk Centre on April 7, 2011. The purpose of the meeting was to provide an overview of the Commission permitting process and to receive comments on the draft site permit. Approximately forty (40) people attended the hearing. EFP staff and representatives from GWE were present. EFP staff provided an overview of the LWECS site permitting process, the draft site permit and responded to questions. EFP staff and GWE representatives responded to project specific questions and general questions about wind energy. Project specific questions and comments were related to project benefits for local residents, impacts to local roads, the wind resource in the project area and energy production from the project, wildlife impacts, the number and duration of construction jobs, noise, shadow flicker, stray

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<sup>9</sup> Public & Agency Comments on Black Oak LWECS Site Permit Application, eDockets ID: [20112-59220-01](#), [20112-59451-01](#), [20112-59546-01](#), and [20112-59963-01](#) (Exhibit 8)

<sup>10</sup> EFP Comments and Recommendations on Issuance of Draft site Permit, March 1, 2011, eDocket ID: [20113-60002-01](#) (Exhibit 9)

<sup>11</sup> Commission Order Issuing Draft Site Permit for Public Review and Comment, March 11, 2011, eDocket ID: [20113-60298-01](#) (Exhibit 10)

<sup>12</sup> Notice of Draft Site Permit Availability and Public Information Meeting, March 21, 2011, eDocket ID: [20113-60489-01](#), and [20126-75901-02](#) (Exhibit 11)

<sup>13</sup> Id.

<sup>14</sup> Affidavit of Publication: Notice of Draft Site Permit Availability and Public Meeting, appearing in *Sauk Centre Herald*, March 22, 2011, eDockets ID: [20113-60680-01](#) (Exhibit 12)

<sup>15</sup> Notice of Draft Site Permit Availability and Public Meeting, appearing in *EQB Monitor*, March 21, 2011, eDockets ID: [20126-75538-01](#) (Exhibit 13)

voltage, effects on internet service, impacts to property values, and terms of leases with landowners.<sup>16</sup>

13. EFP staff received 11 written comments on the draft site permit before the close of the comment period on April 22, 2011. In addition to the comments received during the comment period, one was received within one week of the close of the comment period, comments continue to be filed in the docket.<sup>17</sup> As discussed in Finding 17, comments on the Black Oak siting docket were also received during the public hearing record for the combined Black Oak/Getty Certificate of Need docket (IP-6853 and 6866/CN-11-471). In addition to statements of support or opposition to the Project, written comments were related to wildlife impacts, site restoration, and agency review periods for biological documents. Issues related to both oral and written comments received during the comment period and during the Public Hearing are addressed in the Findings and the Site Permit. Wind resources are addressed in Findings 33 – 36; wind rights and agreements are discussed in Findings 37 – 41 and in the Site Permit at section 10.1; impacts to property values are addressed in Findings 52 – 53; noise impacts are discussed at sections 4.3, 5.1, and 6.6 of the permit and at Findings 54 – 57. Shadow flicker from the Project is addressed in section 6.2 of the permit and in Findings 58 – 62; aesthetic impacts are discussed in Findings 63 – 65; stray voltage is addressed in Finding 73; impacts to farmland are discussed in sections 7.2 – 7.6 of the permit, and in Findings 93 – 95; wildlife impacts are discussed in Findings 101 – 112 and in the Site Permit at sections 6.1, 6.7, 13.2, 13.3, and 13.4; groundwater impacts are addressed in Finding 120; impacts to surface water and wetlands are addressed in the Site Permit at sections 4.6, 6.1, 7.11, and 10.5.1 and at Findings 121 – 123; decommissioning is addressed in the Site Permit at sections 9.1 – 9.3, and in Findings 128 – 132. The Site Permit, at Section 10.2 requires a power purchase agreement or other enforceable mechanism; Black Oak anticipates a contract for sale of the power in late 2012, as noted in Finding 30.
14. There were no requests for a contested case hearing submitted during the comment period.
15. On January 17, 2012, Black Oak submitted comments to the Commission providing a draft Avian and Bat Protection Plan (ABPP), providing a revised layout, and informing the Commission of certain project changes resulting from coordination with the adjacent LWECS proposed by Getty Wind, LLC (Getty).<sup>18</sup>

### **Certificate of Need**

16. In the order dated March 11, 2011, the Commission stated that, based on the information in the record to date, the Commission has determined that a certificate of need is not required for the Project.<sup>19</sup> Subsequent to the Commission's order accepting the

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<sup>16</sup> Oral Comments: Draft Site Permit and Public Information Meeting on Black Oak Wind Farm held April 7, 2011, in Sauk Centre. eDockets ID: [20126-75582-01](#) (Exhibit 14)

<sup>17</sup> Public Comments on Draft Site Permit, eDockets ID: [20121-70618-01](#) (Exhibit 15)

<sup>18</sup> Black Oak Filing Updating Turbine Layout Based on Avian Report, January 17, 2012, eDocket ID: [20121-70385-01](#), (Exhibit 16)

<sup>19</sup> Exhibit 10

application, Black Oak, together with Getty, jointly submitted a petition for a Certificate of Need for the Black Oak Wind Farm and the Getty Wind Project, on October 11, 2011.<sup>20</sup>

17. On December 15, 2011, the Commission issued an order authorizing an informal review process for its consideration of the need for the project. A public hearing on the Black Oak and Getty projects was held in Sauk Centre on June 26, 2012;<sup>21</sup> the hearing was noticed to include opportunity for public comments on both the Black Oak and Getty site permits.<sup>22</sup> The Office of Administrative Hearings received eight written comments before the close of the comment period on July 10, 2012.<sup>23</sup> Administrative Law Judge Bruce H. Johnson issued a Summary of Public Testimony on August 8, 2012.<sup>24</sup>
18. A site permit may not be issued until the Commission determines the need for the facility.

### **Project Description**

19. Black Oak is considering three turbine models ranging between 1.5 and 3.0 MW for the Project. Depending upon the turbine model selected, the Black Oak Wind Farm would be comprised of up to 22 REpower MM100 1.8 MW turbines for an installed capacity of 39.6 MW, up to 28 Goldwind 87/1500 1.5 MW turbines for an installed capacity of 42 MW, and up to 13 Vestas V112 3.0 MW turbines for an installed capacity of 39 MW.<sup>25</sup> The Project's preliminary turbine locations and associated facilities are shown on maps filed on June 22, 2012.<sup>26</sup>
20. Hub height for the Repower MM100 1.8 MW turbines would be 80 or 100 meters (262 or 328 feet) with a rotor diameter of 100 meters (328 feet), resulting in an overall height of the tower, nacelle and blade of approximately 427 - 492 feet when one blade is in the vertical position. The hub height for the Goldwind 87/1500 1.5 MW would be 80 or 100 meters (262 or 328 feet) with a rotor diameter of 87 meters (285 feet), resulting in an overall height of approximately 423 to 472 feet when one blade is in a vertical position. The hub height for the Vestas V112 3.1 MW turbine would be 84 or 94 meters (276 or 308 feet) with a rotor diameter of 112 meters (368 feet), resulting in an overall height of approximately 459 to 492 feet when one blade is in a vertical position.<sup>27</sup>
21. Turbine towers would be constructed of tubular steel and consist of three to four sections manufactured from certified steel plates. Each tower will be secured by a concrete foundation of 50 to 65 feet in diameter and 4 to 6 feet deep, depending on turbine size

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<sup>20</sup> Joint Application for Certificate of Need for the Black Oak and Getty Wind Projects, October 11, 2011, eDocket ID: [201110-67221-03](#)

<sup>21</sup> Transcript of Public Hearing held June 26, 2012, July 11, 1012, eDocket ID: [20127-76685-03](#) (Exhibit 26)

<sup>22</sup> Revised Notice of Public Hearing, May 25, 2012, eDocket ID: [20125-75012-02](#) (Exhibit 20)

<sup>23</sup> OAH and Court Reporter, Written Public Comments, August 14, 2012 and July 12, 2012, eDocket ID: [20128-77851-01](#), [20127-76745-02](#), [20127-76745-05](#), [20127-76745-02](#) (Exhibit 28)

<sup>24</sup> OAH, Summary of Public Testimony, August 8, 2012, eDocket ID: [20128-77667-01](#) (Exhibit 26)

<sup>25</sup> Exhibit 16

<sup>26</sup> Black Oak, Hearing Testimony of Patrick Smith with Schedules, June 22, 2012, at Figures 2 – 4, eDocket ID: [20126-75957-03](#) (Exhibit 21)

<sup>27</sup> Exhibit 16, at p. 4

and engineering, soil conditions, turbine tower load specification and cost considerations. Black Oak anticipates that approximately 290 to 740 cubic yards of soil, depending upon turbine size and soil conditions, would need to be excavated.<sup>28</sup>

22. The project will also include an underground automated supervisory control and data acquisition system (SCADA) for real-time monitoring and control of turbine operations. Up to two (2) permanent free standing 80 meter meteorological towers will be used as part of the communication system.<sup>29</sup> Other components of the project include a concrete and steel foundation for each tower, transformers (either within the turbine or pad-mounted), all weather class 5 roads of gravel or similar material, an operation and maintenance (O&M) building, a Sonic Detection and Ranging (SODAR) unit or a Light Detection and Ranging (LIDAR) unit, an underground energy collection system, underground and possibly overhead electric feeder lines, a project substation, and a 69 kV transmission line connecting the project substation to Xcel Energy's Black Oak Switching Station.<sup>30</sup> Black Oak intends to pursue permitting for the 69 kV transmission line and the O&M facility through Stearns County.
23. All turbine models under consideration are three bladed, upwind, active yaw, and active aerodynamic control regulated wind turbines. All turbine models are also equipped with emergency power supplies to allow the turbine to be shut down safely if power from the grid is lost. Each turbine is equipped with a wind direction sensor to allow the turbine to rotate to optimize turbine output based on real-time wind conditions.<sup>31</sup> Turbine towers will be tubular steel painted a non-glare white. The blades will be equipped with lightning protection.<sup>32</sup>
24. Each turbine is interconnected through an underground electrical collection system at 34.5 kV. All of the proposed feeder lines from the Project, approximately six miles, would connect to the project substation.<sup>33</sup> Depending upon whether the Getty and Black Oak projects are constructed together or separately, separate substations may be constructed for each project, or the projects may jointly construct one substation. Black Oak has tentatively identified a substation site in section 12 of Ashley Township. Alternatively, if the Black Oak and Getty projects are constructed simultaneously, Black Oak may tie into the Getty Substation, tentatively located in section 7 of Black Oak Township near the intersection of County Roads 187 and 190 (415<sup>th</sup> Avenue and 370<sup>th</sup> Street).<sup>34</sup> Final substation siting remains dependent on archaeological and biological field surveys as well as soil testing. A 69 kV transmission line will connect the Project with the electrical grid at Xcel Energy's Black Oak Switching Station, located approximately three and one-half miles east of the Getty project's eastern boundary.<sup>35</sup>

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<sup>28</sup> Exhibit 4, at p. 66

<sup>29</sup> Black Oak Wind, LLC and Getty Wind, LLC Post-Hearing Comments, July 10, 2012, eDocket ID: [20127-76674-07](#) (Exhibit 24), at response 10

<sup>30</sup> Exhibit 4, at p. 2

<sup>31</sup> Id., at pp. 11-12

<sup>32</sup> Id., at p. 6

<sup>33</sup> Id.

<sup>34</sup> Exhibit 24, at response 7

<sup>35</sup> Exhibit 4, at p. 9

The interconnection will be in accordance with Midwest System Operator Standards and consistent with the Large Generator Interconnection Agreement.

25. Depending upon final site design Black Oak anticipates that the project would permanently occupy approximately 13.5 to 20 acres when constructed.<sup>36</sup> EFP staff estimates that approximately 60 to 100 additional acres will be temporarily disturbed for contractor staging and assembly areas, turbine foundations, access roads, electric collection lines, substation, and an operations and maintenance facility.
26. Black Oak anticipates construction of approximately four to six miles of access roads.<sup>37</sup> During the construction phase, roads will be approximately 40 feet wide to allow for the large construction equipment; after construction roads will be reduced to approximately 16 feet wide and covered with gravel to allow permanent year-round access to turbine sites. Access roads will be low-profile to allow farm equipment to cross easily.<sup>38</sup>
27. Black Oak has filed an interconnection request with the Midwest Independent Transmission System Operator (MISO) and anticipates it will be able to execute a General Interconnection Agreement (GIA) for the Project in February 2013.<sup>39</sup>
28. Black Oak anticipates the capital costs for the project to be \$82 million and ongoing operating and administrative costs, including property taxes and royalties to landowners, to be approximately \$2.5 million per year.<sup>40</sup>
29. Black Oak anticipates that construction of the Project will begin in mid-2013, with commercial operation expected by the end of 2013.<sup>41</sup>
30. Black Oak anticipates that a contract for sale of power from the Project will be reached in late 2012.<sup>42</sup>

#### **Site Location, Characteristics, and Topography**

31. The Project will be located in an agricultural area south and southwest of the city of Sauk Centre. Black Oak Wind has identified a site of approximately 7,100 acres located in sections 25-27 and 34-36 of Ashley Township (T126N, R35W) and sections 1-3, 11-14, and 23 of Raymond Township (T125N, R35W) in Stearns County.<sup>43</sup> Elevation within the site boundary varies from 1,299 to 1,380 feet above mean sea level.<sup>44</sup>
32. The Padua Wildlife Management Area (WMA) is located approximately 500 feet southeast of the Project Area. Five additional WMAs are located within five miles of the

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<sup>36</sup> Id., at p. 65

<sup>37</sup> Id., at p. 64

<sup>38</sup> Exhibit 4, at pp. 64-65

<sup>39</sup> Exhibit 21, at p. 13

<sup>40</sup> Exhibit 4, at p. 68

<sup>41</sup> Exhibit 21, at p.12

<sup>42</sup> Id., at p. 13

<sup>43</sup> Exhibit 4, at p. 2

<sup>44</sup> Id., at p. 15

Project Area. The Behnen and Trisko Waterfowl Production Areas (WPAs) are adjacent to the site; 15 additional WPAs are located within five miles of the Project Area.<sup>45</sup> Black Oak has not identified any conservation easements within the site.<sup>46</sup>

### **Wind Resource Considerations**

33. Based on data obtained from three temporary meteorological stations within the site, Black Oak calculated long-term monthly average wind speeds of between 6.8 and 8.1 meters/second (15.2 to 18.1 miles per hour), with a mean wind speed of 7.7 meters/second (17.2 miles per hour).<sup>47</sup> The strongest wind speeds occur during the months of October through January, while July and August typically have the lowest average wind speeds. Wind speeds are generally greater in the evening and nighttime hours and lower in the morning at midday.<sup>48</sup>
34. The prevailing wind directions are from the northwest and the south.<sup>49</sup> Black Oak intends to develop a final layout that maximizes the Project's energy production while minimizing impacts from the Project. The final site layout will be dictated by the topography of the site, the turbine model selected, and required setbacks from homes, environmental constraints, and areas where Black Oak does not have site control.<sup>50</sup>
35. Turbine placement, aside from other resource features where setbacks or wind access buffers are required, will be designed to provide sufficient spacing between the turbines to minimize internal wake losses. Given the prevalence for southerly and northerly winds, the spacing is widest in the north-south direction. As addressed in section 4.10 of the site permit, greater or lesser spacing between the turbines or turbine strings may be used in areas where the terrain dictates the spacing. Sufficient spacing between the turbines is utilized to minimize wake losses when the winds are blowing parallel to the turbines.
36. Assuming net capacity factor of between 35 and 40 percent, projected average annual output from the Project, based on a nameplate generating capacity of 42 MW, will be approximately 129,000 to 147,000 MWh per year.<sup>51</sup>

### **Wind Rights and Easement/Lease Agreements**

37. In order to build a wind facility, a developer must secure site leases and easement agreements to ensure access to the site for construction and operation of a proposed project. These lease or easement agreements also prohibit landowners from any activities that might interfere with the execution of the proposed project. Land and wind rights will need to encompass the proposed LWECs, including all associated facilities, including but

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<sup>45</sup> Id., at pp. 27 - 29

<sup>46</sup> Exhibit 24, at response 11

<sup>47</sup> Exhibit 4, at pp. 60 - 61

<sup>48</sup> Exhibit 4, at p. 61

<sup>49</sup> Id., at Figure 9-3.

<sup>50</sup> Id., at p. 3

<sup>51</sup> Exhibit 24, at response 13

not limited to wind and buffer easements, wind turbines, access roads, meteorological towers, and the electrical collection system.

38. Black Oak exerts some form of site control, in the form of signed wind leases, easements or options, over approximately 6,565 acres, or approximately 92 percent of the land within the site.<sup>52</sup> Section 10.1 of the site permit requires Black Oak to demonstrate that it has obtained the wind rights necessary to construct and operate the Project at least 14 days before the pre-construction meeting.
39. In its January 2008 *Order Establishing General Wind Permit Standards*, the Commission affirmed a Wind Access Buffer Setback of three rotor diameters on the secondary wind axis and five rotor diameters on the predominant axis to protect wind rights of adjacent property owners.<sup>53</sup> As noted in Finding 50, Stearns County has adopted by ordinance a setback of a setback of five rotor diameters from all parcels of land for which the Permittee has a wind easement for this Project, unless the Stearns County Board finds the wake interference is less than five rotor diameters.
40. The proposed project layouts shown in the June 22, 2012, filing show at least one turbine in each layout located within the Wind Access Buffer Setback between the Project and the adjacent Getty project.<sup>54</sup>
41. Black Oak and Getty contend that in cases where turbines are located within the Wind Access Buffer Setback, wind lease and easement agreements are shared between the two projects via an agreement as part of Black Oak and Getty's joint development partnership. Black Oak and Getty further contend that because the wind leases and easements are shared, there should be no need for the Commission to vary the 3 x 5 RD wind access buffer.<sup>55</sup>

### **Site Considerations**

42. Minnesota Statutes chapter 216F and Minnesota Rules chapter 7854 apply to the siting of LWECS. The rules require an applicant to provide a substantial amount of information to allow the Commission to determine the potential environmental and human impacts of the proposed project and whether the project is compatible with environmental preservation, sustainable development, and the efficient use of resources.<sup>56</sup> Pursuant to Minnesota Statutes section 216F.02, certain sections in Minnesota Statutes chapter 216E (Minnesota Power Plant Siting Act) apply to siting LWECS, including section 216E.03, subdivision 7 (considerations in designating site and routes). The analysis of the environmental impacts required by Minnesota Rule 7854.0500, subpart 7 satisfies the environmental review requirements; no environmental assessment worksheet or environmental impact statement is required for a proposed LWECS project.<sup>57</sup> Therefore,

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<sup>52</sup> Id., at response 14

<sup>53</sup> Commission Order Establishing General Wind Permit Standards, January 15, 2008. eDocket ID: [4897855](#)

<sup>54</sup> Exhibit 21, at Schedules 1-6

<sup>55</sup> Exhibit 24, at response 4

<sup>56</sup> Minn. Stat. § 216F.03 and Minn. R. 7854.0500

<sup>57</sup> Minn. Rule 7854.0500, subp. 7

environmental review is based on the application and the record. The following analysis addresses the relevant criteria that are to be applied to a LWECS project.

### **Human Settlement**

43. The Project is located within a moderately populated rural area, fewer than 10 people per square mile, in Stearns County. There are 23 homes within the Project boundary.<sup>58</sup> The nearest city, Sauk Centre, is located approximately two miles northeast of the Project. As established in section 4.2 of the site permit, Black Oak will maintain a setback distance of at least 1,000 feet from all residences unless a waiver has been signed by the property owner. In all cases the setback shall be sufficient to comply with the noise standards established by the Minnesota Pollution Control Agency. As established in section 4.1 of the site permit, Black Oak will also maintain a setback of five rotor diameters (1280 – 1680 feet) on the prevailing wind axis from non-participating landowner's property lines and three rotor diameters (760 – 985 feet) on the non-prevailing wind axis.
44. The Project is not expected to affect any existing water wells, as turbine locations will be set back from residences.<sup>59</sup>
45. There will be no displacement of existing residences or structures in siting the wind turbines and associated facilities.

### **Zoning and Land Use**

46. The Project is located within the Agricultural District A-160 zoning classification established in the *Stearns County Land Use and Zoning Ordinance 439*. The A-160 zoning classification limits residential development by establishing a one dwelling per 160 acres.<sup>60</sup> Approximately 84 percent of the Project Area is comprised of cultivated row crops and 14 percent of the Project Area is comprised of grasslands.<sup>61</sup>
47. Minnesota Statutes section 216F.08 authorizes counties to assume responsibility for processing permit applications for LWECS with a combined nameplate capacity of less than 25,000 kilowatts. Pursuant to Minnesota Statutes section 216F.08, Stearns County notified the Commission in writing on December 10, 2009, that the Stearns County Board of Commissioners assumed permitting responsibility for projects under 25 megawatts. The Stearns County Board amended its ordinance governing Wind Energy Conversion Systems on December 21, 2010.<sup>62</sup>
48. Certain standards adopted by ordinance by Stearns County are more stringent than the Commission's General Permit Standards as set forth in Docket No. E, G-999/M-07-1102. Minnesota Statutes section 216F.081 states that the Commission shall consider and

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<sup>58</sup> Exhibit 4, at p. 11

<sup>59</sup> Exhibit 4, at p. 39

<sup>60</sup> Id., at p. 18

<sup>61</sup> Id., at p. 43

<sup>62</sup> Stearns County, Stearns County Land Use and Zoning Ordinance #439, Printed May 15, 2012, <http://www.co.stearns.mn.us/Portals/0/docs/Document%20Library/ordinances/ord439.pdf>, at Section 6.60

apply those more stringent standards unless the Commission finds good cause not to apply the standards.

49. The Draft Site Permit identified these more stringent setbacks as a special condition in section 13.1, Application of County Standards, to allow for public to comment on whether these more stringent standards were appropriate for the site permit. In summary, Stearns County had adopted more stringent standards related to setbacks from: (1) property lines; (2) Occupied structures, Stearns County differentiates between occupied structures of participating and non-participating property owners; and (3) a setback of 5 rotor diameters from all parcels of land for which the Permittee has a wind easement for this Project, unless the Stearns County Board finds the wake interference is less than 5 rotor diameters. The Stearns County ordinance also precludes turbines from being placed within a Shoreland Overlay District and requires certain assumptions in modeling for shadow flicker.
50. No comments were received opposing the more stringent setbacks or identifying any good cause not to apply them. All special conditions identified in the Draft Site Permit are carried forward and take precedence.
51. Under section 7.11.4 of the *Stearns County Land Use and Zoning Ordinance 439*, the project substation is a permitted use in all Stearns County zoning districts subject to the setback provisions applicable in the applicable zoning classification. The site permit, at section 13.5, requires the project substation to be sited in compliance with setback standards established for the A-160 zoning classification under section 9.1.11 of the *Stearns County Land Use and Zoning Ordinance 439*.<sup>63</sup>

### **Property Values**

52. Property values are influenced by a complex interaction between factors specific to each individual piece of real estate as well as local and national market conditions; consequently the effect of one particular project on the value of one particular property is difficult to determine.
53. In a 2009 Lawrence Berkeley National Laboratory conducted a nationwide study on the potential impacts of wind projects on property values.<sup>64</sup> Results from that study indicated that property values near wind projects are not negatively impacted and that home buyers and sellers consider a property's scenic vista when determining a sale/purchase price. In their consideration of a moratorium on wind development, the Stearns County Commission looked at the potential impact to property values from wind projects. The Stearns County Assessor's Office prepared "A Study of Wind Energy Conversion Systems in Minnesota." As part of the study, the Assessor's office surveyed counties with LWECs to assess impacts on property values as a result of wind farms. Six counties

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<sup>63</sup> Stearns County, *Stearns County Land Use and Zoning Ordinance 439*, May 15, 2012, <http://www.co.stearns.mn.us/Portals/0/docs/Document%20Library/ordinances/ord439.pdf>

<sup>64</sup> Hoen et al, *The Impact of Wind Power Projects on Residential Property Values in the United States: A Multi-Site Hedonic Analysis*, Ernest Orlando Lawrence Berkely National Laboratory, December 2009, <http://eetd.lbl.gov/ea/ems/reports/lbnl-2829e.pdf>

in southern Minnesota (Dodge, Jackson, Lincoln, Martin, Mower, and Murray counties) with large wind energy conversion systems responded to the survey. Although the study did not find any changes in property valuation to properties hosting a wind tower, the study also concluded that there was insufficient data to allow for a reasonable analysis of the development of wind facilities on property values.<sup>65</sup> The study also cited a study from the Renewable Energy Policy Project of 25,000 properties within five miles of a wind project in ten communities in the United States, and concluded that property values were not negatively impacted. The study also cited a study conducted by the Royal Institute of Chartered Surveyors, which found that almost 30 percent of respondents reported a decrease in property values for properties located near wind facilities. In their decision not to adopt a moratorium on LWECS, the Stearns County Commission found that "the impact of wind farms will have a negligible effect on property values."<sup>66</sup>

## Noise

54. The operation of the wind turbines would produce noise. Turbines produce mechanical noise (noise due to the gearbox and generator in the nacelle) and aerodynamic noise (noise due to wind passing over the turbine blades).<sup>67</sup>
55. Noise impacts to nearby residents will be factored into the turbine micro-siting process. Black Oak must demonstrate the Project can meet the noise standard pursuant to Minnesota Rules chapter 7030 (site permit, sections 4.3 and 6.6). Noise levels have been predicted by a noise modeling program and will be verified per section 5.1 to be compliant with the Minnesota Pollution Control Agency (PCA) Daytime and Nighttime L10 and L50 Limits as stated in Minn. Rule 7030.0040. These standards describe the limiting levels of sound established on the basis of present knowledge for the preservation of public health and welfare. These standards are consistent with speech, sleep, annoyance, and hearing conversation requirements for receivers within areas grouped according to land activities by the Noise Area Classification (NAC) system established in Minn. Rule. 7030.0050. The NAC-1 was chosen for receivers in the Project Area since this classification includes farm houses as household units. The nighttime L50 limit of 50 dBA is the most applicable stringent state limit.
56. Black Oak estimates its most recent layouts would produce a maximum cumulative calculated noise level of 43.6 to 45 dBA at the nearest noise sensitive receptor, with an average project-related noise level of 32.3 to 36.1 dBA; the highest maximum noise levels were for the 1.8 MW turbine layout, the highest average noise levels were for the 1.5 MW turbine layout. Maximum calculated noise levels for all turbine models are at least 5 dB below the nighttime L50 noise limit of 50 dBA.<sup>68</sup>

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<sup>65</sup> Exhibit 15, at pp. 6 – 10

<sup>66</sup> Stearns County Commission, *Stearns County Resolution 10-46: Resolution Adopting Findings of Fact for the Proposed Stearns /county Interim Ordinance Number 444 Imposing a Moratorium on Large Wind Energy Conversion Systems (LWECS) for Projects Five (5) Megawatts and Greater*, June 15, 2010, posted to Paynesville Wind Docket, eDockets ID: [20106-52067-01](https://www.dockets.org/CaseDetails.aspx?CaseID=20106-52067-01) .

<sup>67</sup> Minnesota Department of Health. *Public Health Impacts of Wind Turbines*. May 22, 2009, <http://www.health.state.mn.us/divs/eh/hazardous/topics/windturbines.pdf>

<sup>68</sup> Exhibit 21, at p. 6 and schedules 7 - 9

57. Black Oak will conduct a post-construction noise study as required in section 6.6 of the Permit. The noise study will determine the noise levels at different frequencies and at various distances from the turbines at various wind directions and speeds. The purpose of the post-construction noise study report is to quantify sound generated by the operational LWECS at receptors, compare results to Minnesota Noise Standards, confirm the validity of the pre-construction noise modeling and assess the modeling as a predictor of probable compliance with Minnesota noise standards.

### **Shadow Flicker**

58. Shadow flicker can be described as alternating changes of light intensity at a given receptor. Shadow flicker does not occur when the sun is obscured by clouds or fog, when the turbine rotor is oriented parallel to the receptor, or when the turbine is not operating. Shadow intensity, or how “light” or “dark” a shadow appears at a specific receptor, will vary with the distance from the turbine. Closer to a turbine, the blades will block out a larger portion of the sun’s rays and shadows will be wider and darker. Receptors located farther away from a turbine will experience much thinner and less distinct shadows since the blades will not block out as much sunlight. Shadow flicker usually occurs in the morning and evening hours when the sun is low in the horizon and the shadows are elongated. Shadow flicker will be greatly reduced or eliminated within a residence when buildings, trees, blinds, or curtains are located between the turbine and receptor.
59. Shadow flicker computer models simulate the path of the sun over the year and assess at regular time intervals the possible shadow flicker across a project area. The outputs of the model are useful in the design phase of a wind farm.
60. Shadow flicker consultants generally agree that flicker is not noticeable beyond about 10 rotor diameters from a wind turbine.<sup>69</sup> Minnesota has not adopted a standard of acceptable hours for shadow flicker. In December 2010 the Wisconsin PSC adopted administrative rules specifying general permit standards a political subdivision (a city, village, town or county) may impose on the installation or use of a wind energy system. Political subdivisions that choose to regulate wind energy systems may not promulgate regulations more restrictive than those identified in the PSC's rules. The rules became effective in March 2012.<sup>70</sup> Under the Wisconsin Rules, a political subdivision may prohibit a wind energy system from producing shadow flicker more than 30 hours per year at the homes of non-participating residences or occupied community buildings, and may require a wind energy system owner to mitigate shadow flicker that occurs 20 or more hours per year.<sup>71</sup> Several jurisdictions in other countries have established guidelines for acceptable levels of shadow flicker based on certain assumptions.
61. Black Oak provided a preliminary shadow flicker analysis for both expected case and worst case scenarios. Under the expected case, which uses real and weather data to simulate ground conditions, the average home near the Project could be expected to be

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<sup>69</sup> Environmental Health Division, Minnesota Department of Health, *Public Health Impacts of Wind Turbines*, May 22, 2009, at 14, <http://www.health.state.mn.us/divs/eh/hazardous/topics/windturbines.pdf>

<sup>70</sup> Wisconsin Public Service Commission, Wind Siting Rules, <http://psc.wi.gov/renewables/windSitingRules.htm>

<sup>71</sup> Wisconsin Administrative Code, Chapter 128, [http://docs.legis.wisconsin.gov/code/admin\\_code/psc/128.pdf](http://docs.legis.wisconsin.gov/code/admin_code/psc/128.pdf)

exposed to approximately 1.3 to 2.7 hours of shadow flicker per year, with some homes experiencing up to 17.1 and 36.5 hours, depending upon the turbines used. Under a worst case scenario, which assumes that the sun is always shining, the turbines are always in motion and oriented towards the homes, a typical home could expect exposures of between 5.3 and 10.6 hours per year. Depending upon layout, modeling shows some homes experiencing up to 50.3 to 92.4 hours per year under a worst case scenario.<sup>72</sup> The analysis does not differentiate between participating and non-participating landowners.

62. As directed by section 6.2 of the site permit, the Permittee shall provide data on shadow flicker impacts on each residence of non-participating landowners and participating landowners prior to construction. Information shall account for topography and the physical characteristics of the selected wind turbine. Black Oak Wind will use the results of the modeling in developing a final layout to minimize impacts to residents.

### **Visual Values**

63. The placement of up to 28 turbines for the Project, as well as up to 26 turbines on the adjacent Getty project, will alter the appearance of the area. The existing landscape in the Project vicinity is characterized by agricultural fields, scattered farmsteads and associated windbreaks, and gently rolling topography. The turbines, with heights of up to 492 feet from ground to tip of fully-extended blade, will be prominent features on the landscape. There will be intermittent, expansive views of the turbines to local residents, passing motorists on local roads, and from the nearby WMAs and WPAs. Motorists and drivers may travel within 250 feet of some turbines.
64. The visual impact of the wind turbines will be reduced by the use of a neutral paint color. The only lights will be those required by the Federal Aviation Administration (site permit at section 7.18). All site permits issued by the Commission require the use of tubular towers; therefore, the turbine towers will be uniform in appearance. Blades used in the proposed project will be white or grey. The project site will retain its overall rural character. The turbines and associated facilities necessary to harvest the wind for energy are not inconsistent with existing agricultural practices.
65. Many factors influence how a wind energy facility is perceived. Factors may include levels of visual sensitivity of individuals, viewing conditions, visual settings, and individual ideas and experiences. Distance from a turbine(s) and activities within and near the project area, landscape features such as hills and tree cover, as well as an individual's personal feelings about wind energy technology can all contribute to how a wind energy facility is perceived. Existing wind plants have altered the landscape elsewhere in Minnesota from agricultural to wind plant/agricultural. This project will modify the visual character of the area. Visually, the Project will be similar to other LWECS projects located in rural areas in Minnesota.

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<sup>72</sup> Exhibit 21, at p.7

## **Health and Safety**

66. There are no public airports within the Project boundary. There are four airports within 20 miles of the Project boundary. The Sauk Centre Municipal Airport is the nearest airport, located approximately four miles northeast of the Project boundary and primarily serves local navigation and has an average of 112 flights per week on its two runways.<sup>73</sup>
67. Black Oak has not yet been issued a “no hazard” determination from the Federal Aviation Administration (FAA). Section 4.12 of the site permit requires the Permittee to avoid placing wind turbines or associated facilities in a location that could create an obstruction to navigable airspace of public or licensed private airports. The Permittee must comply with the requirements of the Minnesota Department of Transportation, Department of Aviation and FAA (site permit, sections 10.5.1 and 4.12).
68. A preliminary review of the project area using the screening tool developed by the US Department of Defense to assess potential impacts to Long-Range and Weather Radar shows the project to be outside of the anticipated impact zones for NEXRAD weather radar and Air Defense and Homeland Security Radars.<sup>74</sup>
69. Air traffic may be present near the Project for crop dusting of agricultural fields. Crop dusting is typically carried out during the day by highly maneuverable airplanes or helicopters. The installation of wind turbines in active croplands and installation of overhead collector lines, if needed, will create a potential for collisions with crop dusting aircraft. Any new overhead collector lines are expected to be similar to existing distribution lines and located along the edges of fields and roadways, minimizing the potential for collisions with aircraft. The turbines themselves would be visible from a distance and lighted according to FAA guidelines (section 7.18 of the site permit). The permanent meteorological towers will be free standing and have lighting consistent with the turbines.
70. Possible health concerns associated with wind turbines and transmission of electricity generally include those from electric and magnetic fields (EMF). The term EMF refers to electric and magnetic fields that are present around electrical devices. Electric fields arise from the voltage or electrical charges and magnetic fields arising from the flow of electricity or current that travels along transmission lines, power collection (feeder) lines, substation transformers, house wiring and electrical appliances. The intensity of the electric field is related to the voltage of the line and the intensity of the magnetic field is related to the current flow through the conductors. When operating, the proposed Project will generate electromagnetic fields.
71. EMF from underground electrical collection lines dissipates very close to the line because they are installed below ground within insulated shielding. The voltage for the feeder lines for this project would be 34.5 kV. EMF associated with the transformers at the base

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<sup>73</sup> AirNav.com, <http://www.airnav.com/airport/D39>

<sup>74</sup> US Federal Aviation Administration, *DOD Preliminary Screening Tool*, <https://oeaaa.faa.gov/oeaaa/external/gisTools/gisAction.jsp>

of each turbine completely dissipates within 500 feet from the transformer.<sup>75</sup> Turbines will be set back at least 1,000 feet from residences unless a waiver is signed by the landowner.

72. The Commission has consistently found that there is insufficient evidence to demonstrate a causal relationship between EMF exposure and adverse human health effects.
73. Stray voltage, also referred to as neutral-to-earth voltage, is sometimes raised as an issue with transmission lines in relation to effect on livestock. The Project is not expected to create stray voltage because the Project does not connect directly to residences or farms in the area and does not change on-farm electrical service.<sup>76</sup>
74. In winter months ice may accumulate on the wind turbine blades when the turbines are stopped or operating very slowly. Furthermore, the anemometer may ice up at the same time, causing the turbine to shut down during any icing event. As weather conditions change, any ice will normally drop off the blades in relatively small pieces before the turbines resume operation. This is due to flexing of the blades and the blades' smooth surface. Although turbine icing is an infrequent event, it remains important that the turbines are not sited in areas where regular human activity is expected below the turbines during the winter months. The setback requirements in section 4 of the site permit provide further assurance that the turbines will be placed an adequate distance from residences, roads and other areas of human activity.
75. Black Oak will prepare an emergency response plan (fire protection and medical emergency plan) in consultation with the emergency responders having jurisdiction over the Project area (site permit, section 7.16). As with any large construction project, some risk of worker or public injury exists during construction. Black Oak and its construction representatives and workers will prepare and implement work plans and specifications in accordance with applicable worker safety requirements during construction of the Project. Black Oak will also control public access to the Project during construction and operation. Black Oak will provide security during construction and operation of the project, including fencing, warning signs, and locks on equipment and facilities. Black Oak will also provide landowners, interested persons and public officials and emergency responders with safety information about the project and its facilities (site permit, sections 7.15 and 7.16).
76. Each turbine will be clearly labeled to identify each unit, and a map of the site with the labeling system will be provided to local authorities as part of the emergency response plan (site permit, sections 7.17 and 7.16).

### **Public Services and Infrastructure**

77. The Project is expected to have minimal effects on existing public infrastructure. Except for a short period of time during construction and occasionally during operation and

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<sup>75</sup> Exhibit 4, at p. 30

<sup>76</sup> Department of Commerce, *Environmental Report: Black Oak/Getty Wind Project*, May 2012, eDocket ID: [20125-74522-01](https://www.erc.gov/eDocket/20125-74522-01)

maintenance activities, the Project will not generate an increase in traffic volumes or daily human activity. The construction contractor will repair any road damage that may occur during the construction of the Project (site permit, section 7.8).

78. The Project will require the use of public roads to deliver construction supplies and materials to the work site, resulting in wear and tear on roads. The Project is located approximately three miles south of Interstate 94, and is crossed by a number of county and township roads. Other than short-term impacts during construction, no significant permanent changes in road traffic patterns or volume are expected. Black Oak will provide the Commission, township, and county officials identification of all roads to be used for the Project at least 14 days prior to pre-construction meeting, including the timing of the delivery of towers and turbines and arrival of the crane to erect project equipment (site permit, 7.8.1). Prior to using the roads, Black Oak will make satisfactory arrangements with the appropriate road authorities concerning use, maintenance, and repair of roads to be used during the construction of the Project (site permit, 7.8.1).
79. Black Oak will construct approximately four to six miles of access roads connecting the turbines with public roads. Access roads will be low-profile to allow farm equipment to cross easily. The typical access road will be approximately 40 feet wide during the construction phase of the Project to accommodate large cranes required for installation. Following construction, the roads would be reduced to approximately 16 feet in width and covered in Class 5 gravel (or similar material) to provide year-round access. Areas that were temporarily disturbed during construction will be re-graded to natural contours, filled, and dressed as needed.<sup>77</sup> The specific turbine locations will determine the amount of roadway that will be constructed for this Project. Temporary disturbances during construction of the Project include crane pads at each turbine site, temporary travel roads for the cranes, temporary laydown areas around each turbine, trenching in the underground electrical collection system, and storage/stockpile area.
80. Access roads shall be constructed in accordance with all necessary township, county or state road requirements and permits (site permit section 7.8.2). During operation and maintenance of the wind plant, operation and maintenance crews, while inspecting and servicing the wind turbines, will use access roads. Periodic grading and maintenance activities will be used to maintain road integrity. Black Oak may do this work or contract it out.
81. If access roads are installed across streams or drainage ways Black Oak, in consultation with the Minnesota Department of Natural Resources (DNR), will design, shape and locate the road so as not to alter the original water flow or drainage patterns. Any work required below the ordinary high water line, such as road crossings or culvert installation, will require a permit from the DNR (site permit at 4.6 and 7.8.2).
82. Black Oak will bury all SCADA communications cables within or adjacent to land necessary for turbine access roads (site permit section 4.14).

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<sup>77</sup> Exhibit 4, at pp. 64 - 65

83. The proposed project will have approximately six miles of cables for the collector lines on private property within the wind farm.<sup>78</sup> Collector lines carrying electrical power from turbines to electrical interconnection points will be buried underground and placed within or adjacent to turbine access roads unless otherwise negotiated with affected landowners (site permit, section 4.15). Feeder lines carrying power from internal project interconnection points to the Project substation may be overhead or underground as negotiated with individual landowners (site permit section 4.15). The Applicant anticipates that feeder lines will also be buried; if conditions exist that would prevent the feeder lines from being buried, feeder lines will be installed overhead.<sup>79</sup>
84. Prior to construction, Black Oak will contact Gopher State One Call to locate underground facilities so they can be avoided. Further, section 7.15 of the site permit requires the Permittee to submit the location of underground cables, collector, and feeder lines to Gopher State Once Call.
85. In areas where Project facilities cross or may otherwise affect existing telephone lines or equipment Black Oak will enter into agreement with telecom service providers to avoid interference with existing telecom facilities.<sup>80</sup> Black Oak will fulfill, comply with, and satisfy all Institute of Electrical and Electronics engineers, Inc. (IEEE) standards applicable to the Project with respect to avoiding interference with communication systems (site permit, section 4.15).
86. Under section 6.4 of the site permit Black Oak may not operate the Project so as to cause microwave, television, radio, telecommunications, or navigation interference in violation of Federal Communication Commission regulations or other law. In concordance with section 6.4 of the site permit, Black Oak will prepare an assessment of communication resources in the Project vicinity to provide data that can be used in the future to determine whether elements of the Project are the cause of disruption or interferences with television, or radio reception, microwave patterns, or telecommunications signals. The permit requires Black Oak to take timely measures to correct any interference that may occur as a result of the Project. Black Oak has identified one microwave beam path crossing the southern part of the Project.<sup>81</sup>
87. There are no pipelines or railroads located within the project boundary.<sup>82</sup>
88. Great River Energy (GRE) owns a 400 kV Direct Circuit transmission line that crosses the Project.<sup>83</sup> There are no established setbacks from high voltage transmission lines, but Black Oak Wind anticipates maintaining a setback of 150 meters (492 feet) from the 400 kV DC line, consistent with that of the adjacent Getty project.<sup>84</sup> A portion of Xcel Energy's Fargo – St. Cloud 345 kV transmission line will cross through the northern portion of the Project.

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<sup>78</sup> Id., at 9

<sup>79</sup> Id.

<sup>80</sup> Id., at p. 23

<sup>81</sup> Exhibit 4, at p. 23

<sup>82</sup> Id., at p. 24

<sup>83</sup> Id.

<sup>84</sup> Exhibit 21, schedules 2, 4, and 6

### **Recreational Resources**

89. Wildlife Management Areas (WMAs) are established to protect lands and waters that have a high potential for wildlife production, public hunting, trapping, fishing and other compatible recreational uses. These DNR lands are acquired and developed primarily with hunting license fees. There are no WMAs within the Project boundary, however the Padua WMA is located just south of the Project and the Tower, Miller, Victor Winter, Sauk River, and Spirit Marsh WMAs are located within approximately five miles of the Project.<sup>85</sup> Waterfowl Production areas (WPAs) are acquired as public land or protected through perpetual easement as part of the US Fish and Wildlife Services (USFWS) National Wildlife Refuge System to provide habitat for a variety of birds and wildlife. WPAs also provide outdoor recreational opportunities such as hunting, hiking, and wildlife watching. The Behnen and Trisko WPAs are adjacent to the Project and 15 other WPAs are located within five miles of the Project.<sup>86</sup>
90. Scientific and Natural Areas (SNAs) are designated to protect rare and endangered species habitat, unique plant communities, and significant geologic features that possess exceptional scientific or educational values; the Sedan Brook Prairie SNA is located approximately five miles south of the Project boundary. There are no National Wildlife Refuges, state, or national parks within five miles of the Project boundary.<sup>87</sup>

### **Community Benefits**

91. Black Oak estimates that the Project will generate approximately \$150,000 to \$170,000 in Wind Energy Production Tax to local units of government. Landowners with turbine(s) and/or wind easements on their property will also receive payments from the Permittee.<sup>88</sup>
92. Local contractors and suppliers will be used for portions of the construction.<sup>89</sup> In their joint application for a Certificate of Need, Black Oak and Getty estimated a construction workforce of approximately 90 to 135 for the combined projects over approximately six months.<sup>90</sup>

### **Effects on Land-Based Economies**

93. The Project is located in an agricultural area, approximately 84 percent of the site is covered in cultivated row crops.<sup>91</sup> Most of the soil within the Project area is considered prime farmland and most of the impacts from the Project will occur on cultivated agricultural lands. Black Oak estimates that approximately 13.5 to 20 acres of land will

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<sup>85</sup> Exhibit 4, at p. 27

<sup>86</sup> Id., at p. 28

<sup>87</sup> Id.

<sup>88</sup> Exhibit 4, at p. 37

<sup>89</sup> Id.

<sup>90</sup> Black Oak and Getty, *Joint Application for Certificate of Need for the Black Oak and Getty Wind Projects*, October 11, 2011, eDocket ID: [201110-67221-03](#), at p. 61

<sup>91</sup> Exhibit 4, at p. 42

be permanently removed from agricultural production as a result of the Project.<sup>92</sup> EFP staff estimates that approximately 80 to 115 acres of agricultural land will be temporarily impacted by construction activities (e.g. grading, soil compaction, access roads, turnaround areas, temporary construction staging areas). Overall, impact to agricultural lands as a result of the Project is anticipated to be short term, and is not expected to alter crop production. Once in operation, it may occasionally be necessary for Black Oak to complete repairs, or clear vegetation around a turbine or facility, which could result in additional temporary impact to agricultural operations. These interruptions are expected to be infrequent and short term.

94. Under section 7.2 of the site permit Black Oak is required, unless otherwise negotiated with landowners, to implement measures to protect and segregate topsoil from subsoil in cultivated land.
95. The site permit, at section 7.5, requires Black Oak to promptly repair or replace any fences or gates removed or damaged during all phases of the Project's life unless otherwise negotiated with affected landowners. Section 7.6 of the site permit requires Black Oak to promptly repair or replace any drainage tiles broken or damaged during any phase of the Project's life.
96. The proposed project will not adversely affect any forestry or mining operations.<sup>93</sup>

#### **Archaeological and Historical Resources**

97. Black Oak commissioned a review of records at the Minnesota State Historic Preservation Office (SHPO) for the majority of the Project area. Subsequent to commissioning the survey, Black Oak expanded the Project by six sections to the north; the expansion area is not included in the Phase Ia Literature Search Report provided in the Revised Site Permit Application.<sup>94</sup> Black Oak Wind states that it will review the records for the expanded area prior to construction.<sup>95</sup>
98. The archaeologists preparing the literature review recommend that further investigation of the Project site through a Phase I archaeological reconnaissance survey by a professional archaeologist permitted by the State of Minnesota.<sup>96</sup> Section 6.3 of the site permit requires the Permittee to conduct an archaeological reconnaissance survey (Phase I or Phase IA) and provide the results to the Commission, the State Historic Preservation Office (SHPO) and the State Archaeologist at least 14 days prior to the pre-construction meeting. An archaeological reconnaissance survey is used to determine if archaeological sites exist within the area potentially affected by the Project. Depending upon the results of the reconnaissance survey, more detailed work may be necessary.

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<sup>92</sup> Id., at p. 43

<sup>93</sup> Id., at p. 35

<sup>94</sup> Exhibit 4 at p. 25

<sup>95</sup> Id.

<sup>96</sup> Id.

99. If any archaeological sites are found during the Phase I survey, their integrity and significance should be addressed in terms of the site's potential eligibility for placement on the National Register of Historic Places (NRHP). If such sites are found to be eligible for the NRHP, appropriate mitigative measures will need to be developed in consultation with the SHPO, the State Archaeologist, and consulting American Indian communities. Section 6.3 of the site permit also requires the Permittee to stop work and notify the Commission, SHPO, and the State Archaeologist if any unrecorded cultural resources are found during construction.

### **Air and Water Emissions**

100. No harmful air or water emissions are expected from the construction and operation of the LWECS.

### **Wildlife**

101. Landcover within the Project boundary is comprised primarily of cultivated land (approximately 84 percent) and grassland (approximately 14 percent).<sup>97</sup> Direct disturbances to wildlife habitat are expected to be minimal, as Black Oak has committed to placing turbines, access roads, and other project components on cropped land.
102. Wildlife species found within the Project area include both resident and migratory species of Minnesota game and non-game wildlife associated with the cropland, upland grasslands and wetland and forested area that comprise the project area.<sup>98</sup>
103. Based on studies of existing wind power projects in the United States and Europe, impacts to avian and bat populations are typically the areas of greatest concern. Direct impacts may include strike fatality from turbine blades, power lines, and related infrastructure. Indirect impacts may include displacement of birds and bats and other wildlife from their habitats, site avoidance, and behavioral modification.<sup>99</sup>
104. Black Oak, together with Getty, commissioned surveys of wildlife habitat and use of the Black Oak and Getty sites, with particular emphasis on avian species. Black Oak used information from these surveys to avoid siting of the turbines in areas known to have high avian use.
105. Black Oak and Getty jointly developed and submitted a draft an Avian and Bat Protection Plan (ABPP) into the record on January 17, 2012.<sup>100</sup> The draft ABPP incorporates survey information of wildlife habitat and use of the Black Oak and Getty sites and describes design, construction, and operation standards to be used to minimize impacts to avian and bat species. The draft ABPP also describes training procedures to be used for construction and operations staff, a wildlife carcass and injury discovery process, reporting procedures, and proposed incident reporting forms. Black Oak and

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<sup>97</sup> Id. at p. 33

<sup>98</sup> Id., at p. 44

<sup>99</sup> National Wind Coordinating Collaborative, *Wind Turbine Interactions With Birds, Bats, and Their Habitats: A Summary of Research Results and Priority Questions*. Spring, 2010. [www.nationalwind.org](http://www.nationalwind.org)

<sup>100</sup> Draft Avian and Bat Protection Plan, January 17, 2012, eDocket ID: [20121-70380-02](https://www.docket.org/entry.do?entryID=20121-70380-02) (Exhibit 17)

Getty received comments on the Draft ABPP from the USFWS, DNR, and Department of Commerce Staff. Black Oak and Getty submitted a revised ABPP on July 10, 2012.<sup>101</sup>

106. Publicly available post construction avian and bat mortality at wind farms across the U.S. show a range of avian fatalities reported of between 0.49 to 7.17 birds per MW, or 0.44 to 11.83 birds per turbine.<sup>102</sup> Because research on the aggregate impact of avian fatalities resulting from wind farms on species populations is ongoing, it is not possible to determine impacts the Project may have on species populations in the area.
107. Section 6.7 of the site permit requires Black Oak to comply with the provisions of the ABPP prepared for the Project, submit quarterly avian and bat reports, and report dead or injured birds or bats.
108. Throughout the project record DNR staff reviewed several iterations of the layout of the Project. DNR comments note the presence of public lands, public waters, wetlands, and sensitive species as well as the large tracts of disturbed agricultural lands within the Project, and the efforts taken by Black Oak to avoid demonstrated areas of high avian use. The most recent DNR comments characterize the Project, and the adjacent Getty project, as of moderate risk to birds and bats. DNR staff recommends that the Commission require post-construction monitoring for avian fatalities according to the moderate risk protocol.<sup>103</sup> The proposed site permit, at section 13.2, requires Black Oak to design and implement a post-construction avian and bat fatality survey consistent with the DNR Draft Avian and Bat Monitoring Protocol for a site considered to be of moderate risk to wildlife and to provide the survey design to the Commission at least 90 days prior to the planned commencement of commercial operation.
109. In its comments on the adjacent Getty Wind Project, the United States Fish and Wildlife Service recommended that bird diverters be installed on any above ground collector, feeder, distribution or transmission lines to minimize the potential for bird collisions with above ground electrical lines.<sup>104</sup> The attached proposed site permit contains a special condition, at section 13.3, requiring Black Oak Wind to install bird diverters on any overhead collector, feeder, or distribution line constructed as part of this project.
110. At this time published peer-reviewed research identifying mitigation strategies to minimize impacts to bats is limited. In particular, information on turbine locations to minimize bat impacts is unclear. There is a growing body of literature indicating that curtailment, limiting turbine operation either through a higher cut-in speed or turning turbines off at certain times of high bat activity, may significantly minimize bat impacts from wind projects.<sup>105</sup> The site permit, at section 13.3, requires Black Oak to submit a

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<sup>101</sup> Revised Avian And Bat Protection Plan, July 11, 2012, eDocket ID: [20127-76674-01](#) (Exhibit 25)

<sup>102</sup> Exhibit 26, at p. 21

<sup>103</sup> DNR, *Comments on Turbine Layouts for Black Oak and Getty Wind Projects in Stearns County*, August 24, 2012, eDocket ID: [20128-78117-01](#) (Exhibit 30)

<sup>104</sup> USFWS December 29, 2012, Comment Letter on Getty Wind Project, found in Public Comments on Getty LWECS Site Permit Application, eDocket ID, [20121-70416-01](#), at pp. 20 - 23

<sup>105</sup> Ellison, L.E. 2012. *Bats and Wind Energy-A Literature Synthesis and Annotated Bibliography*: U.S. Geological Survey Open-File Report 2012-1110. 57 p., <http://pubs.usgs.gov/of/2012/1110/OF12-1110.pdf>

report to the Commission no later than December 15, 2013, summarizing the findings from a site-specific bat study characterizing species present and level of bat activity within the Project boundary. EFP staff will continue to monitor for mitigation strategies to minimize impacts to bats.

### **Rare and Unique Natural Resources**

111. Field surveys at the site did not identify any species listed under the federal Endangered Species Act. The field studies did identify seven bird species (trumpeter swan, horned grebe, Wilson's Phalarope, marbled godwit, Forster's Tern, American white pelican, and bald eagle) listed by the State of Minnesota as endangered, threatened or special concern.<sup>106</sup>
112. An active Bald Eagle nest was discovered early in the avian surveys and was monitored throughout the surveys and into the spring of 2012. The revise ABPP, dated July 2012, identifies disturbance of the active bald eagle nest as a primary concern for avian species during the construction phase of the Project and identifies training that will be implemented to avoid nest disturbance.<sup>107</sup> Black Oak Wind states that they continue to work closely with the USFWS to analyze bald eagle use data collected during the surveys. Under 50 CFR § 22.26, the USFWS may issue an eagle take permit if an otherwise lawful activity may result in disturbance, injury or harm (i.e. "take") to bald or golden eagles and the risk of a "take" cannot be effectively avoided or mitigated. As of July 10, 2012, the USFWS has not recommended that Black Oak or Getty seek an eagle take permit.

### **Vegetation**

113. Approximately 14 percent of the area within the Project boundary is grassland. Grassland and wetland areas within the Project boundary may contain remnant native prairie areas.<sup>108</sup> Areas of native prairie within the area potentially disturbed during construction of the Project will be identified in the Biological Inventory Survey required under section 6.1 of the permit. If any native prairie is identified in the Biological Inventory Survey, section 4.7 of the permit requires Black Oak Wind to prepare a Prairie Protection and Management Plan identifying steps taken to avoid impacts to native prairie and mitigation for unavoidable impacts to native prairie.
114. Black Oak Wind will minimize impacts to CRP land avoid impacts to RIM lands.<sup>109</sup> Black Oak has not identified Conservation Reserve Program (CRP) or Reinvest in Minnesota (RIM) lands or easements within the Project boundary.<sup>110</sup>

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<sup>106</sup> Exhibit 1, at Appendix I, pp. 12 - 17

<sup>107</sup> Exhibit 25, at pp.14-15

<sup>108</sup> Exhibit 4 at p. 42

<sup>109</sup> Id., at p. 34

<sup>110</sup> Exhibit 24, at response 7

115. Section 7.11 of the site permit requires Black Oak to incorporate a comprehensive re-vegetation plan in the Soil Erosion and Sediment Control Plan developed for the Project, in order to ensure adequate erosion control and restoration of the site.
116. No forested lands are expected to be adversely affected by the project. No groves of trees or shelterbelts will need to be removed to construct and operate the system.<sup>111</sup>

### **Geology, Soils, and Groundwater Resources**

117. Construction of the wind turbines and access roads in farmland increases the potential for erosion during construction. Section 7.11 of the site permit requires a Soil Erosion and Sediment Control Plan. Because the Project disturbs more than one acre, it will require a National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) Construction Stormwater Permit from the PCA. Black Oak will prepare a Storm Water Pollution Prevention Plan (SWPPP) for the Project, identifying the management practices used to prevent erosion.<sup>112</sup>
118. Upon completion of construction Black Oak will re-grade temporarily disturbed areas to natural contours. Access roads re-graded, filled, and dressed.<sup>113</sup> Disturbed areas will be loosened and re-seeded to blend with existing vegetation.<sup>114</sup>
119. Section 7.3 of the site permit requires Black Oak to implement measures to minimize soil compaction during all phases of the Project's life.
120. Surface geology in the Project area consists of glacial deposits associated with the Des Moines Lobe. The surficial deposits range in depth from 150 to 200 feet across the Project area. The glacial aquifers providing groundwater in Project area are generally unconfined and considered low yield. The water table is shallow, approximately 0 to 20 feet below ground surface across the site. Water needs for the Project will be limited, similar to those required by a residence.<sup>115</sup> Because turbine locations will be set back from residences, impacts to wells are not anticipated.<sup>116</sup>

### **Surface Water and Wetlands**

121. Wind turbines and associated facilities will not be located in public water wetlands, except that collector and feeder lines may cross if authorized by the appropriate permitting agency (site permit, section 4.6). A permit may be required if surface waters are impacted (site permit, section 10.5.1).
122. Use of appropriate erosion control measures will minimize impacts to surface waters and wetlands. Black Oak will identify erosion control measures to be implemented in each

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<sup>111</sup> Exhibit 4, at p. 43

<sup>112</sup> Id., at p. 38

<sup>113</sup> Id., at p. 66

<sup>114</sup> Id., at p. 43

<sup>115</sup> Environmental Report: Black Oak/Getty Wind Project May 2012, eDocket ID: [20125-74522-01](#), at p. 19

<sup>116</sup> Exhibit 4, at p. 39

phase of the Project in the Soil Erosion and Sediment Control Plan prepared for the Project (site permit, section 7.11).

123. Black Oak will identify any potentially affected wetlands prior to construction (site permit, section 6.1)

### **Future Development and Expansion**

124. Current information suggests windy areas in this part of the state are large enough to accommodate more wind facilities. The Paynesville Wind Farm was permitted by the Commission in 2011 but has not yet begun construction; other facilities are believed to be in various stages of planning or development in Stearns County.
125. While large-scale projects have occurred elsewhere (Texas, Iowa and California), little systematic study of the cumulative impact has occurred. EFP staff will continue to monitor for impacts and issues related to wind energy development.
126. The Commission is responsible for siting of LWECs “in an orderly manner compatible with environmental preservation, sustainable development, and the efficient use of resources.”<sup>117</sup> Section 4.1 of the site permit provides for buffers between adjacent wind generation projects to protect production potential.

### **Maintenance**

127. Black Oak will manage the ongoing operation of the Project. Maintenance of the turbines will be on a scheduled, rotating basis.<sup>118</sup> Equipment will be monitored by local staff, and remotely by Black Oak's operations and power scheduling desk.<sup>119</sup> An Operations and Maintenance facility is planned for the Project. Once a site is selected, Black Oak will seek permitting for the O&M facility through Stearns County.<sup>120</sup>

### **Decommissioning and Restoration**

128. Black Oak anticipates that the life of the Project to be 30 years beyond the date of first commercial operation. Black Oak wishes to reserve the right to extend the life of the Project beyond the 30 year date and may apply for an extension of the LWECs site permit to continue operation of the Project.<sup>121</sup>
129. At the end of operation, Black Oak will be responsible for removing wind facilities and turbines. Black Oak will be responsible for costs to decommission the Project and

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<sup>117</sup> Minn. Stat. § 215F.03.

<sup>118</sup> Exhibit 1, at pp. 65-66

<sup>119</sup> Exhibit 4, at pp. 67 - 68

<sup>120</sup> Exhibit 4, at p. 8

<sup>121</sup> Id., at p. 70

associated wind facilities.<sup>122</sup> Black Oak estimates the cost of decommissioning to be approximately \$74,500 in current dollars.<sup>123</sup>

130. As provided in section 9.1 of the site permit, the Permittee must submit a Decommissioning Plan to the Commission prior to the pre-operation compliance meeting. The Decommissioning Plan will document the manner in which Black Oak will ensure that it carries out its obligations to provide for the resources necessary to fulfill its requirements to properly decommission the Project at the appropriate time. The site permit addresses site restoration at section 9.2.
131. As provided in the site permit, at section 9.2, Black Oak is required to dismantle and remove from the site all towers, turbines, transformers, overhead and underground cables and lines, foundations, buildings and ancillary equipment to a depth of four feet. Any agreement for removal of Project facilities to a lesser depth, or for no removal, must be recorded with the county in a manner that clearly shows the location of any remaining foundations. Under terms of section 9.2 of the site permit, Black Oak will restore and reclaim the site to its pre-project topography and topsoil quality within 18 months of the time the Project, or any component, ceases operation.
132. As provided in section 9.3 of the site permit, Black Oak shall advise the Commission of any turbines abandoned prior to termination of the operation of the Project. As further specified in section 9.3 of the site permit, any turbines abandoned prior to termination of operation of the Project are to be decommissioned pursuant to section 9.2 of the site permit unless an alternate decommissioning plan is developed and submitted to the Commission.

### **Site Permit Conditions**

133. All of the above findings pertain to Black Oak's requested permit for a 42 megawatt LWECS.
134. Most of the conditions contained in this site permit were established as part of the site permit proceedings of other wind turbine projects permitted by the Environmental Quality Board and the Public Utilities Commission. Comments received by the Commission have been considered in development of the site permit. Minor changes and additions that provide for clarifications of the draft site permit conditions have been made.
135. The site permit contains conditions that apply to site preparation, construction, cleanup, restoration, operation, maintenance, abandonment, decommissioning and all other aspects of the Project.

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<sup>122</sup> Id.

<sup>123</sup> Exhibit 24, at response 6

Based on the foregoing findings, the Minnesota Public Utilities Commission makes the following:

### **CONCLUSIONS OF LAW**

1. Any of the foregoing findings which more properly should be designated as conclusions are hereby adopted as such.
2. The Minnesota Public Utilities Commission has jurisdiction over the site permit applied for by Black Oak Wind, LLC, for the 42 megawatt Black Oak Wind Farm pursuant to Minnesota Statute 216F.04.
3. Black Oak Wind, LLC, has substantially complied with the procedural requirements of Minnesota Statutes chapter 216F and Minnesota Rules chapter 7854.
4. The Minnesota Public Utilities Commission has complied with all procedural requirements required of Minnesota Statutes chapter 216F and Minnesota Rules chapter 7854.
5. The Minnesota Public Utilities Commission has considered all the pertinent factors relative to its determination of whether a site permit should be approved.
6. The Black Oak Wind Farm is compatible with the policy of the state to site LWECS in an orderly manner compatible with environmental preservation, sustainable development, and the efficient use of resources under Minnesota Statutes section 216F.03.
7. The Minnesota Public Utilities Commission has the authority under Minnesota Statutes section 216F.04 to place conditions in a permit and may deny, modify, suspend, or revoke a permit. The conditions contained in the site permit issued to Black Oak Wind, LLC, for the Black Oak Wind Farm are reasonable and appropriate.

Based on the foregoing Findings of Fact and Conclusions of Law, the Minnesota Public Utilities Commission issues the following:

**ORDER**

A LWECS Site Permit is hereby issued to Black Oak Wind, LLC, to construct and operate the 42 megawatt Black Oak Wind Farm in Stearns County- in accordance with the conditions contained in the site permit and in compliance with the requirements of Minnesota Statute 216F.04 and Minnesota Rules Chapter 7854 for PUC Docket No. IP6853/WS-10-1240.

The site permit is attached hereto, with a map showing the approved site.

BY THE ORDER OF THE COMMISSION

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Burl W. Haar  
Executive Secretary

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In the Matter of the Site Permit Application for a 42  
Megawatt Large Wind Energy Conversion System in  
Stearns County, Minnesota

**Exhibit List**  
(PUC Docket No. **IP-6853/WS-10-1240**)

Exhibit Number	Submitter	Date	Description	eDocket ID
1.	Black Oak	12/6/2010	Black Oak Wind, LLC Application for a LWECS site Permit for the Black Oak Wind Farm	<a href="#">201012-57165-01</a> <a href="#">201012-57165-02</a> <a href="#">201012-57165-03</a> <a href="#">201012-57165-04</a> <a href="#">201012-57165-05</a> <a href="#">201012-57165-06</a> <a href="#">201012-57165-07</a> <a href="#">201012-57165-08</a> <a href="#">201012-57165-09</a> <a href="#">201012-57165-10</a>
2.	DOC EFP	12/23/2010	DOC EFP Comments & Recommendations to the PUC on acceptance of Black Oak Wind, LLC's, LWECS Site Permit Application.	<a href="#">201012-57812-01</a>
3.	PUC	1/14/2011	PUC Order accepting Black Oak Wind, LLC's LWECS Site Permit Application	<a href="#">20111-58530-01</a> <a href="#">20111-58530-02</a>
4.	Black Oak	1/14/2011	Black Oak Wind, LLC Amended Application for a LWECS site Permit for the Black Oak Wind Farm	<a href="#">20111-58574-02</a> <a href="#">20111-58574-03</a> <a href="#">20111-58574-04</a> <a href="#">20111-58574-05</a>
5.	Black Oak	6/14/2012	Notice of PUC's acceptance of the LWECS application appearing in <i>Sauk Centre Herald</i> (January 25, 2011)	<a href="#">20126-75611-01</a>
6.	Black Oak	1/14/2011 1/18/2011	Affidavit of Mailing Revised LWECS Site Permit Application	<a href="#">20111-58574-01</a> <a href="#">20111-58620-01</a>
7.	DOC EFP	1/19/2011	Notice of Application Acceptance	<a href="#">20111-58673-01</a>
8.	DOC EFP	2/28/2011	Public & Agency comments on Black Oak Wind, LLC, LWECS Site Permit Application	<a href="#">20112-59220-01</a> <a href="#">20112-59451-01</a> <a href="#">20112-59546-01</a> <a href="#">20112-59963-01</a>
9.	DOC EFP	3/1/2011	DOC EFP Comments & Recommendations on Issuance of Draft Site Permit	<a href="#">20113-60002-01</a>
10.	PUC	3/11/2011	Commission Order Issuing Draft Site Permit for public review and comment	<a href="#">20113-60298-01</a> <a href="#">20113-60298-02</a>

Exhibit List – Black Oak Site Permit  
PUC Docket No. 6853/WS-10-1240

11.	DOC EFP	3/21/2011 6/21/2012	Notice of Public Hearing and Availability of Draft Site Permit Affidavit of Service to Project Contact List and Local Government Officials	<a href="#">20113-60489-01</a> <a href="#">20126-75901-02</a>
12.	Black Oak	3/28/2011	Affidavit of Publication: Notice of Draft Site Permit Issuance and Public Information Meeting published in <i>Sauk Centre Herald</i> (3/22/2011)	<a href="#">20113-60680-01</a>
13.	DOC EFP	6/12/2012	<i>EQB Monitor</i> Notice of Availability of the Draft Site Permit	<a href="#">20126-75538-01</a>
14.	DOC EFP	6/13/2012	Oral Comments: Draft Site Permit and Public Information Meeting on Black Oak Wind Farm held April 7, 2011 in Sauk Centre	<a href="#">20126-75582-01</a>
15.	DOC EFP	1/24/2012	Public Comments on Draft Site Permit	<a href="#">20121-70618-01</a>
16.	Black Oak	1/17/2012	Letter describing Project Changes	<a href="#">20121-70385-01</a>
17.	Black Oak	1/17/2012	Draft Avian and Bat Protection Plan	<a href="#">20121-70380-02</a> <a href="#">20121-70380-04</a> <a href="#">20121-70380-06</a> <a href="#">20121-70380-08</a>
18.	PUC	5/11/2012	Notice of Public Hearing	<a href="#">20125-74638-01</a>
19.	DOC EFP	5/25/2012	EFP Staff comments on Draft Avian and Bat Protection Plan	<a href="#">20125-75006-01</a>
20.	PUC	5/25/2012	Revised Notice of Public Hearing	<a href="#">20125-75012-02</a>
21.	Black Oak & Getty	6/25/2012	Hearing Testimony of Patrick Smith with Schedules (June 22, 2012)	<a href="#">20126-75957-03</a>
22.	DOC EFP	6/26/2012	Comment letter on Black Oak Wind Farm and Getty Wind Farm Projects	<a href="#">20128-77907-03</a>
23.	DNR	6/26/2012	DNR Comments on Layout	<a href="#">20126-76055-01</a>
24.	Black Oak & Getty	7/10/2012	Black Oak Wind, LLC and Getty Wind, LLC Post-Hearing Comments	<a href="#">20127-76674-07</a>
25.	Black Oak & Getty	7/10/2012	Revised ABPP	<a href="#">20127-76674-01</a>
26.	OAH	8/8/2012	OAH Summary of Public Testimony	<a href="#">20128-77667-01</a>
27.	Court Reporter	7/11/2012	Transcript of Public Hearing	<a href="#">20127-76685-03</a>
28.	OAH & Court Reporter	8/14/2012	Written Public Comments (includes those presented at the public hearing)	<a href="#">20128-77851-01</a> <a href="#">20127-76745-02</a> <a href="#">20127-76745-05</a>
29.	DOC EFP	8/16/2012	Letter clarifying origin of certain comments referenced in OAH Summary of Public Testimony	<a href="#">20128-77907-03</a>
30.	DNR	8/24/2012	Comments on Turbine Layouts for Black Oak and Getty Wind Projects in Stearns County	<a href="#">20128-78119-01</a>

**STATE OF MINNESOTA PUBLIC UTILITIES COMMISSION**

**SITE PERMIT FOR A**

**LARGE WIND ENERGY CONVERSION SYSTEM**

**IN STEARNS COUNTY, MINNESOTA**

**ISSUED TO**

**BLACK OAK WIND, LLC**

**PUC DOCKET NO. IP-6853/WS-10-1240**

In accordance with Minnesota Statutes Section 216F.04, this Site Permit is hereby issued to:

Black Oak Wind, LLC

Black Oak Wind, LLC, is authorized to construct and operate the Black Oak Wind Farm, an up to 42 Megawatt Large Wind Energy Conversion System, on the site identified in this Site Permit and in compliance with the conditions contained in this Permit.

This Permit shall expire thirty (30) years from the date of this approval.

Approved and adopted this \_\_\_\_ day of {Month},  
~~2011~~2012  
BY ORDER OF THE COMMISSION

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BURL W. HAAR  
Executive Secretary

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## SITE PERMIT

This **SITE PERMIT** for a Large Wind Energy Conversion System (LWECS) authorizes Black Oak Wind, LLC, (Permittee) to construct the Black Oak Wind Farm (Project), a 42 Megawatt (MW) nameplate capacity LWECS and associated facilities in Stearns County, on a site of approximately 7,100 acres in accordance with the conditions contained in this Permit.

### SECTION 1

#### PROJECT DESCRIPTION

The up to 42 MW nameplate capacity LWECS authorized to be constructed in this Permit (Black Oak Wind Farm) will be developed and constructed by the Permittee. The Project will consist of up to ~~26~~ ~~28~~ ~~1.6~~ 1.5 Megawatt (MW) wind turbine generators, up to ~~23~~ ~~22~~ 1.8 MW wind turbine generators, or up to ~~44~~ 13 3.0 MW wind turbine generators mounted on towers with a height of ~~269~~ 262 to 328 feet (~~82~~ ~~80~~ to 100 meters) towers having a combined nominal nameplate capacity of ~~approximately up to~~ 42 MW. The rotor diameter is ~~270~~ 285 to 367 feet (~~82.5~~ 87 to 112 meters). Associated facilities will include wind turbine access roads, communications cables, electrical collector and feeder lines, an operations and maintenance facility, and up to two meteorological towers. Depending upon the turbine model selected, transformers will either be pad mounted or within the nacelle. Turbines are interconnected by communication and underground electrical power collection facilities within the wind farm that will deliver wind-generated power to the Project substation. Power will ultimately be delivered from the Project substation to the grid at the Black Oak ~~Substation~~ Switching Station owned by ~~Great River~~ Xcel Energy. ~~The Project Substation and Permittee will seek local permitting for the operation and maintenance facility and the transmission line delivering the power from the Project Substation to Great River Xcel Energy's Black Oak Substation, will be permitted through Stearns County.~~

### SECTION 2

#### DESIGNATED SITE

##### 2.1 PROJECT BOUNDARY

The Project boundary ~~and anticipated project layout are~~ is shown on the maps ~~attached hereto as~~ at Attachments 1a, 1b, and 1c. The Project is located in the following townships in Stearns County:

Township Name	Sections	Township	Range
Ashley	25, 26, 27, 34, 35, 36	126N	35W
Raymond	1, 2, 3, 11, 12, 13, 13, 23	125N	35W

~~Within the site permit boundary, the Black Oak Wind Farm and associated facilities shall be located on lands for which the Permittee has obtained wind rights in Ashley Township (sections 25-27, 34-36) and Raymond Township (Sections 1-3, 11-14, 23) in Stearns County.~~

## **2.2 TURBINE LAYOUT**

Three preliminary wind turbine and associated facility layouts are shown on maps at Attachments 1a, 1b, and 1c. Each preliminary layout represents the approximate location of wind turbines and associated facilities within the Project boundary and identifies a layout that minimizes the overall potential human and environmental impacts of the Project, which were evaluated in the permitting process. The final layout depicting the location of each wind turbine and associated facility shall be located within the Project boundary. The Project boundary serves to provide the Permittee with the flexibility to ~~do~~ make minor adjustments to the preliminary layout to accommodate landowner requests, unforeseen conditions encountered during the detailed engineering and design process, and federal and state agency requirements. Any modification of the location of a wind turbine and associated facility depicted in the preliminary layout shall be done in such a manner as to have comparable overall human and environmental impacts and shall be specifically identified in the site plan pursuant to Section 5.1. The Permittee shall submit the final site layout in the site plan pursuant to Section 5.1.

## **SECTION 3**

### **APPLICATION COMPLIANCE**

The Permittee shall comply with those practices set forth in its Site Permit Application, dated ~~January 14, 2011~~ December 6, 2010, and the record of this proceeding unless this Permit establishes a different requirement in which case this Permit shall prevail.

Attachment 4 contains a summary of compliance filings, which is provided solely for the convenience of the Permittee. If this permit conflicts or is not consistent with Attachment 4, the conditions in this permit will control.

## **SECTION 4**

### **SETBACKS AND SITE LAYOUT RESTRICTIONS**

#### **4.1 WIND ACCESS BUFFER**

Wind turbine towers shall not be placed less than five (5) rotor diameters (RD) on the prevailing wind directions and three (3) RD on the non-prevailing wind directions from the perimeter of the lands where the Permittee does not hold the wind rights, without the approval of the Commission. This section does not apply to public roads and trails.

#### **4.2 RESIDENCES**

Wind turbine towers shall not be located closer than 1,000 feet from any residence unless a waiver has been signed by the property owner(s), or the distance required to comply with the noise standards pursuant to Minnesota Rule 7030.0040 established by the Minnesota Pollution

Control Agency (PCA), whichever is greater. In no case shall wind turbine towers be located closer than 500 feet from any residence.

### **4.3 NOISE**

The wind turbine towers shall be placed such that the Permittee shall comply with noise standards established as of the date of this permit by the PCA at all times at all appropriate locations. The noise standards are found in Minnesota Rules chapter 7030. Turbine operation shall be modified or turbines shall be removed from service if necessary to comply with these noise standards. The Permittee or its contractor may install and operate turbines as close as the minimum setback required in this permit, but in all cases shall comply with PCA noise standards. The Permittee shall be required to comply with this condition with respect to all homes or other receptors in place as of the time of construction, but not with respect to such receptors built after construction of the towers.

### **4.4 ROADS**

Wind turbine and meteorological towers shall not be located closer than 250 feet from the edge of the nearest public road right-of-way.

### **4.5 PUBLIC LANDS**

Wind turbines and associated facilities including foundations, access roads, underground cable, and transformers, shall not be located in public lands, including Waterfowl Production Areas, Wildlife Management Areas, Scientific and Natural Areas, or county parks. Wind turbine towers shall also comply with the setbacks of Section 4.1.

### **4.6 WETLANDS**

Wind turbines and associated facilities including foundations, access roads, underground cable and transformers, shall not be placed in public waters wetlands, as defined in Minnesota Statutes section 103G.005, subdivision. 15a except that electric collector or feeder lines may cross or be placed in public waters or public waters wetlands subject to permits and approvals by the Minnesota Department of Natural Resources (DNR), United States Fish and Wildlife Service (FWS), and/or, the United States Army Corps of Engineers (USACE), and local units of government as implementers of the Minnesota Wetland Conservation Act.

### **4.7 NATIVE PRAIRIE**

~~Wind turbines and associated facilities, including foundations, access roads, collector and feeder lines, underground cable and transformers, shall not be placed in native prairie, as defined in Minnesota Statutes section 84.02, subdivision 5, unless addressed in a Prairie Protection and Management Plan.~~ The Permittee shall, in consultation with the Commission and DNR, prepare a Prairie Protection and Management Plan and submit it to the Commission and DNR at least ~~ten~~ (10) working fourteen (14) days prior to the pre-construction meeting if native prairie, as defined in Minnesota Statutes section 84.02, subdivision 5, is identified in any biological and natural resource inventories conducted pursuant to Section 6.1. The plan shall address steps taken to

avoid impacts to native prairie and mitigation for unavoidable impacts to native prairie by restoration or management of other native prairie areas that are in degraded condition, by conveyance of conservation easements, or by other means agreed to by the Permittee and Commission. Wind turbines and associated facilities, including foundations, access roads, collector and feeder lines, underground cable, and transformers, shall not be placed in native prairie unless addressed in a Prairie Protection and Management Plan and shall not be located in areas enrolled in the Native Prairie Bank Program. Construction activities, as defined in Minnesota Statutes section 216E.01, shall not impact native prairie unless addressed in a Prairie Protection and Management Plan.

#### **4.8 SAND AND GRAVEL OPERATIONS**

Wind turbines and all associated facilities, including foundations, access roads, underground cable, and transformers, shall not be located within active sand and gravel operations, unless otherwise negotiated with the landowner with notice given to the owner of the sand and gravel operation.

#### **4.9 WIND TURBINE TOWERS**

Structures for wind turbines shall be self-supporting tubular towers. The towers may be up to 100 meters (328 feet) above grade measured at the hub.

#### **4.10 TURBINE SPACING**

The turbine towers shall be constructed within the site boundary as shown in Attachments 1A, 1B and 1C. The turbine towers shall be spaced no closer than three (3) RD in the non-prevailing wind directions and five (5) RD on the prevailing wind directions. If required during final micro-siting of the turbine towers to account for topographic conditions, up to 20 percent of the towers may be sited closer than the above spacing but the Permittee shall minimize the need to site the turbine towers closer.

#### **4.11 METEOROLOGICAL TOWERS**

Permanent towers for meteorological equipment shall be free standing. Permanent meteorological towers shall not be placed less than 250 feet from the edge of the nearest public road right-of-way and from the boundary of the Permittee's site control, or in compliance with the county ordinance regulating meteorological towers in the county the tower is built, whichever is more restrictive. Meteorological towers shall be placed on property the Permittee holds the wind or development rights.

Meteorological towers shall be marked as required by the Federal Aviation Administration (FAA). There shall be no lights on the meteorological towers other than what is required by the FAA. This restriction shall not apply to infrared heating devices used to protect the wind monitoring equipment.

#### **4.12 AVIATION**

The Permittee shall not place wind turbines or associated facilities in a location that could create an obstruction to navigable airspace of public and licensed private airports (as defined in Minnesota Rule 8800.0100, subparts 24a and 24b) in Minnesota, adjacent states, or provinces. The Permittee shall apply the minimum obstruction clearance for private airports pursuant to Minnesota Rule 8800.1900, subpart 5. Setbacks or other limitations shall be followed in accordance with the Minnesota Department of Transportation (DOT) Department of Aviation, and FAA. The Permittee shall notify owners of all known airports within six (6) miles of the Project prior to construction.

#### **4.13 FOOTPRINT MINIMIZATION**

The Permittee shall design and construct the LWECS so as to minimize the amount of land that is impacted by the LWECS. Associated facilities in the vicinity of turbines such as electrical/electronic boxes, transformers and monitoring systems shall, to the greatest extent feasible, be mounted on the foundations used for turbine towers or inside the towers unless otherwise negotiated with the affected landowner(s).

#### **4.14 COMMUNICATION CABLES**

The Permittee shall place all supervisory control and data acquisition (SCADA) communication cables underground and within or adjacent to the land necessary for turbine access roads unless otherwise negotiated with the affected landowner(s).

#### **4.15 ELECTRICAL COLLECTOR AND FEEDER LINES**

~~Collector and feeder lines comprise the electrical collection system.~~ Collector lines that carry electrical power from each individual transformer associated with a wind turbine to an internal project interconnection point shall be buried underground. Collector lines shall be placed within or adjacent to the land necessary for turbine access roads unless otherwise negotiated with the affected landowner(s).

Feeder lines that carry power from an internal project interconnection point to the Project substation or interconnection point on the electrical grid may be overhead or underground. Feeder line locations shall be negotiated with the affected landowner(s).

Any overhead feeder lines that parallel public roads shall be placed within the public rights-of-way or on private land immediately adjacent to public roads. If overhead feeder lines are located within public rights-of-way, the Permittee shall obtain approval from the governmental unit responsible for the affected right-of-way.

Collector and feeder line locations shall be located in such a manner as to minimize interference with agricultural operations including, but not limited to, existing drainage patterns, drain tile, future tiling plans, and ditches. Safety shield shall be placed on all guy wires associated with overhead feeder lines. The Permittee shall submit the engineering drawings of all collector and feeder lines in the site plan pursuant to Section 5.1.

The Permittee must fulfill, comply with, and satisfy all Institute of Electrical and Electronics Engineers, Inc. (IEEE) standards applicable to this Project, including, but not limited to, IEEE 776 [Recommended Practice for Inductive Coordination of Electric Supply and Communication Lines], IEEE 519 [Harmonic Specifications], and IEEE 367 [Recommended Practice for Determining the Electric Power Station Ground Potential Rise and Induced Voltage from a Power Fault], and IEEE 820 [Standard Telephone Loop Performance Characteristics], provided the telephone service provider(s) have complied with any obligations imposed on it pursuant to these standards. Upon request by the Commission, the Permittee shall report to the Commission on compliance with these standards.

## SECTION 5

### ADMINISTRATIVE COMPLIANCE PROCEDURES

The following administrative compliance procedures shall be executed in accordance with the Permit Compliance Filings at Attachments 3 and 4.

#### 5.1 SITE PLAN

At least ~~ten (10) working~~ fourteen (14) days prior to the pre-construction meeting, the Permittee shall submit to the Commission:

- (a) a site plan for all turbines, roads, electrical equipment, collector and feeder lines, and other associated facilities to be constructed;
- (b) engineering drawings for site preparation and construction of the facilities; and
- (c) a plan for restoration of the site due to construction.

Construction is defined under Minnesota Statutes section 216E.01. The Permittee may submit a site plan and engineering drawings for only a portion of the Project if the Permittee intends to commence construction on certain parts of the Project before completing the site plan and engineering drawings for other parts of the Project. The Permittee shall document, through GIS mapping, compliance with the setbacks and site layout restrictions required by the permit, including compliance with the noise standards pursuant to Minnesota Rules chapter 7030. In the event that previously unidentified environmental conditions are discovered during construction ~~which~~ that by law or pursuant to conditions outlined in this permit would preclude the use of that site as a turbine site, the Permittee shall have the right to move or relocate a turbine. The Permittee shall notify the Commission of any turbines that are to be relocated before the turbine is constructed on the new site and demonstrate compliance with the setbacks and site layout restrictions required by the permit.

#### 5.2 NOTICE TO LOCAL RESIDENTS

Within ~~ten (10) working~~ fourteen (14) days of approval of this Permit, the Permittee shall send a printed copy of the permit to the office of the auditor of each county in which the site is located and to the clerk of each city and township within the site boundaries. If applicable, the Permittee

shall, within ~~ten (10) working~~ fourteen (14) days of permit approval, send a printed copy of this permit to each regional development commission, local fire district, soil and water conservation district, watershed district, and watershed management district office with jurisdiction in the counties where the site is located. Within thirty (30) days of issuance of this permit, the Permittee shall send a printed copy of the permit to each landowner within the Project boundary. In no case shall the affected landowner receive the site permit and complaint procedure, developed pursuant to Section 5.8, less than five (5) days prior to the start of construction on their property.

### **5.3 NOTICE OF PERMIT CONDITIONS**

Prior to the start of construction, the Permittee shall inform all employees, contractors, and other persons involved in the construction and ongoing operation of the Project of the terms and conditions of this permit.

### **5.4 FIELD REPRESENTATIVE**

At least ~~ten (10) working~~ fourteen (14) days prior to the start of construction and continuously throughout construction, including site restoration, the Permittee shall designate a field representative responsible for overseeing compliance with the conditions of this permit during the construction phase of this Project. This person (or a designee) shall be accessible by telephone during normal working hours. This person's address, phone number and emergency phone number shall be provided to the Commission, which may make the number available to local residents and officials and other interested persons. The Permittee may change the field representative by notification to the Commission.

### **5.5 SITE MANAGER**

The Permittee shall designate a site manager responsible for overseeing compliance with the conditions of this permit during the commercial operation and decommissioning phases of this Project. The Permittee shall provide the Commission with the name, address, and phone number, and emergency phone number of the site manager prior to placing any turbine into commercial operation. This information shall be maintained current by informing the Commission of any changes as they become effective.

### **5.6 PRE-CONSTRUCTION MEETING**

Prior to the start of any construction, the Permittee shall conduct a pre-construction meeting with the Field Representative and the State Permit Manager designated by the Commission to coordinate field monitoring and construction activities.

### **5.7 PRE-OPERATION COMPLIANCE MEETING**

At least ~~ten (10) working~~ fourteen (14) days prior to commercial operation, the Permittee shall conduct a pre-operation compliance meeting with the Site Manager and State Permit Manager designated by the Commission to coordinate field monitoring of operation activities.

## 5.8 COMPLAINTS

At least ~~ten (10) working~~ fourteen (14) days prior to the pre-construction meeting, the Permittee shall submit to the Commission the company's procedures to be used to receive and respond to complaints. The Permittee shall report to the Commission all complaints received concerning any part of the LWECs in accordance with the procedures provided in Attachments 2 and 3 of this Permit.

## SECTION 6

### SURVEYS AND REPORTING

#### 6.1 BIOLOGICAL INVENTORY/SURVEY

The Permittee, in consultation with DNR and ~~Commission~~ other interested parties, shall design and conduct pre-construction desktop and field inventories of potentially impacted, ~~if any,~~ native prairies, wetlands and any other biologically sensitive areas within the site and assess the presence of state threatened, endangered or species of special concern, or federally listed ~~or threatened~~ species. The results of any surveys shall be submitted to the Commission and DNR at least thirty (30) days prior to the pre-construction meeting to confirm compliance of conditions of this permit.

The Permittee shall provide to the Commission any biological surveys or studies conducted on this Project, including those not required under this permit. ~~Section 11.7 may apply to data provided pursuant to this section.~~

#### 6.2 SHADOW FLICKER

At least ~~ten (10) working~~ fourteen (14) days prior to the pre-construction meeting the Permittee shall provide data on shadow flicker for each residence of non-participating landowners and participating landowners. Information shall include the results of modeling used, assumptions made, and the anticipated ~~duration of~~ levels of exposure from turbine shadow flicker on each residence. The Permittee shall provide documentation on its efforts to minimize shadow flicker ~~impacts exposure.~~ The results of any modeling shall be submitted to the Commission at least fourteen (14) days prior to the pre-construction meeting to confirm compliance of conditions in this permit.

#### 6.3 ARCHAEOLOGICAL RESOURCES

The Permittee shall work with the State Historic Preservation Office (SHPO) and the State Archaeologist. The Permittee shall carry out a Phase I or IA Archaeology survey for all proposed turbine locations, access roads, junction boxes and other areas of Project construction impact to determine whether additional archaeological work is necessary for any part of the proposed Project. The Permittee will contract with a qualified archaeologist to complete such surveys, and shall submit the results to the Commission, the SHPO and the State Archaeologist at least ~~ten (10) working~~ fourteen (14) days prior to the pre-construction meeting.

The SHPO and the State Archaeologist will make recommendations for the treatment of any significant archaeological sites which are identified. Any issues in the implementation of these

recommendations will be resolved by the Commission in consultation with SHPO and the State Archaeologist. In addition, the Permittee shall mark and preserve any previously unrecorded archaeological sites that are found during construction and shall promptly notify the SHPO, the State Archaeologist, and the Commission of such discovery. The Permittee shall not excavate at such locations until so authorized by the Commission in consultation with the SHPO and the State Archaeologist.

If human remains are encountered during construction, the Permittee shall immediately halt construction at that location and promptly notify local law enforcement authorities and the State Archaeologist. Construction at the human remains location shall not proceed until authorized by local law enforcement authorities or the State Archaeologist.

If any federal funding, permit or license is involved or required, the Permittee shall notify the SHPO as soon as possible in the planning process to coordinate section 106 (36 C.F.R 800) review.

Prior to construction, construction workers shall be trained about the need to avoid cultural properties, how to identify cultural properties, and procedures to follow if undocumented cultural properties, including gravesites, are found during construction. If any archaeological sites are found during construction, the Permittee shall immediately stop work at the site and shall mark and preserve the site and notify the Commission; ~~and the SHPO, and State Archaeologist~~ about the discovery. The Commission and SHPO shall have three (3) working days from the time the agency is notified to conduct an inspection of the site if either agency shall choose to do so. On the fourth day after notification, the Permittee may begin work on the site unless the SHPO has directed that work shall cease. In such event, work shall not continue until the SHPO determines that construction can proceed.

#### **6.4 INTERFERENCE**

At least ~~ten (10) working~~ fourteen (14) days prior to the pre-construction meeting, the Permittee shall submit to the Commission the results of an assessment of television and radio signal reception, microwave signal patterns, and telecommunications in the Project area. The assessment shall be designed to provide data that can be used in the future to determine whether the turbines and associated facilities are the cause of disruption or interference of television or radio reception, microwave patterns, or telecommunications in the event residents should complain about such disruption or interference after the turbines are placed in operation. The Permittee shall be responsible for alleviating any disruption or interference of these services caused by the turbines or any associated facilities.

The Permittee shall not operate the Project so as to cause microwave, television, radio, telecommunications, or navigation interference in violation of Federal Communications Commission regulations or other law. In the event the Project or its operations cause such interference, the Permittee shall take timely measures necessary to correct the problem.

#### **6.5 WAKE LOSS STUDIES**

At least ~~ten (10) working~~ fourteen (14) days prior to the pre-construction meeting, the Permittee shall provide to the Commission the pre-construction micro-siting analysis leading to the final

tower locations and an estimate of total Project wake losses. The Permittee shall provide to the Commission any operational wake loss studies conducted on this Project.

## **6.6 NOISE**

The Permittee shall submit a proposal to the Commission at least ~~ten (10) working~~ fourteen (14) days prior to the pre-operation compliance meeting for the conduct of a post-construction noise study. Upon the approval of the Commission, the Permittee shall carry out the study. The study shall be designed to determine the operating LWECS noise levels at different frequencies and at various distances from the turbines at various wind directions and speeds. The Permittee shall submit the study within eighteen (18) months after commercial operation.

## **6.7 AVIAN AND BAT PROTECTION PLAN**

### 6.7.1 AVIAN AND BAT PROTECTION PLAN

The Permittee, ~~in consultation with the Commission and DNR,~~ shall ~~prepare an~~ comply with the provisions of the Revised Avian and Bat Protection Plan and submit it to the Commission at least ten (10) working days prior to the pre-construction meeting- submitted for this Project on July 10, 2012. The plan ~~shall address~~ steps to be taken to identify, avoid, minimize and mitigate impacts to avian and bat species during the construction phase and the operation phase of the Project. The plan shall also address includes formal and informal monitoring, training, wildlife handling, documentation (e.g. photographs) and reporting protocols for each phase of the Project.

The Permittee shall, by March 15 following each complete or partial calendar year of operation, file with the Commission an annual report detailing findings of its annual audit of ABPP practices. The annual report shall include summarized and raw data of bird and bat fatalities and injuries and shall include bird and bat fatality estimates for the Project using multiple agreed upon estimators from the prior calendar year. The annual report shall also identify any deficiencies or recommended changes in the operation of the Project or in the ABPP to reduce avian and bat fatalities and shall provide a schedule for implementing the corrective or modified actions. The Permittee shall provide a copy of the report to DNR and to the U.S. Fish and Wildlife Service at the time of filing with the Commission.

### 6.7.2 QUARTERLY INCIDENT REPORTS

The Permittee shall submit quarterly avian and bat reports to the Commission. Quarterly reports are due by the 15<sup>th</sup> of each January, April, July, and October commencing the day following commercial operation and terminating upon the expiration of this permit. Each report shall identify any dead or injured avian or bat species, location of find by turbine number, and date of find for the reporting period in accordance with the reporting protocols. If a dead or injured avian or bat species is found the report shall describe the potential cause of the occurrence and the steps taken to avoid future occurrences. The Permittee shall provide a copy of the report to DNR and to the U.S. Fish and Wildlife Service at the time of filing with the Commission.

### 6.7.3 IMMEDIATE INCIDENT REPORTS

The Permittee shall notify the Commission, United States Fish and Wildlife Service (USFWS) and DNR within twenty-four (24) hours of the discovery of any of the following ~~within the vicinity of the rotor swept area:~~

- (a) five or more dead or injured non-protected avian or bat species within a reporting period; (see USFWS comment)
- (b) one or more dead or injured migratory avian or bat species;
- (c) one or more dead or injured state threatened, endangered, or species of special concern; ~~or~~
- (d) one or more dead or injured federally listed species; or-
- (e) one or more bald eagles.

### **6.8 PROJECT ENERGY PRODUCTION**

The Permittee shall, ~~by submit a report no later than~~ February 1<sup>st</sup> following each complete or partial year of Project operation submit a report to the Commission including. The report shall include:

- (a) The ~~rated nameplate~~ installed capacity of the permitted Project;
- (b) The total monthly energy generated by the Project in MW hours;
- (c) The monthly capacity factor of the Project;
- (d) Yearly energy production and capacity factor for the Project;
- (e) The operational status of the Project and any major outages, major repairs, curtailments, or turbine performance improvements occurring in the previous year; and
- (f) Any other information reasonably requested by the Commission.

This information will be considered public and must be submitted electronically.

### **6.9 WIND RESOURCE USE**

The Permittee shall, by February 1<sup>st</sup> following each complete or partial calendar year of operation, upon the request of the Commission report to file with the Commission on the monthly energy production of the Project and the average monthly and average annual wind speed collected at one permanent meteorological tower selected by the Commission during the preceding year or partial year of operation. Section 11.7 shall apply to data provided pursuant to this section.

This information will be considered public and must be submitted electronically.

## **6.10 EXTRAORDINARY EVENTS**

Within twenty-four (24) hours of an occurrence, the Permittee shall notify the Commission of any extraordinary event. Extraordinary events include but shall not be limited to: fires, tower collapse, thrown blade, collector or feeder line failure, and injured LWECS worker or private person. The Permittee shall, within thirty (30) days of the occurrence, submit a report to the Commission describing the cause of the occurrence and the steps taken to avoid future occurrences.

## **SECTION 7**

### **CONSTRUCTION AND OPERATION PRACTICES**

#### **7.1 SITE CLEARANCE**

The Permittee shall disturb or clear the site only to the extent necessary to assure suitable access for construction, safe operation, and maintenance of the Project .

#### **7.2 TOPSOIL PROTECTION**

The Permittee shall implement measures to protect and segregate topsoil from subsoil in cultivated lands unless otherwise negotiated with the affected landowner(s).

#### **7.3 SOIL COMPACTION**

The Permittee shall implement measures to minimize soil compaction of all lands during all phases of the Project's life and shall confine compaction to as small an area as practicable.

#### **7.4 LIVESTOCK PROTECTION**

The Permittee shall take precautions to protect livestock during all phases of the Project's life.

#### **7.5 FENCES**

The Permittee shall promptly replace or repair all fences and gates removed or damaged during all phases of the Project's life unless otherwise negotiated with the affected landowner(s). When the Permittee installs a gate where electric fences are present, the Permittee shall provide for continuity in the electric fence circuit.

#### **7.6 DRAINAGE TILES**

The Permittee shall take into account the location of drainage tiles during Project layout and construction. The Permittee shall promptly repair or replace all drainage tiles broken or damaged during all phases of the Project's life unless otherwise negotiated with the affected landowner(s).

## **7.7 EQUIPMENT STORAGE**

The Permittee shall not locate temporary equipment staging areas on lands under its control unless negotiated with affected landowner(s). Temporary staging areas shall not be located in wetlands or native prairie as defined in Sections 4.6 and 4.7.

## **7.8 ROADS**

### **7.8.1 PUBLIC ROADS**

At least ~~ten (10) working~~ fourteen (14) days prior to the pre-construction meeting, the Permittee shall identify all state, county or township roads that will be used for the Project and shall notify the Commission and the state, county, or township governing body having jurisdiction over the roads to determine if the governmental body needs to inspect the roads prior to use of these roads. Where practical, existing roadways shall be used for all activities associated with the Project. Where practical, all-weather roads shall be used to deliver cement, turbines, towers, assembled nacelles and all other heavy components to and from the turbine sites.

The Permittee shall, prior to the use of such roads, make satisfactory arrangements with the appropriate state, county or township governmental body having jurisdiction over roads to be used for construction of the Project for maintenance and repair of roads that will be subject to extra wear and tear due to transportation of equipment and Project components. Upon request of the Commission, the Permittee shall notify the Commission of such arrangements.

### **7.8.2 TURBINE ACCESS ROADS**

The Permittee shall construct the least number of turbine access roads it can. Access roads shall be low profile roads so that farming equipment can cross them and shall be covered with Class five gravel or similar material. Access roads shall not be constructed across streams and drainage ways without required permits and approvals from the DNR, USFWS, and/or USACE. When access roads are constructed across streams and drainage ways, the access roads shall be designed in a manner so runoff from the upper portions of the watershed can readily flow to the lower portion of the watershed. Access roads shall also be located and constructed in accordance with all necessary township, county or state road requirements and permits.

### **7.8.3 PRIVATE ROADS**

The Permittee shall promptly repair private roads or lanes damaged when moving equipment or when obtaining access to the site, unless otherwise negotiated with the affected landowner(s).

## **7.9 CLEANUP**

The Permittee shall remove all waste and scrap that is the product of construction, operation, restoration and maintenance from the site and properly dispose of it upon completion of each task. Personal litter, bottles, and paper deposited by site personnel shall be removed on a daily basis.

## **7.10 TREE REMOVAL**

The Permittee shall minimize the removal of trees and the Permittee shall not remove groves of trees or shelter belts without notification to the Commission and the approval of the affected landowner(s).

## **7.11 SOIL EROSION AND SEDIMENT CONTROL**

The Permittee shall develop a Soil Erosion and Sediment Control Plan prior to construction and submit the Plan to the Commission at least ~~ten (10) working~~ fourteen (14) days prior to the pre-construction meeting. This Plan may be the same as the Storm Water Pollution Prevention Plan (SWPPP) submitted to the PCA as part of the National Pollutant Discharge Elimination System (NPDES) permit application.

The Soil Erosion and Sediment Control Plan shall address what types of erosion control measures will be implemented during each Project phase, and shall at a minimum identify: plans for grading, construction and drainage of roads and turbine pads; necessary soil information; detailed design features to maintain downstream water quality; a comprehensive re-vegetation plan to maintain and ensure adequate erosion control and slope stability and to restore the site after temporary Project activities; and measures to minimize the area of surface disturbance. Other practices shall include containing excavated material, protecting exposed soil, and stabilizing restored material and removal of silt fences or barriers when the area is stabilized. The plan shall identify methods for disposal or storage of excavated material. Erosion and sedimentation control measures shall be installed prior to construction and maintained throughout the Project's life.

The Permittee shall develop an invasive species prevention plan to prevent the introduction of invasive species on lands disturbed by project construction activities. This requirement may be included as an element of the Soil Erosion and Sediment Control Plan.

## **7.12 RESTORATION**

The Permittee shall, as soon as practical following construction of each turbine, considering the weather and preferences of the affected landowner(s), restore the area affected by any Project activities to the condition that existed immediately before construction began, to the extent possible. The time period may be no longer than twelve (12) months after completion of construction of the turbine, unless otherwise negotiated with the affected landowner(s). Restoration shall be compatible with the safe operation, maintenance, and inspection of the Project .

## **7.13 HAZARDOUS WASTE**

The Permittee shall be responsible for compliance with all laws applicable to the generation, storage, transportation, clean-up and disposal of hazardous wastes generated during any phase of the Project's life.

#### **7.14 APPLICATION OF HERBICIDES**

The Permittee shall restrict herbicide use to those herbicides and methods of application approved by the Minnesota Department of Agriculture and the U.S. Environmental Protection Agency. Selective foliage or basal application shall be used when practicable. The Permittee shall contact the landowner or his designee to obtain approval for the use of herbicide prior to any application on their property. The landowner may request that there be no application of herbicides on any part of the site within the landowner's property. All herbicides shall be applied in a safe and cautious manner so as to not damage property, including crops, orchards, tree farms, or gardens. The Permittee shall also, at least ~~ten (10) working~~ fourteen (14) days prior to the application, notify beekeepers with an active apiary within one mile of the proposed application site of the day the company intends to apply herbicide so that precautionary measures may be taken by the beekeeper.

#### **7.15 PUBLIC SAFETY**

The Permittee shall provide educational materials to landowners within the site boundaries and, upon request, to interested persons about the Project and any restrictions or dangers associated with the Project. The Permittee shall also provide any necessary safety measures, such as warning signs and gates for traffic control or to restrict public access. The Permittee shall submit the location of all underground facilities, as defined in Minnesota Statutes section 216D.01, subdivision 11, to Gopher State One Call.

#### **7.16 EMERGENCY RESPONSE**

The Permittee shall prepare an emergency response plan (fire protection and medical emergency plan) in consultation with the emergency responders having jurisdiction over the area prior to Project construction. The Permittee shall submit a copy of the plan to the Commission at least ~~ten (10) working~~ fourteen (14) days prior to the pre-construction meeting and a revised plan, if any, at least ~~ten (10) working~~ fourteen (14) days prior to the pre-operation compliance meeting. The Permittee shall also register the LWECs with the local governments' emergency 911 services.

#### **7.17 TOWER IDENTIFICATION**

All turbine towers shall be marked with a visible identification number.

#### **7.18 FEDERAL AVIATION ADMINISTRATION LIGHTING**

Towers shall be marked as required by the FAA. There shall be no lights on the towers other than what is required by the FAA. This restriction shall not apply to infrared heating devices used to protect the wind monitoring equipment.

## SECTION 8

### FINAL CONSTRUCTION

#### 8.1 AS-BUILT PLANS AND SPECIFICATIONS

Within sixty (60) days after completion of construction, the Permittee shall submit to the Commission a copy of the as-built plans and specifications. The Permittee must also submit this data in a GIS compatible format so that the Commission can place it into the Minnesota Geospatial Information Office's geographic data clearinghouse located in the Department of Administration.

#### 8.2 FINAL BOUNDARIES

After completion of construction, the Commission shall determine the need to adjust the final boundaries of the site required for this Project. If done, this Permit may be modified, after notice and opportunity for public hearing, to represent the actual site required by the Permittee to operate the Project authorized by this Permit.

#### 8.3 EXPANSION OF SITE BOUNDARIES

No expansion of the site boundaries described in this Permit shall be authorized without the approval of the Commission. The Permittee may submit to the Commission a request for a change in the boundaries of the site for the Project. The Commission will respond to the requested change in accordance with applicable statutes and rules.

#### 8.4 NOTIFICATION TO COMMISSION

At least three (3) days before the Project is to commence commercial operation, the Permittee shall notify the Commission of the date on which the Project will commence commercial operation and the date on which construction was completed.

## SECTION 9

### DECOMMISSIONING/RESTORATION/ABANDONMENT

#### 9.1 DECOMMISSIONING PLAN

At least ~~ten (10) working~~ fourteen (14) days prior to the pre-operation compliance meeting, the Permittee shall submit to the Commission a Decommissioning Plan documenting the manner in which the Permittee anticipates decommissioning the Project in accordance with the requirements of Minnesota Rules part 7854.0500, subp.13. The Permittee shall ensure that it carries out its obligations to provide for the resources necessary to fulfill its requirements to properly decommission the Project at the appropriate time. The Commission may at any time request the Permittee to file a report with the Commission describing how the Permittee is fulfilling this obligation.

## **9.2 SITE RESTORATION**

Upon expiration of this Permit, or upon earlier termination of operation of the Project, or any turbine within the Project, the Permittee shall have the obligation to dismantle and remove from the site all towers, turbine generators, transformers, overhead and underground cables and lines, foundations, buildings, and ancillary equipment to a depth of four feet. To the extent feasible, the Permittee shall restore and reclaim the site to its pre-project topography and topsoil quality. All access roads shall be removed unless written approval is given by the affected landowner(s) requesting that one or more roads, or portions thereof, be retained. Any agreement for removal to a lesser depth or for no removal shall be recorded with the county and shall show the locations of all such foundations. All such agreements between the Permittee and the affected landowner(s) shall be submitted to the Commission prior to completion of restoration activities. The site shall be restored in accordance with the requirements of this condition within eighteen (18) months after expiration or upon earlier termination of the Project, or any turbine within the Project.

## **9.3 ABANDONED TURBINES**

The Permittee shall advise the Commission of any turbines that are abandoned prior to termination of operation of the Project. A Project, or any turbine within the Project, shall be considered abandoned after one (1) year without energy production and the land restored pursuant to Section 9.2 unless a plan is developed and submitted to the Commission outlining the steps and schedule for returning the Project, or any turbine with the Project, to service.

# **SECTION 10**

## **AUTHORITY TO CONSTRUCT LWECS**

### **10.1 WIND RIGHTS**

At least ~~ten (10) working~~ fourteen (14) days prior to the pre-construction meeting, the Permittee shall demonstrate that it has obtained the wind rights and any other rights necessary to construct and operate the Project within the boundaries of the LWECS authorized by this Permit.

Nothing in this Permit shall be construed to preclude any other person from seeking a permit to construct a LWECS in any area within the boundaries of the Project covered by this Permit if the Permittee does not hold exclusive wind rights for such areas.

### **10.2 POWER PURCHASE AGREEMENT**

In the event the Permittee does not have a power purchase agreement or some other enforceable mechanism for sale of the electricity to be generated by the Project at the time this permit is issued, the Permittee shall provide notice to the Commission when it obtains a commitment for purchase of the power. This permit does not authorize construction of the Project until the Permittee has obtained a power purchase agreement or some other enforceable mechanism for sale of the electricity to be generated by the Project. In the event the Permittee does not obtain a

power purchase agreement or some other enforceable mechanism for sale of the electricity to be generated by the Project within two years of the issuance of this Permit, the Permittee must advise the Commission of the reason for not having such ~~commitment~~ power purchase agreement or enforceable mechanism. In such event, the Commission shall determine whether this ~~P~~permit should be amended or revoked. No amendment or revocation of this Permit may be undertaken except in accordance with applicable statutes and rules, including Minnesota Rule 7854.1300.

### **10.3 FAILURE TO COMMENCE CONSTRUCTION**

If the Permittee has not completed the pre-construction surveys required under this permit and commenced construction, as defined in Minnesota Statutes section 216E.01, of the Project within two years of the issuance of this ~~P~~permit, the Permittee must advise the Commission of the reason construction has not commenced. In such event, the Commission shall make a determination as to whether this Permit should be amended or revoked. No revocation of this Permit may be undertaken except in accordance with applicable statutes and rules, including Minnesota Rule 7854.1300.

### **10.4 PREEMPTION OF OTHER LAWS**

Pursuant to Minnesota Statute section 216F.07, this site permit shall be the only site approval required for the location of this Project, and this permit shall supersede and preempt all zoning, building, and land use rules, regulations, and ordinances adopted by regional, county, local, and special purpose governments. Nothing in this permit shall release the Permittee from any obligation imposed by law that is not superseded or preempted by law.

### **10.5 OTHER PERMITS**

The Permittee shall be responsible for acquiring any other federal, state, or local permits or authorizations that may be required to construct and operate a LWECS within the authorized site. The Permittee shall submit a copy of such permits and authorizations to the Commission upon request.

#### **10.5.1 COMPLIANCE WITH FEDERAL AND STATE AGENCY PERMITS**

The Permittee shall comply with all terms and conditions of permits or licenses issued by Federal, State, or Tribal authorities including, but not limited to, the requirements of the PCA (Section 401 Water Quality Certification, National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) stormwater permit for construction activity, and other site specific discharge approvals); DNR (License to Cross Public Lands and Water, Public Water Works Permit, and state protected species consultation); SHPO (Section 106 Historic Consultation Act); FAA determinations, and DOT (Utility Access Permit, Highway Access Permit, Oversize and Overweight Permit, and Aeronautics Airspace Obstruction Permit, and the Mn/DOT Utility Accommodation Policy).

## 10.5.2 COMPLIANCE WITH COUNTY, CITY, OR MUNICIPAL PERMITS

The Permittee shall comply with all terms and conditions of permits, authorizations, or licenses issued by the counties, cities, and municipalities affected by the Project that do not conflict with or are not preempted by federal or state permits and regulations. These authorizations include, but are not limited to, compliance with Minnesota's Wetland Conservation Act.

### SECTION 11

#### COMMISSION POST-ISSUANCE AUTHORITIES

##### 11.1 PERIODIC REVIEW

The Commission shall initiate a review of this Permit and the applicable conditions at least once every five (5) years. The purpose of the periodic review is to allow the Commission, the Permittee, and other interested persons an opportunity to consider modifications in the conditions of the Permit. No modification may be made except in accordance with applicable statutes and rules.

##### 11.2 MODIFICATION OF CONDITIONS

After notice and opportunity for hearing, this Permit may be modified or amended for cause, including but not limited to the following:

- (a) Violation of any condition in this permit;
- (b) Endangerment of human health or the environment by operation of the Project: or
- (c) Existence of other grounds established by rule.

##### 11.3 REVOCATION OR SUSPENSION OF THE PERMIT

The Commission may take action to suspend or revoke this Permit upon the grounds that:

- (a) A false statement was knowingly made in the application or in accompanying statements or studies required of the Permittee, and a true statement would have warranted a change in the Commission's findings;
- (b) There has been a failure to comply with material conditions of this Permit, or there has been a failure to maintain health and safety standards; or
- (c) There has been a material violation of a provision of an applicable statute, rule or an order of the Commission.

In the event the Commission shall determine that it is appropriate to consider revocation or suspension of this Permit, the Commission shall proceed in accordance with the requirements of Minnesota Rule 7854.1300 to determine the appropriate action. Upon a finding of any of the

above, the Commission may require the Permittee to undertake corrective measures in lieu of having the Permit suspended or revoked.

#### **11.4 MORE STRINGENT RULES**

The Commission's issuance of this Site Permit does not prevent the future adoption by the Commission of rules or orders more stringent than those now in existence and does not prevent the enforcement of these more stringent rules and orders against the Permittee.

#### **11.5 TRANSFER OF PERMIT**

The Permittee may not transfer this Permit without the approval of the Commission. If the Permittee desires to transfer this Permit, the holder shall advise the Commission in writing of such desire. The Permittee shall provide the Commission with such information about the transfer as the Commission requires to reach a decision. The Commission may impose additional conditions on any new Permittee as part of the approval of the transfer.

#### **11.6 RIGHT OF ENTRY**

Upon reasonable notice, presentation of credentials, and at all times in compliance with the Permittee's site safety standards, the Permittee shall allow representatives of the Commission to perform the following:

- (a) To enter upon the facilities easement of the site property for the purpose of obtaining information, examining records, and conducting surveys or investigations;
- (b) To bring such equipment upon the facilities easement of the property as is necessary to conduct such surveys and investigations;
- (c) To sample and monitor upon the facilities easement of the property; and
- (d) To examine and copy any documents pertaining to compliance with the conditions of this Permit.

#### **11.7 PROPRIETARY INFORMATION**

Certain information required to be submitted to the Commission under this Permit, ~~including energy production and wake loss data,~~ may constitute trade secret information or other type of proprietary information under the Data Practices Act or other law and is not to be made available by the Commission. The Permittee must satisfy requirements of applicable law to obtain the protection afforded by the law.

## **SECTION 12**

### **EXPIRATION DATE**

This Permit shall expire thirty (30) years after the date this permit was approved and adopted.

## SECTION 13

### SPECIAL CONDITIONS

Special conditions shall take precedence over any of the other conditions of this Permit if there should be a conflict between the two.

#### 13.1 APPLICATION OF COUNTY STANDARD

The Permittee shall site all wind turbines and associated facilities consistent with the wind energy ordinances adopted by Stearns County. Stearns County has adopted more stringent standards than those identified in Section 4 of this permit for the following features:

- (a) Property Lines: Turbines shall have a setback of 1.1 times the total height, (as measured from the tip of the blade when the blade is extended perpendicular to the tower) from property lines. A recorded fall zone easement acceptable to Stearns County may be allowed in lieu of this setback, provided all other setbacks are met;
- (b) Occupied Structure – Participating Property Owner: Turbines shall be set back at least 500 feet and sufficient distance to meet the state noise standard, from occupied structures of participating property owners;
- (c) Occupied Structure – Non-Participating Property Owner: Turbines shall be set back at least 1,000 feet and sufficient distance to meet the state noise standard from occupied structures of non-participating property owners;
- (d) Project Boundary: Turbines shall be set back a distance of 5 rotor diameters from all parcels of land for which the Permittee has a wind easement for this Project, unless the Stearns County Board finds that the wake interference is less than 5 rotor diameters;
- (e) Shadow Flicker Modeling: Permittee shall incorporate assumptions identified in Stearns County Ordinance when modeling for shadow flicker; and
- (f) Shoreland Overlay District: Turbines shall not be placed within areas designated by Stearns County as a “Shoreland Overlay District.”

#### **13.2 OVERHEAD FEEDER LINES**

The Permittee shall use bird flight diverters on overhead feeder lines within or adjacent to delineated wetland areas and waterways. The Permittee shall provide DNR and the Commission with the location and spacing of proposed bird flight diverters at least fourteen (14) days prior to construction of overhead feeder lines.

### **13.3 SITE-SPECIFIC BAT STUDY**

The Avian and Bat Protection Plan in Section 6.7 shall include provision for a site-specific study characterizing bat activity and species present within the Project area developed in consultation with the Commission, DNR, and USFWS. The ABPP shall outline the monitoring protocol and data to be analyzed in the bat study. The Permittee shall submit a report summarizing the findings of the study and recommendations for further actions to the Commission no later than December 15, 2012. Need for additional studies shall be based on review of this compliance filing.

### **13.4 AVIAN AND BAT POST-CONSTRUCTION FATALITY MONITORING**

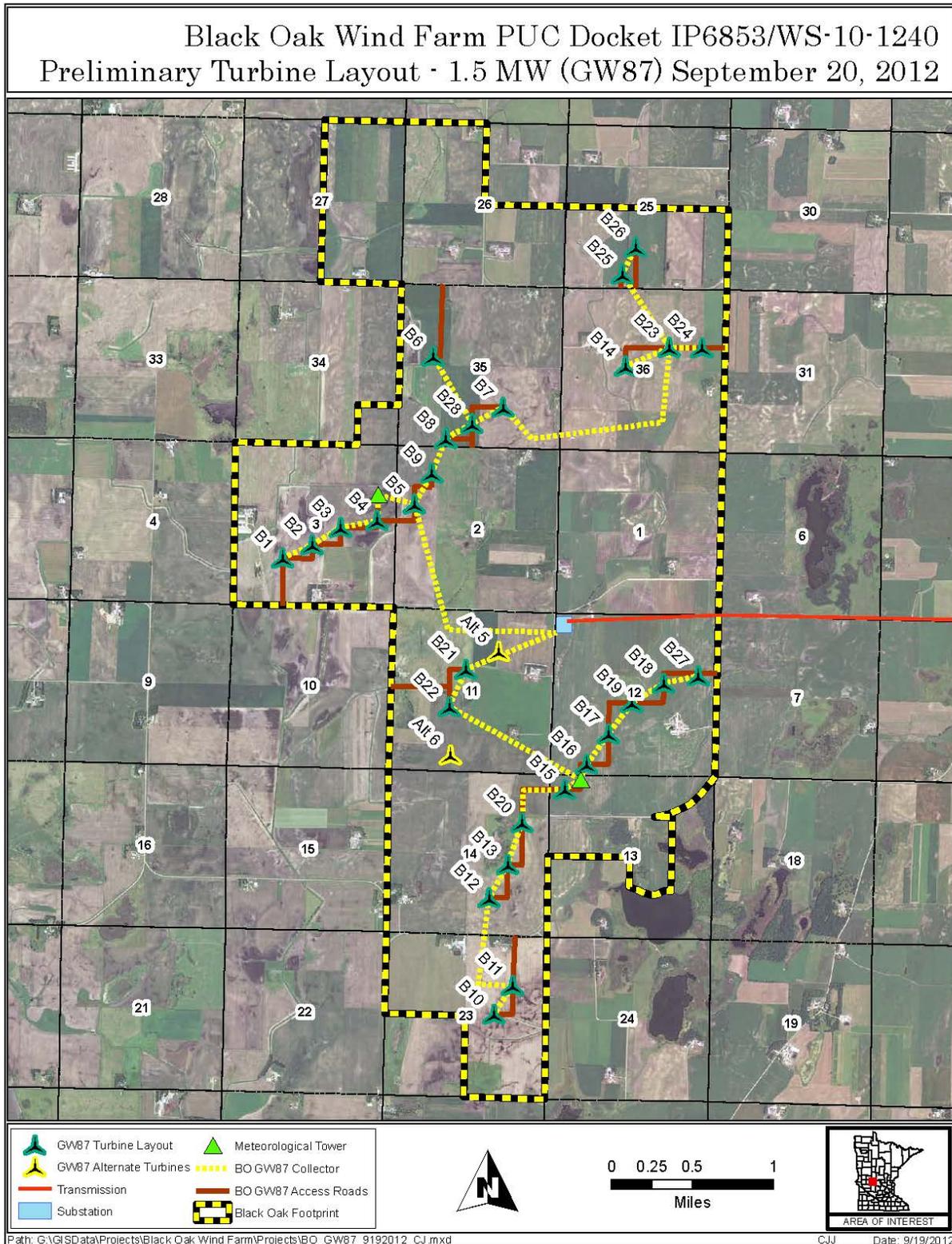
The Permittee shall, in consultation with DNR, design and implement a post-construction avian and bat fatality survey consistent with the DNR Draft Avian and Bat Monitoring Protocol for a site considered to be of moderate risk to wildlife. The survey design shall be filed with the Commission no later than ninety (90) days prior to commercial operation of the Project. The survey shall be conducted for a minimum of one complete field season starting March 15 and ending November 15 after the commencement of commercial operation. At a minimum, fatality monitoring must include:

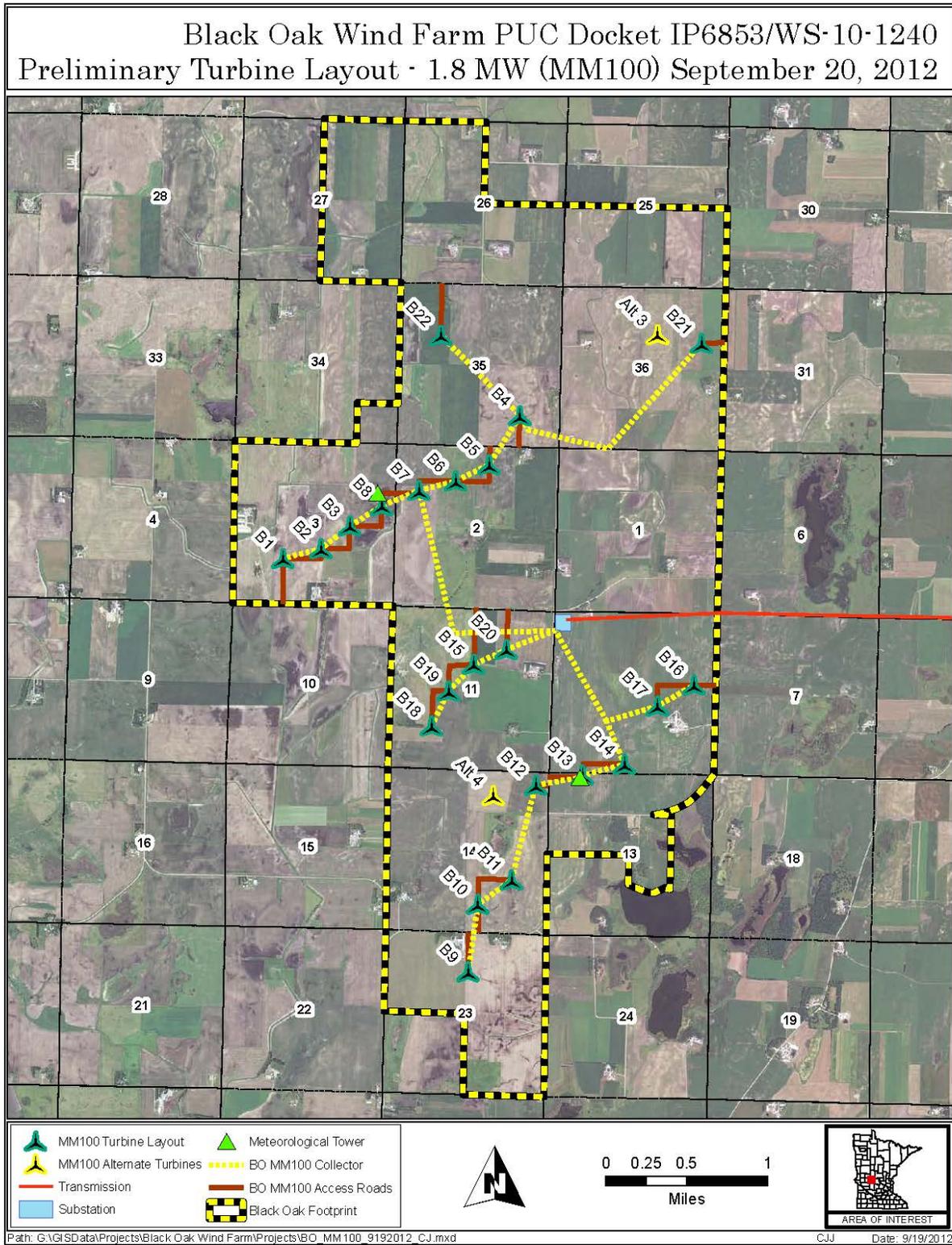
- 1) Twenty percent of the turbines will be searched (minimum 10 and maximum 25)
- 2) 160 meter square search plot centered on the base of the turbine (80 meters in each direction from the turbine base).
- 3) Two search days per week
- 4) 75 searcher efficiency trials
- 5) 50 carcass removals
- 6) Minimum search time of 1-2 hours per turbine

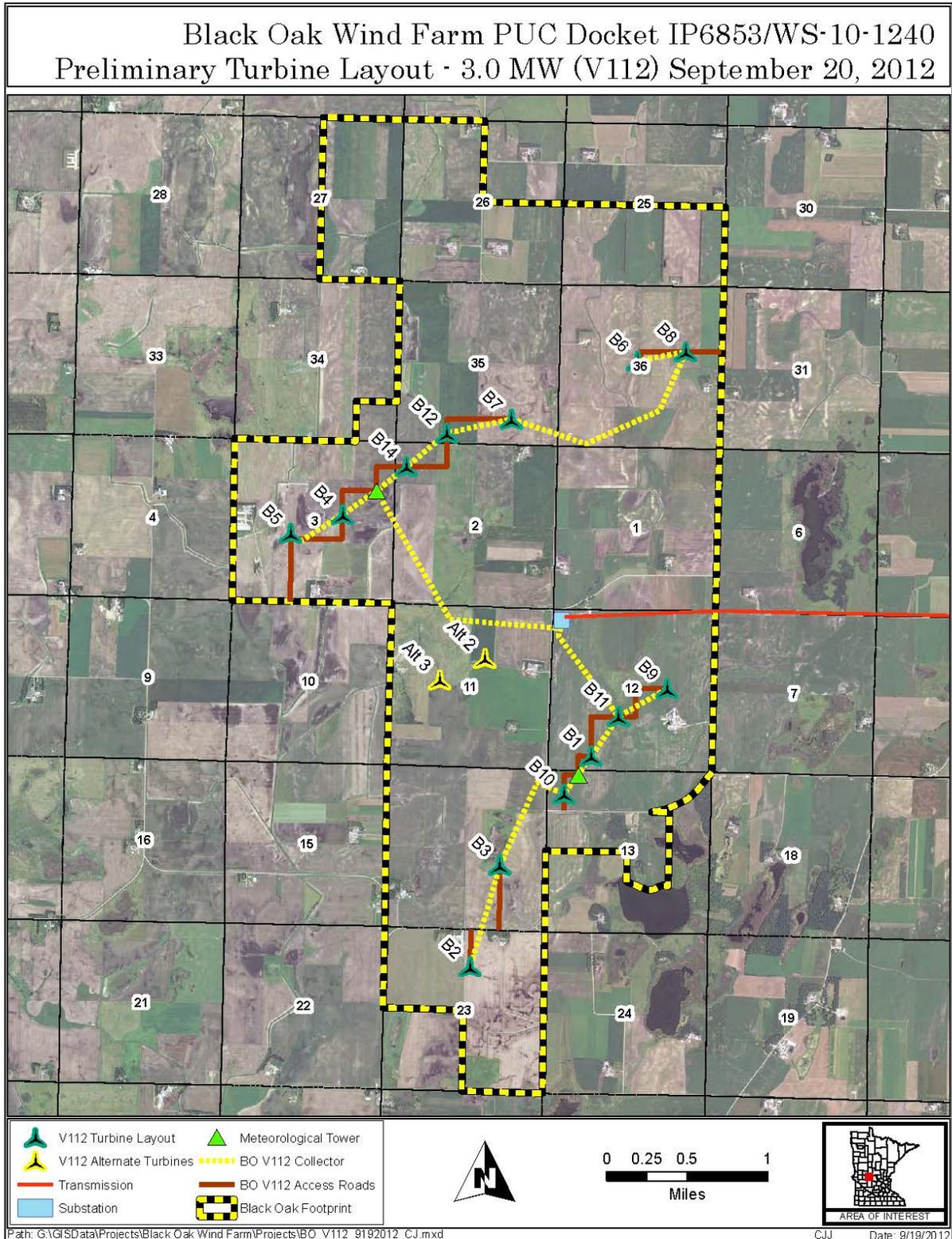
Monitoring results shall be submitted to Commission, DNR, and USFWS monthly. Monthly results shall be provided in an Excel spreadsheet and include summarized and raw data.

### **13.5 PROJECT SUBSTATION**

The location of the Project Substation shall comply with the setback requirements set forth in Stearns County Land Use and Zoning Ordinance.







**MINNESOTA PUBLIC UTILITIES COMMISSION  
COMPLAINT HANDLING PROCEDURES  
FOR  
LARGE WIND ENERGY CONVERSION SYSTEMS**

**A. Purpose:**

To establish a uniform and timely method of reporting complaints received by the Permittee concerning Permit conditions for site preparation, construction, cleanup and restoration, operation and resolution of such complaints.

**B. Scope:**

This document describes Complaint reporting procedures and frequency.

**C. Applicability:**

The procedures shall be used for all complaints received by the Permittee.

**D. Definitions:**

Complaint: A verbal or written statement presented to the permittee by a person expressing dissatisfaction or concern regarding site preparation, cleanup or restoration, or other LWECS and associated facilities site permit conditions. Complaints do not include requests, inquiries, questions or general comments.

Substantial Complaint: A written Complaint alleging a violation of a specific Site Permit condition that, if substantiated, could result in Permit modification or suspension pursuant to the applicable regulations.

Unresolved Complaint: A Complaint which, despite the good faith efforts of the permittee and a person(s), remains to both or one of the parties unresolved or unsatisfactorily resolved.

Person: An individual, partnership, joint venture, private or public corporation, association, firm, public service company, cooperative, political subdivision, municipal corporation, government agency, public utility district, or any other entity, public or private, however organized.

**E. Complaint Documentation and Processing:**

1. The Permittee shall document all Complaints by maintaining a record of all applicable information concerning the Complaint, including the following:

- a. Name of complainant, address, phone number, and e-mail address.
  - b. Precise property description or parcel number.
  - c. Name of Permittee representative receiving Complaint and date of receipt.
  - d. Nature of Complaint and the applicable Site Permit conditions(s).
  - e. Activities undertaken to resolve the Complaint.
  - f. Final disposition of the Complaint.
2. The Permittee shall designate an individual to summarize Complaints for substantial to the Commission. This person's name, phone number and e-mail address shall accompany all complaint submittals.
  3. A Person presenting the Complaint should to the extent possible, include the following information in their communications:
    - a. Name, address, phone number, and e-mail address.
    - b. Date
    - c. Tract or parcel
    - d. Whether the complaint relates to (1) a Site Permit matter, (2) a LWECS and associated facility issue, or (3) a compliance issue.

**F. Reporting Requirements:**

The Permittee shall report all complaints to the Commission according to the following schedule:

**Immediate Reports:** All substantial complaints shall be reported to the Commission the same day received, or on the following working day for complaints received after working hours. Such reports are to be directed to Wind Permit Compliance, 1-800-657-3794, or by e-mail to: [DOC.energypermitcompliance@state.mn.us](mailto:DOC.energypermitcompliance@state.mn.us). Voice messages are acceptable.

**Monthly Reports:** By the 15th of each month, a summary of all complaints, including substantial complaints received or resolved during the preceding month, shall be eFiled to Dr. Burl W. Haar, Executive Secretary, Public Utilities Commission, using the Minnesota Department of Commerce eDocket system (see eFiling instructions attached to this permit).

If no Complaints were received during the preceding month, the permittee shall submit (eFile) a summary indicating that no complaints were received.

**G. Complaints Received by the Commission or OES:**

Complaints received directly by the Commission from aggrieved persons regarding site preparation, construction, cleanup, restoration, operation and maintenance shall be promptly sent to the Permittee.

**H. Commission Process for Unresolved Complaints:**

**Initial Screening:** Commission staff shall perform an initial evaluation of unresolved Complaints submitted to the Commission. Complaints raising substantial LWECS Site Permit issues shall be processed and resolved by the Commission. Staff shall notify Permittee and appropriate person(s) if it determines that the Complaint is a Substantial Complaint. With respect to such Complaints, each party shall submit a written summary of its position to the Commission no later than ten days after receipt of the Staff notification. Staff shall present Briefing Papers to the Commission, which shall resolve the Complaint within twenty days of submission of the Briefing Papers.

**I. Permittee Contacts for Complaints:**

**Mailing Address:** Complaints filed by mail shall be sent to the address below:

Patrick Smith  
Black Oak Wind, LLC  
7650 Edinborough Way, Suite 7250  
Edina, MN 55435

**Tel:** 952-988-9000

**eMail:** patrick@geronimowind.com

**MINNESOTA PUBLIC UTILITIES COMMISSION  
COMPLIANCE FILING PROCEDURE  
FOR PERMITTED ENERGY FACILITIES**

**1. Purpose**

To establish a uniform and timely method of submitting information required by the Commission energy facility permits.

**2. Scope and Applicability**

This procedure encompasses all compliance filings required by permit.

**3. Definitions**

Compliance Filing – A filing of required information to the Commission pursuant to a site or route permit.

**4. Responsibilities**

- A) The permittee shall eFile all compliance filings with Dr. Burl Haar, Executive Secretary, Public Utilities Commission, through the Department of Commerce (DOC) eDocket system. The system is located on the DOC website:  
<https://www.edockets.state.mn.us/EFiling/home.jsp>

General instructions are provided on the website. Permittees must register on the website to eFile documents.

- B) All filings must have a cover sheet that includes:

- 1) Date
- 2) Name of submitter / permittee
- 3) Type of Permit (Site or Route)
- 4) Project Location
- 5) Project Docket Number
- 6) Permit Section Under Which the Filing is Made
- 7) Short Description of the Filing

- C) Filings that are graphic intensive (e.g., maps, plan and profile) must, in addition to being eFiled, be submitted as paper copies and on CD. Copies and CDs should be sent to: 1) Dr. Burl W. Haar, Executive Secretary, Minnesota Public Utilities Commission, 121 7<sup>th</sup> Place East, Suite 350, St. Paul, MN, 55101-2147, and 2) Department of Commerce, Energy Facility Permitting, 85 7<sup>th</sup> Place East, Suite 500, St. Paul, MN, 55101-2198. Additionally, the Commission may request a paper copy of any eFiled document.

**ATTACHMENT 4: PERMIT COMPLIANCE FILINGS**

**PERMIT COMPLIANCE FILINGS<sup>1</sup>**

**PERMITTEE:** Black Oak Wind, LLC  
**PERMIT TYPE:** LWECS Site Permit  
**PROJECT LOCATION:** Stearns County  
**COMMISSION DOCKET NUMBER:** IP-6853/WS-10-1240

**PRE-CONSTRUCTION MEETING**

<b>Permit Section</b>	<b>Description</b>	<b>Due Date</b>	<b>Notes</b>	<b>eDocket Doc. ID</b>	<b>Date Filed</b>
4.7	Native Prairie Protection Plan	<del>10 working</del> 14 days prior to pre-construction meeting, if required.	Develop in consultation with Commission and DNR.		
5.1	Site Plan	<del>10 working</del> 14 days prior to pre-construction meeting.			
5.4	Field Representative	<del>10 working</del> 14 days prior to pre-construction meeting.			
5.8	Complaint Reporting Procedures	<del>10 working</del> 14 days prior to pre-construction meeting.			
6.1	Biological & Natural Resource Inventories	30 days prior to pre-construction Meeting.	Results may trigger need for a Native Prairie Protection Plan.		
6.2	Shadow Flicker Analysis	<del>10 working</del> 14 days prior to pre-construction meeting.			
6.3	Archaeological Resources	<del>10 working</del> 14 days prior to pre-construction meeting and as recommended by the State Historic Preservation Office.			
6.4	Interference	<del>10 working</del> 14 days prior to pre-construction Meeting.			

<sup>1</sup> This compilation of permit compliance filings is provided for the convenience of the permittee and the Commission. However, it is not a substitute for the permit; the language of the permit controls.

**ATTACHMENT 4: PERMIT COMPLIANCE FILINGS**

**PRE-CONSTRUCTION MEETING**

6.5	Wake Loss	<del>10 working</del> 14 days prior to pre-construction meeting.			
6.7	<del>Avian and Bat Protection Plan</del>	<del>10 days prior to pre-construction meeting.</del>	Develop in consultation with Commission and DNR.		
7.8	Road Identification	<del>10 working</del> 14 days prior to pre-construction meeting.			
7.11	Soil Erosion & Sediment Control Plan	<del>10 working</del> 14 days prior to pre-construction.	May be the same as NPDES SWPPP.		
7.16	Emergency Response	<del>10 working</del> 14 days prior to pre-construction meeting.	Must register in 911 Program.		
10.1	Wind Rights	<del>10 working</del> 14 days prior to pre-construction meeting.			

**PRE-OPERATION COMPLIANCE MEETING**

<b>Permit Section</b>	<b>Description</b>	<b>Due Date</b>	<b>Notes</b>	<b>eDocket Doc. ID</b>	<b>Date Filed</b>
5.7	Pre-operation compliance meeting	<del>10 working</del> 14 days prior to commercial operation.			
6.6	Noise Study Protocol	<del>10 working</del> 14 days prior to pre-operation meeting.			
9.1 & 9.3	Decommissioning Plan	<del>10 working</del> 14 days prior to commercial operation.			

**ATTACHMENT 4: PERMIT COMPLIANCE FILINGS**

**OTHER REQUIREMENTS**

<b>Permit Section</b>	<b>Description</b>	<b>Due Date</b>	<b>Notes</b>	<b>eDocket Doc. ID</b>	<b>Date Filed</b>
5.2	Notice to Landowners & Government Units	Within 30 working days of permit issuance.			
5.5	Site Manager	<del>10 working</del> 14 days prior to prior to commercial operation.	Update contact information as necessary.		
5.8	Complaints	Complaint submittals on the 15 <sup>th</sup> of each month or within 24 hours.	Must eFile report even if no complaints.		
6.6	Noise Study Results	Within 18 months of Commercial Operation.			
6.7	<del>Avian and Bat Reporting Requirements</del>	<del>Quarterly reports due and within 24 hours of discovery of certain species.</del>			
6.7.1	<u>Annual Audit Report of ABPP</u>	<u>By March 15 following each complete or partial year of operation</u>			
6.7.2	<u>Quarterly Incident Reports</u>	<u>By the 15<sup>th</sup> of January, April, July, and October</u>			
6.7.3	<u>Immediate Incident Reports</u>	<u>Within 24 hours of discovery</u>			
6.8	Project Energy Production	Due 2/1 each year.			
6.9	Wind Resource Use	<del>Upon request of the Commission.</del> <u>February 1<sup>st</sup> following each complete or partial year of operation</u>			
6.10	Extraordinary Events	Within 24 hours and report on occurrence of event within 30 days.			
8.1	As Builts	Within 60 days of completion of construction.			

**ATTACHMENT 4: PERMIT COMPLIANCE FILINGS**

**OTHER REQUIREMENTS**

8.4	<u>Notification to Commission</u>	<u>3 days prior to commercial operation</u>			
10.2	PPA or Enforceable Mechanism	Within 2 years of permit issuance.	If no PPA or other enforceable mechanism at time of permit issuance.		
10.3	Failure to Start Construction	Within 2 years of permit issuance.			
13.3	<u>Site Specific Bat Study</u>	<u>December 15, 2012</u>			
13.4	<u>Avian and Bat Post-Construction Monitoring – Survey Design</u>	<u>90 days prior to commercial operation of the Project</u>			
13.4	<u>Avian and Bat Post-Construction Monitoring – Monitoring Results</u>	<u>Monthly so long as monitoring is being conducted</u>			