

STATE OF MINNESOTA
PUBLIC UTILITIES COMMISSION

In the Matter of the Application of
Palmer’s Creek Wind Farm, LLC for a
Large Wind Energy Conversion System
Site Permit for the 44.6 MW Palmer’s
Creek Wind Project in Chippewa County,
Minnesota

**SUMMARY OF PUBLIC TESTIMONY,
FINDINGS OF FACT,
CONCLUSIONS OF LAW,
AND RECOMMENDATION**

TABLE OF CONTENTS

STATEMENT OF THE ISSUE..... 2

SUMMARY OF CONCLUSIONS AND RECOMMENDATION..... 2

FINDINGS OF FACT..... 2

 I. Applicant..... 2

 II. Site Permit Application and Procedural Background 3

 III. General Description of the Project..... 7

 IV. Site Location and Characteristics..... 9

 V. Wind Resource Considerations..... 9

 VI. Wind Rights and Easement/Lease Agreements 10

 VII. Project Schedule..... 10

 VIII. Summary of Public and Agency Comments..... 10

 IX. Site Permit Criteria 18

 X. Application of the Statutory Siting Criteria to the Project..... 19

 A. Human Settlement..... 19

 B. Zoning and Land Use..... 20

 C. Noise 23

 D. Shadow Flicker 24

 E. Visual Impacts 26

 F. Public Services and Infrastructure 28

 1. Roads..... 28

 2. Telecommunications 29

 3. Installation of Cables 30

G.	Cultural and Archaeological Resources	31
H.	Recreational Resources	33
I.	Public Health and Safety	34
	1. EMFs and Stray Voltage	34
	2. Aviation	35
	3. Safety and Security	35
J.	Pollution and Hazardous Waste	36
K.	Land-Based Economies	36
	1. Agriculture	36
	2. Mining	37
L.	Tourism	37
M.	Local Economy	39
N.	Topography	39
O.	Soils	39
P.	Geologic and Groundwater Resources	41
Q.	Surface Water and Wetland Resources	41
R.	Vegetation	42
S.	Wildlife Resources	43
T.	Rare and Unique Natural Resources	49
U.	Future Development and Expansion	50
V.	Decommissioning, Turbine Abandonment and Restoration	50
W.	Permit Conditions	51
	CONCLUSIONS OF LAW	52
	RECOMMENDATION	Error! Bookmark not defined.
	NOTICE	Error! Bookmark not defined.

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS
FOR THE PUBLIC UTILITIES COMMISSION

In the Matter of the Application of Palmer's Creek Wind Farm, LLC for a Large Wind Energy Conversion System Site Permit for the 44.6 MW Palmer's Creek Wind Project in Chippewa County, Minnesota

**SUMMARY OF PUBLIC TESTIMONY,
FINDINGS OF FACT,
CONCLUSIONS OF LAW,
AND RECOMMENDATION**

This matter was assigned to Administrative Law Judge Barbara J. Case to conduct a public hearing and provide a summary of public testimony on the site permit application (Application) filed by Palmer's Creek Wind Farm, L.L.C. (Applicant) for an up to 44.6 megawatts (MW) wind energy conversion system in Chippewa County, Minnesota (the Project). The Public Utilities Commission (Commission) also asked the Administrative Law Judge to prepare Findings of Fact, Conclusions of Law, and a Recommendation on whether the Project meets site permitting criteria set forth in Minn. Stat. ch. 216F (2016), Minn. R. ch. 7854 (2017).

A public information meeting was held on June 26, 2017, at 6:00 p.m. at the Kilowatt Community Center, 600 Kilowatt Drive, in Granite Falls, Minnesota.

A public hearing was held on September 11, 2017, at 6:00 p.m. at the Montevideo Community Center, 550 South 1st Street, in Montevideo, Minnesota.

The factual record remained open until September 21, 2017, for the receipt of written public comments.

Mike Rutledge, head of the Fagen Engineering, LLC, Environmental Services Department; Todd Hay, head of the Fagen Engineering, LLC, Civil Engineering Department; and Kate Carlton, Fagen Inc., Engineering Corporate Counsel, appeared at the public hearing on behalf of Palmer's Creek Wind Farm, LLC, L.L.C. (Applicant.)¹

Rich Davis, Environmental Review Manager, appeared at the public hearing on behalf of the Department of Commerce Energy Environmental Review and Analysis division (DOC-EERA).

Michael Kaluzniak, Utilities Analyst with the Commission, appeared at the public hearing on behalf of the Commission.

¹ Public Hearing Transcript (Tr.) at 17 (Sept. 11, 2017) (eDocket No. 20179-135510-01).

Written submissions were filed by Applicant and the DOC-EERA on September 28, 2017, and October 9, 2017. On November 1, 2017 the Applicant filed a wetlands determination report. The record closed on November 2, 2017.

STATEMENT OF THE ISSUE

Has Applicant met the relevant criteria to receive a site permit for the Project under Minn. Stat. ch. 216F and Minn. R. ch. 7854?

SUMMARY OF CONCLUSIONS AND RECOMMENDATION

The Administrative Law Judge concludes that Applicant has satisfied the applicable legal requirements and recommends that the Commission grant a site permit for the Project subject to the conditions discussed below.

Based on the evidence in the hearing record, the Administrative Law Judge makes the following:

FINDINGS OF FACT²

I. Applicant

1. Applicant is wholly owned by Project Hawkeye L.L.C.³ Applicant was formed to develop and own the Project.⁴

2. Project Hawkeye L.L.C. is an entity owned by four members of the Fagen family.⁵ The four family members are also owners of Fagen, Inc.⁶

3. The four Fagen family members and affiliated entities own Fagen, Inc. ~~developed~~ the Big Blue Wind Farm, which is currently operating in Faribault County, Minnesota.⁷

4. Mike Rutledge, head of the Environmental Services Department at Fagen Engineering, L.L.C. is an authorized representative for Applicant.⁸ Roland Fagen is the President of Applicant.⁹

² A master exhibit list was filed by the court reporter on September 14, 2017. See eDocket No. 20179-135509-01.

³ Documentation of Ownership (Oct. 23, 2017) (eDocket No. 201710-136693-01).

⁴ *Id.*; Site Permit Application (Apr. 11, 2017) (eDocket No. 20174-130706-02).

⁵ Documentation of Ownership (Oct. 23, 2017) (eDocket No. 201710-136693-01).

⁶ *Id.*

⁷ Comments and Recommendations by DOC-EERA (May 8, 2017) (eDocket No. 20175-131673-01).

⁸ Authorized Signature for LWECS Site Permit Application (May 30, 2017) (eDocket No. 20175-132291-01).

⁹ Documentation of Ownership (Oct. 23, 2017) (eDocket No. 201710-136693-01).

II. Site Permit Application and Procedural Background

5. On April 11, 2017, Applicant filed the Application for the Project with the Commission.¹⁰

6. The Project as proposed will be up to 44.6 megawatts or 44,600 kilowatts.¹¹ The Project does not meet the definition of a large energy facility under Minn. Stat. § 216B.2421 (2016) because the combined capacity is under 50,000 kilowatts. Thus, a certificate of need is not required from the Commission.¹²

7. On April 20, 2017, the Commission issued a notice requesting comments on: (1) whether the Application contains the information required under Minn. R. ch. 7854; (2) whether there are any contested issues of fact with respect to representations made in the Application; and (3) whether the Application should be referred to the Office of Administrative Hearings for a contested case proceeding.¹³

8. On May 8, 2017, the DOC-EERA filed comments and recommendations on the Application.¹⁴ DOC-EERA staff reviewed the Application in relation to the content requirements of Minn. R. ch. 7854 and concluded that the Application included sufficient information to proceed with the review process.¹⁵ However, DOC-EERA staff noted that archeological surveys were not complete when the Application was filed and recommended that Applicant supplement the Application with the survey results before the Commission issued a draft site permit.¹⁶ DOC-EERA staff also recommended that the Commission accept the Application as complete with the understanding that the permitting process would not progress until the information regarding cultural and archeological resources was provided.¹⁷

9. On May 11, 2017, Applicant filed updated survey results as recommended by the DOC-EERA.¹⁸

10. On June 9, 2017, the DOC-EERA filed a Notice of Public Information Meeting for the public meeting in Granite Falls, Minnesota.¹⁹ The Notice requested comments on issues and facts to be considered in the development of a draft site permit.²⁰ The Notice also sought comments on the potential human and environmental impacts from the Project and possible methods to minimize, mitigate, or avoid the potential impacts.²¹ The Notice also asked for comments on whether any unique

¹⁰ Site Permit Application (Apr. 11, 2017) (eDocket No. 20174-130706-02).

¹¹ Commission Staff Briefing Papers (June 1, 2017) (eDocket No. 20175-132189-01).

¹² *Id.*

¹³ Notice of Comment Period (Apr. 20, 2017) (eDocket No. 20174-131026-01).

¹⁴ Comments and Recommendations by DOC-EERA (May 8, 2017) (eDocket No. 20175-131673-01).

¹⁵ *Id.*

¹⁶ *Id.*

¹⁷ *Id.*

¹⁸ Site Permit Application, Revised App. K (May 11, 2017) (eDocket No. 20175-131774-01).

¹⁹ Notice of Public Information Meeting (June 9, 2017) (eDocket No. 20176-132675-01).

²⁰ *Id.*

²¹ *Id.*

characteristics of the proposed site and Project should be considered and whether there were any items missing or mischaracterized in the Application.²²

11. On June 16, 2017, the Commission accepted the Application as substantially complete.²³ The Commission also granted rule variances for notice requirements, the time frame for the Commission's decision on the draft site permit, and referred the case to the Office of Administrative Hearings.²⁴

12. On June 26, 2017, the Minnesota Pollution Control Agency (MPCA) filed comments noting that permits, certifications, or waivers related to water quality might be necessary for the Project.²⁵

13. On July 6, 2017, the Minnesota Department of Transportation (MNDOT) filed comments regarding provisions in the Draft Site Permit that might impact on the state transportation system.²⁶

14. On July 6, 2017 the Minnesota Department of Natural Resources (MNDNR) filed a letter sent to Mike Rutledge at Fagen Engineering, L.L.C. on March 10, 2016, regarding specific sections of the MNDNR Guidance for Commercial Wind Energy Projects that are relevant to the Project, including: Rare Species and Native Plant Communities; Native Prairies; Public Conservation and Recreation Lands; Properties in Government Programs or With Conservation Easements; Wild and Scenic River Districts; Important Bird Areas; and Lakes, Wetlands, Streams, and Rivers.²⁷

15. On July 6, 2017, MNDNR also filed a letter addressed to Rich Davis at the DOC-EERA on July 6, 2017, noting that the Project is likely to be a high-risk site based on habitat quality, the turbine layout, and poorly collected bat acoustic data.²⁸

16. On July 13, 2017, the Administrative Law Judge issued a Notice of Prehearing Conference setting a prehearing conference by telephone on July 18, 2017, at 9:30 a.m.²⁹

18. On July 18, 2017, Applicant filed a motion requesting permission to store wind turbines within the boundaries of the Project area prior to receiving a site permit.³⁰

19. On July 24, 2017, the Administrative Law Judge issued a Scheduling Order: (1) establishing Applicant and the DOC-EERA as parties to this proceeding; (2)

²² *Id.*

²³ Order Finding Application Complete, Referring Application to the Office of Administrative Hearings, and Varying Time Frames (June 16, 2017) (eDocket No. 201611-126840-01).

²⁴ *Id.*

²⁵ Comment by MPCA (June 16, 2017) (eDocket No. 20176-133111-01).

²⁶ Comment by MNDOT (July 6, 2017) (eDocket No. 20177-133574-01).

²⁷ Comment by MNDNR (July 6, 2017) (eDocket No. 20177-133566-02).

²⁸ Comment by MNDNR (July 6, 2017) (eDocket No. 20177-133566-01).

²⁹ Notice of Prehearing Conference (July 13, 2017) (eDocket No. 20177-133828-01).

³⁰ Applicant Motion to Confirm Allowance of Pre-Permit Storage Activities or for Variance (July 18, 2017) (eDocket No. 20177-134000-01).

requesting participation of state agencies pursuant to Minn. Stat. § 216E.10, subd. 3 (2016); (3) scheduling a public hearing on the Application to be held on September 11, 2017 in Chippewa County; (4) establishing a September 21, 2017 deadline for written comments to be submitted by the public and state agencies; (5) establishing a September 28, 2017 deadline for the Applicant to submit written responses to comments received at the public hearing, proposed Findings of Fact, Conclusions of Law, and Recommendation on the Application, and any suggestions as to appropriate permit conditions; (6) establishing an October 9, 2017 deadline for the DOC-EERA to submit comments and recommendations regarding appropriate permit conditions; (7) establishing a November 8, 2017 deadline for the Administrative Law Judge to file and serve her report; and (8) establishing a November 22, 2017 deadline for parties to file exceptions to the report.³¹

20. On July 28, 2017, the Commission issued a Notice of Commission Meeting to determine whether the Commission should issue a preliminary draft site permit for the Project.³²

21. On July 31, 2017, the Commission issued a corrected Notice of Commission Meeting noting that the Commission would also consider whether it should approve Applicant's request to allow for temporary storage of turbines on site before the final site permit is granted.³³

22. On July 31, 2017, Chippewa County (County) filed a letter with the Commission noting that it does not oppose Applicant's request to store wind turbines on the Project site before issuance of a site permit.³⁴

23. On August 3, 2017, Applicant submitted confirmation that it completed the notice requirements set forth in Minn. R. 7854.0600 and provided all required direct mail notices and newspaper publications concerning the Application.³⁵ Applicant further confirmed placement of copies of the Application in the Montevideo Public Library and the Granite Falls Public Library for public review.³⁶

24. On August 23, 2017, the Commission issued an Order Issuing the Draft Site Permit and denied Applicant's motion to allow temporary storage of turbines on site.³⁷

25. On August 25, 2017, the Commission issued a Notice of Public Hearing and a Notice of Draft Site Permit Availability.³⁸ The Notice provided that a public hearing on the Application would be held before the Administrative Law Judge on September 11,

³¹ Scheduling Order (July 24, 2017) (eDocket No. 20177-134194-01).

³² Notice of Commission Meeting (July 28, 2017) (eDocket No. 20177-134321-12).

³³ Corrected Notice of Commission Meeting (July 31, 2017) (eDocket No. 20177-134383-02).

³⁴ Letter from Jon Clauson, Chippewa County Auditor/Treasurer & Clerk to the Board, to the Commission (July 26, 2017) (eDocket No. 20177-134392-01).

³⁵ *Id.*

³⁶ Affidavit of Publication (Aug. 3, 2017) (eDocket No. 20178-134490-01).

³⁷ Order Issuing Draft Site Permit (Aug. 23, 2017) (eDocket No. 20178-134955-01).

³⁸ Notice of Public Hearing & Draft Site Permit Availability (Aug. 25, 2017) (eDocket No. 20178-134993-01).

2017, and solicited written comments on: (1) whether the Commission should issue a Site Permit for the Project; (2) the environmental and human impacts of the Project and how the impacts can be addressed in the Site Permit; and (3) whether there are other Project-related issues or concerns.³⁹ The Notice established a September 21, 2017 deadline for written comments.⁴⁰

26. On September 8, 2017, Applicant filed an Affidavit of Publication confirming that on August 31, 2017, it published the “Notice of Public Hearing and Draft Site Permit Availability” in the Granite Falls – Clarkfield Advocate Tribune and Montevideo American-News.⁴¹

27. On September 11, 2017, the Administrative Law Judge convened a public hearing in Montevideo, Minnesota.⁴² Members of the public, Commission staff, DOC-EERA staff, and representatives from Applicant were present. Four members of the public made comments on the record during the hearing.⁴³

28. Two written comments were received from the public before the close of the comment period on September 21, 2017. One of the public comments was received on September 15, 2017, and the second comment was received on September 19, 2017.⁴⁴

29. On September 21, 2017, MNDNR submitted written comments.⁴⁵

30. On September 28, Applicant filed a reply to comments received during the public hearing and comment period, as well as proposed Findings of Fact.⁴⁶

31. On September 29, 2017, the DOC-EERA filed reply comments in response to comments received during the public hearing and comment period.⁴⁷

32. On October 18, 2017, the DOC-EERA requested an extension of 14 days to file its comments and recommendations for the Project.⁴⁸

33. On October 19, 2017, the Commission filed a notice of extended comment period setting an October 23, 2017 deadline for filing initial comments and a November 2, 2017 deadline for reply comments.⁴⁹

³⁹ *Id.*

⁴⁰ *Id.*

⁴¹ Palmer’s Creek Affidavit of Publication (Sept. 8, 2017) (eDocket No. 20179-135369-01).

⁴² Notice of Public Hearing & Draft Site Permit Availability (Aug. 25, 2017) (eDocket No. 20178-134993-01).

⁴³ Public Hearing Tr. (Sept. 11, 2017) (eDocket No. 20179-135510-01).

⁴⁴ Comment (Sept. 15, 2017) (eDocket No. 20179-135578-01); Comment by James Olson (Sept. 19, 2017), (eDocket No. 20179-135634-01).

⁴⁵ Comment by MNDNR (Sept. 21, 2017), (eDocket No. 20179-135713-01).

⁴⁶ Palmer’s Creek Reply Comments (Sept. 28, 2017) (eDocket No. 20179-135883-01); Palmer’s Creek Proposed Findings of Fact (Sept. 28, 2017) (eDocket No. 20179-135883-02).

⁴⁷ DOC-EERA Reply Comments (Sept. 29, 2017) (eDocket No. 20179-135958-01).

⁴⁸ Extension Variance Request (Oct. 18, 2017) (eDocket No. 201710-136651-01).

⁴⁹ Notice of Extension/Variance (Oct. 19, 2017) (eDocket No. 201710-136651-01).

34. On October 23, 2017, the DOC-EERA requested an extension to file its comments and recommendations for the Project based on incomplete and insufficient ownership information provided by Applicant.⁵⁰

35. On October 23, 2017, Applicant filed documentation of ownership.⁵¹

36. On October 24, 2017, the Administrative Law Judge issued an Order granting DOC-EERA's requested extension.⁵²

37. On November 1, 2017, the DOC-EERA filed comments and recommendations.⁵³

III. General Description of the Project

38. The Project consists of a 44.6 MW large wind energy conversion system (LWECS) comprised of two 2.3 MW and sixteen 2.5 MW wind turbines. Project-associated facilities include a new collector substation using approximately one acre, an approximately 1000-foot long 115 kilovolt (kV) high-voltage transmission line; a 34.5 kV underground collector line system; a permanent meteorological tower; access roads connecting to each turbine; a fiber optic network; a supervisory control and data acquisition (SCADA) system; a 2,800 square foot operations and maintenance facility building; and a temporary laydown yard.⁵⁴

39. The wind turbines under consideration consist of a nacelle, a hub, blades, a tower, and a foundation.⁵⁵ The wind turbine operates three propeller-like blades mounted to a hub, which forms the rotor.⁵⁶ Wind causes the rotor to turn.⁵⁷ The rotor is connected to a main shaft, which spins a generator to create electricity.⁵⁸ The nacelle houses the gear box, generator, brake to stop the rotor during emergencies, and other electrical and mechanical systems.⁵⁹ The nacelle is mounted on a tower and foundation allowing for maximum use of wind energy in a given area.⁶⁰ The electricity produced from wind turbines is typically transferred to an electrical substation that is connected to an electricity grid for distribution to consumers.⁶¹

40. The turbine models under consideration have an anticipated hub height between 262 and 295 feet (80 and 90 meters) and a rotor diameter of approximately 380

⁵⁰ Second Extension Request (Oct. 23, 2017) (eDocket No. 201710-136716-01).

⁵¹ Documentation of Ownership (Oct. 23, 2017) (eDocket No. 201710-136693-01).

⁵² Order Granting Extension (Oct. 24, 2017) (eDocket No. 201710-136774-01).

⁵³ Doc-EERA Comments and Recommendations (Nov. 1, 2017) (eDocket No. 201710-137063-01).

⁵⁴ Site Permit Application at 3-1, 4-5, 9-2 (Apr. 11, 2017) (eDocket No. 20174-130706-01).

⁵⁵ *Id.* at 4-2.

⁵⁶ *Id.*

⁵⁷ *Id.*

⁵⁸ *Id.*

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ *Id.*

feet (116 meters).⁶² The total height of each turbine will be approximately 485 feet (146 meters) when a blade is in vertical position.⁶³

41. Applicant intends to execute an interconnection agreement with the Southwest Power Pool (SPP) to connect the Project to Western Area Power Administration's (WAPA) Granite Falls Substation.⁶⁴

42. The expected life of the Project is 20 to 40 years with an option to extend leases for an additional 20 years.⁶⁵

43. All proposed turbine models have Supervisory Control and Data Acquisition (SCADA) communication technology to control and monitor the Project.⁶⁶ Each of the turbines will be equipped with physical safety devices to protect employees throughout all phases of construction, operation and decommissioning according to safety standards.⁶⁷

44. Each turbine will have a step-up transformer to raise the voltage to the 34.5 kV collection line system.⁶⁸ The electricity generated by each turbine will run through underground collection lines to the proposed Project Substation.⁶⁹ The electricity will be converted to 115 kV at the new Project Substation and distributed via new proposed 115 kV transmission line to the existing Granite Falls (WAPA) Substation.⁷⁰

45. In addition to the turbines, the Project requires the following facilities:

- a. Underground electric collector lines;
- b. New central collector substation (Palmer's Creek Substation);
- c. Approximately 1000-foot long T-line interconnecting the Granite Falls Substation;
- d. O&M facility;
- e. Access roads connecting to each turbine;
- f. One permanent meteorological tower;
- g. Supervisory control and data acquisition (SCADA) system; and

⁶² *Id.*

⁶³ *Id.*

⁶⁴ *Id.* at 1-1.

⁶⁵ *Id.*

⁶⁶ *Id.* at 4-4.

⁶⁷ *Id.*

⁶⁸ *Id.* at 4-5.

⁶⁹ *Id.*

⁷⁰ *Id.* at 4-5.

- h. Temporary laydown yard.⁷¹

IV. Site Location and Characteristics

37. The Project is located on approximately 6,150 acres of privately-owned land in Granite Falls Township in Chippewa County, Minnesota, east of the Minnesota River.⁷²

38. The Minnesota River is located along the west boundary of the Project area. The Minnesota River is designated by the MNDNR as a State Water Trail from Ortonville, Minnesota, past Granite Falls to its confluence with the Mississippi River at Fort Snelling.⁷³ The segment of the river flowing past the Project area is also designated as a State Wild and Scenic River by the MNDNR and classified as a recreational river.⁷⁴ The river in this area is used as a flyway for many species of birds and waterfowl.⁷⁵

39. The Project is located in a rural, agricultural area.⁷⁶ Project construction is anticipated to include temporary land disturbance of approximately 172 acres for Project construction.⁷⁷ Permanent land disturbance will be approximately 12 acres for turbines and associated facilities.⁷⁸

40. The Project area was chosen for several reasons, including: flat open terrain; low population; good wind resources; close proximity to existing electrical transmission infrastructure; ability to obtain land; and, other factors needed for wind power generation.⁷⁹

V. Wind Resource Considerations

41. Wind farms in Minnesota and other areas in the Midwest are typically located in open areas with high-quality wind resources.⁸⁰ The areas tend to have generally flat topography and primarily have rural and agricultural land use.⁸¹

42. Applicant retained AWS Truepower L.L.C. (AWST) to assess the wind resource for the Project.⁸² AWST validated and analyzed approximately 13 months of data collected at one 60-meter meteorological tower located within the Project area.⁸³

⁷¹ *Id.* at 1-1

⁷² *Id.* at 3-1.

⁷³ *Id.* at 7-3

⁷⁴ *Id.*

⁷⁵ *Id.*

⁷⁶ *Id.* at 3-2.

⁷⁷ *Id.*

⁷⁸ *Id.*

⁷⁹ *Id.* at 3-1.

⁸⁰ *Id.* at 7-25.

⁸¹ *Id.*

⁸² *Id.* at 8-1.

⁸³ *Id.*

43. The range of expected long-term mean annual wind speeds at hub height (80 and 90 meters) at the proposed turbine sites for the Project range from 6.97 to 7.41 m/s.⁸⁴ The prevailing frequency and energy direction sectors are SSE and NNW respectively.⁸⁵

VI. Wind Rights and Easement/Lease Agreements

44. Applicant has secured 98 percent wind and land rights for the Project area through long-term lease agreements with private landowners.⁸⁶ The long-term leases encompass wind turbine and substation locations, access roads, transmission line alignment, ancillary facilities, and wind rights.⁸⁷

45. Wind turbine generators (WTG) 2, 3, and 4 are located closest to the Sween Wildlife Management Area (WMA) near the northern boundary of the Project area.⁸⁸ These WTGs will be visible from the Sween WMA.⁸⁹

46. WTGs 1, 5, and 9 are located closest to the Spartan WMA. These WTGs will be visible from the Spartan WMA.

47. The WTGs placed in both the Sween and Spartan WMAs meet the required Wind Access Buffer setbacks of 3 RD (760-985 ft) on east-west axis and 5 RD (1,280-1640 ft) on north-south axis.⁹⁰

VII. Project Schedule

48. The proposed operational start date for the Project was March 2018.⁹¹ However, the date was based on a construction commencement date of July 2017, which did not occur.⁹²

VIII. Summary of Public and Agency Comments

49. The Commission and DOC-EERA staff held a public information meeting in Granite Falls on June 26, 2017, at the Kilowatt Community Center at 600 Kilowatt Drive in Granite Falls, Minnesota.⁹³ The meeting started with an overview presentation by Commission staff, followed information for the public on how to provide comments, and a brief overview of the Project by the Applicant.⁹⁴ Three people attended the June 26, 2017

⁸⁴ *Id.* at 8-4.

⁸⁵ *Id.*

⁸⁶ *Id.* at 3-2

⁸⁷ *Id.*

⁸⁸ *Id.* at 7-3.

⁸⁹ *Id.*

⁹⁰ *Id.*

⁹¹ *Id.* at 9-4, Table 9-1.

⁹² *Id.*

⁹³ Notice of Public Information Meeting (June 9, 2017) (eDocket No. 20176-132675-01).

⁹⁴ DOC-EERA Comments and Recommendations (July 25, 2017) (eDocket No. 20177-134216-01).

public information meeting.⁹⁵ No verbal public comments or questions were received during the Public Information and Scoping Meeting, and no written public comments were received during the public comment period.⁹⁶

50. Agency comment letters were provided by the MPCA,⁹⁷ MNDOT,⁹⁸ Minnesota Historical Society (MNHS),⁹⁹ and MNDNR¹⁰⁰ regarding the scope of the draft site permit.

51. MPCA filed comments on June 26, 2017.¹⁰¹ MPCA's comments state that a Clean Water Act (CWA) Section 404 permit from the U.S. Army Corps of Engineers (USACE) for project-related wetland impacts may be necessary. MPCA further noted that if a USACE Section 404 Individual Permit is required, then an MPCA CWA Section 401 Water Quality Certification or waiver must also be obtained as part of the permitting process.¹⁰² The MPCA filed no other comments regarding this project.

52. MNDOT filed comments on July 6, 2017. MNDOT noted that the Project is adjacent to the Minnesota River Valley Scenic Byway (US 212), which is designated because the byway possesses one or more of six intrinsic qualities, including scenic, cultural, recreational, natural, historic and archeological.¹⁰³ MNDOT stated that an analysis of the physical and visual impact on the intrinsic qualities should be conducted at each proposed crossing location to determine the route with the least adverse impact on the byway routes and corridors, and mitigation measures should be taken for unavoidable impacts on intrinsic qualities within the scenic byway routes and corridors.¹⁰⁴

53. MNDOT also stated that the Draft Site Permit should include language requiring all relevant permits from road authorities and compliance with MNDOT's Utility Accommodation Policy and similar policies of road authorities.¹⁰⁵ According to MNDOT, the Project is not placed next to a state trunk highway, but if the Project does intersect the trunk highway system, Applicant needs to apply for and obtain permits for the intersection locations.¹⁰⁶ MNDOT noted that the Project should coordinate any construction work with MNDOT, including delivery or storage of structures, materials, and equipment.¹⁰⁷

⁹⁵ *Id.*

⁹⁶ *Id.*

⁹⁷ Comment by MPCA (June 26, 2017) (eDocket No. 20176-133111-01).

⁹⁸ Comment by MNDOT (July 6, 2017) (eDocket No. 20177-133574-01).

⁹⁹ Comment by MNHS (Aug. 2, 2017) (eDocket No. 20178-134453-01).

¹⁰⁰ Comment by MNDNR (July 6, 2017) (eDocket Nos. 20177-133566-01, 20177-133566-02).

¹⁰¹ Comment by MPCA (June 26, 2017) (eDocket No. 20176-131111-01).

¹⁰² *Id.*

¹⁰³ Comment by MNDOT (July 6, 2017) (eDocket No. 20177-133574-01).

¹⁰⁴ *Id.*

¹⁰⁵ *Id.*

¹⁰⁶ *Id.*

¹⁰⁷ *Id.*

54. MNHS filed comments on August 2, 2017. At the time, MNHS had not received the cultural resource survey referenced in the Application and was consulting with the United States Department of Energy, Western Power Administration, regarding the Project and the National Historic Preservation Act.¹⁰⁸

55. MNDNR filed two letters on July 6, 2017. The first is dated March 10, 2016,¹⁰⁹ and addressed to Mike Rutledge of Fagen Engineering, and the second letter is dated July 6, 2017, and addressed to Rich Davis of DOC-EERA.¹¹⁰

56. In the July 6, 2017, letter to Rich Davis, MNDNR noted, in addition to other concerns regarding the Project, that the Project is likely to be high-risk based on, for example, its proximity to the Minnesota River.¹¹¹ The letter also stated that MNDNR would provide a final risk determination after the bat acoustic report is provided from the Applicant to the agencies.¹¹² The Project has high-quality bat habitat, including roosting sites, and high avian use.¹¹³ Potential exists for bats to forage in the area, which would increase the likelihood of higher bat fatalities.¹¹⁴

57. The updated high-risk designation is based on habitat quality, the turbine layout, and poorly-collected bat acoustic data.¹¹⁵ The acoustic data was not complete and the data had large gaps during peak bat activity months.¹¹⁶

58. In addition, the Avian Bat Protection Plan (ABPP) does not include the basic Bat Passes per Detector Night or discussion on the issues related to data collection.¹¹⁷ In its July 6, 2017 letter, MNDNR noted that the Applicant is conducting additional bat acoustic work in 2017, but the data is not expected to be available until after November 15, 2017.¹¹⁸ MNDNR also noted that the Interim Wildlife Report indicated, without justification or discussion, that bat mortality at the Project is estimated to be in the lower end of the spectrum.¹¹⁹

59. According to MNDNR, the project is different from most projects in southern Minnesota due to its proximity to the habitat associated with the Minnesota River Valley.¹²⁰ The potential exists for the Project to have higher bat fatalities when compared to other projects in southern Minnesota.¹²¹ If bat fatalities are high, MNDNR

¹⁰⁸ Comment by MNHS (Aug. 2, 2017) (eDocket No. 20178-134453-01).

¹⁰⁹ Letter from MNDNR to Mike Rutledge (July 6, 2017) (eDocket No. 20177-133566-02).

¹¹⁰ Letter from MNDNR to Rich Davis (July 6, 2017) (eDocket No. 20177-133566-01).

¹¹¹ *Id.*

¹¹² *Id.*

¹¹³ *Id.*

¹¹⁴ *Id.*

¹¹⁵ *Id.*

¹¹⁶ *Id.*

¹¹⁷ *Id.*

¹¹⁸ *Id.*

¹¹⁹ *Id.*

¹²⁰ *Id.*

¹²¹ *Id.*

indicated it may recommend additional operational mitigation such as raising the cut-in speed to reduce bat fatalities.¹²²

60. MNDNR also noted that the Post Construction Avian and Bat Studies proposed by the Applicant are not consistent with the Avian and Bat Survey Protocols for Large Wind Energy Conversion systems in Minnesota.¹²³ For high-risk sites, survey protocols require the search plots to be surveyed four times per week from March 15 to November 15 for two or more field seasons instead of one time per week as indicated in the ABPP.¹²⁴ MNDNR recommended that an experienced independent third party consulting firm be used for fatality monitoring in order to provide reliable unbiased data and reports that meet current standards.¹²⁵ MNDNR further noted that the ABPP does not include an adaptive management section outlining contingencies if higher avian or bat fatalities occur at the site.¹²⁶

61. MNDNR filed additional comments on August 8, 2017, in response to the two reports filed by the Applicant on July 31, 2017¹²⁷ – the 2017 Field Season – Interim Acoustic Bat Report and the Wildlife Monitoring Report. MNDNR noted that both reports contain several inaccuracies and lack key information.¹²⁸ MNDNR reiterated the high-risk level of the Project site and suggested measures to reduce the risk level.¹²⁹

62. *Regarding the 2017 Field Season-Interim Acoustic Bat Report*, MNDNR's concerns include:

- a. Tables 2 through 5 are incorrect because the big brown, little brown, tri-colored (formerly eastern pipistrelle), and northern long-eared bat are species of “a special concern” in Minnesota. The tables list these species as “least concern.”¹³⁰
- b. The report needs to include bat passes per detector night (BPDN). The standard measure used to assess bat activity for all projects. MNDNR previously raised this issue. Bat activity in the Project area is high based on the 15,511 sound files classified as bat detection passes as indicated in the report.¹³¹
- c. BPDN needs to be determined on how many days the detectors are fully functional. The report does not include any information on how many detector days the units were working correctly. The prior year of bat data collection included a significant number of days that had detector failure.

¹²² *Id.*

¹²³ *Id.*

¹²⁴ *Id.*

¹²⁵ *Id.*

¹²⁶ *Id.*

¹²⁷ Comment by MNDNR (Aug. 8, 2017) (eDocket No. 20178-134573-01).

¹²⁸ *Id.*

¹²⁹ *Id.*

¹³⁰ *Id.*

¹³¹ *Id.*

The raw data needs to be provided as an appendix for each day of operation/failure. BPDN is based on the number of days the detectors are fully functioning.¹³²

- d. BPDN is based on first and last call heard across all of the detectors, which ensures that the bat active season has started and provides a more consistent basis for determining BPDN. When BPDN is determined using data collected before or after bats are active, the zero call days bias the BPDN downward and does not provide for comparison across projects.¹³³
- e. MNDNR agrees that turbines near the river present the greatest level of risk because the habitat is more diverse and will have an increased potential for foraging behavior, roosting, etc. However, bat monitor 3, which is located farther from the river, had the highest number of bat passes (3,231). The high number of bat passes could be due to bats using the ditch that has a Reinvest in Minnesota (RIM) easement associated with it as a travel corridor from the Minnesota River habitat to the habitat associated with, and adjacent to, Sween Wildlife Management Area. WTG 1 and WTG 2 are near this area and, due to the higher bat passes, are indicative of a higher risk to bats.¹³⁴
- f. MNDNR found that the report mischaracterized the status of the bat species in the Project area as “representative” and “not a large number of rare and/or sensitive species.” MNDNR notes that the area includes four state-listed species of special concern. The four state-listed species of special concern are cave-dwelling bats that are not only experiencing high cumulative fatalities from commercial wind projects, but are also experiencing impacts from white-nosed syndrome. In addition, the migratory tree bats are experiencing a high number of cumulative fatalities from commercial wind projects in southern Minnesota.¹³⁵
- g. MNDNR stated that it would consider reducing the risk level of the Project only if WTG 5,9,10 and 12 are located farther from the Project site, or are located to another location, or are removed from the Project. One option is to alter the Project boundary and sign new landowners into wind easements to locate the turbines at suitable locations. MNDNR recommends that 2-3 alternate turbine locations be included in the layout to provide an opportunity to avoid or minimize potential impacts to natural resources, and it is standard practice for project developers to include numerous alternate sites to work around issues that arise during project developing and permitting.¹³⁶

¹³² *Id.*

¹³³ *Id.*

¹³⁴ *Id.*

¹³⁵ *Id.*

¹³⁶ *Id.*

- h. MNDNR commented that the ABPP needs to include detailed bat monitoring protocols for high-risk sites. Based on the current layout, the ABPP needs to specify that WTGs 1, 2, 5, 9, 10, and 12 are included in the monitoring.¹³⁷
- i. Regarding the Sensitive Species Observation section of the Wildlife Monitoring Report, MnDNR notes that several of the bird species documented are Species in Greatest Conservation Need, as identified in Minnesota's State Wildlife Action Plan.¹³⁸

63. MNDNR filed additional comments on September 21, 2017.¹³⁹ Given the Project's proximity to the Minnesota River, MNDNR maintains that the Project area is a high-risk site because, among other reasons, it has extensive bat habitat, high BPDN, and high avian use of the river corridor.¹⁴⁰ MNDNR reiterated that Applicant's proposed studies are not consistent with the protocols for high-risk sites.¹⁴¹ MNDNR recommended that the ABPP be revised, reviewed, and approved prior to issuance of the site permit. MNDNR also recommended that turbines WTGs 5, 9, 10, and 12 be located 200 to 300 feet farther away from the river valley.¹⁴²

64. Additional questions and comments about the Project were raised by members of the public at the September 11, 2017 public hearing.¹⁴³

65. Mr. Leon Carlson asked Applicant whether there would be any solar power generation on the Project site and Mike Rutledge of Fagen Engineering told him that there will not be.¹⁴⁴ Mr. Carlson also asked if the transmission lines, including the line from the Project substation to the WAPA substation, will be underground, and Mr. Rutledge replied that the plan is for the lines to be underground.¹⁴⁵

66. Applicant explained the requirements for the siting and depth of the buried collection lines.¹⁴⁶ Mr. Keith Beito followed up with comments about the importance of drainage tiles and Applicant confirmed that it is committed to repairing any tiles damaged because of the Project.¹⁴⁷

67. Mr. Eric Peterson urged that the road repair associated with the Project be done before the fall harvest.¹⁴⁸ Applicant explained that it is moving forward with

¹³⁷ *Id.*

¹³⁸ *Id.*

¹³⁹ Comment by MNDNR (Sept. 21, 2017) (eDocket No. 20179-135713-01).

¹⁴⁰ *Id.*

¹⁴¹ *Id.*

¹⁴² *Id.*

¹⁴³ Public Hearing Tr. (Sept. 11, 2017) (eDocket No. 20179-135510-01).

¹⁴⁴ *Id.* at 20.

¹⁴⁵ *Id.*

¹⁴⁶ *Id.* at 21-22.

¹⁴⁷ *Id.* at 22-24.

¹⁴⁸ *Id.* at 26.

improving approximately 7,200 feet of road in the area whether or not the Project goes forward.¹⁴⁹

68. Mr. Keith Beito requested clarification regarding how tax revenue paid by the Project will be allocated to the township and county.¹⁵⁰ Applicant indicated that it will respond to the question in writing.¹⁵¹

69. Mr. Scott Wilson noted his opposition to the Project because of its industrial size and concerns about whether any environmental studies have been done on the Project.¹⁵²

70. An anonymous written comment was received on September 15, 2017, stating that “this company is known to clear land bare, no trees and cover, no wildlife.”¹⁵³ According to the commenter, everyone in the area of the Project should be granted wind rights for each parcel of land and the distance from turbines for wind rights should be public information.¹⁵⁴

71. Mr. James J. Olson also submitted a written comment in opposition to the Project because of the visual impact of the windmills.¹⁵⁵ He noted that “this area was free of development except the substation which happens to be on my property corner (SW).”¹⁵⁶

72. Mr. Olson also questioned whether the Project has obtained necessary permissions.¹⁵⁷ He specifically questioned where the power line hookup to the existing substation will be located.¹⁵⁸ According to Mr. Olson, yellow dashed boundaries encompass his property on Applicant’s map and he has not granted permission for any structures to be built on his property.¹⁵⁹

73. On September 28, 2017, Applicant filed reply comments to the public written comments, as well as comments on some Draft Site Permit conditions.¹⁶⁰

74. In response to the question raised by Mr. Keith Beito at the public hearing, Applicant replied that “the Project will pay an energy production tax to the local units of government of \$1.20 cents per MWh (\$0.0012 per kWh) of electricity produced. The amount of taxes to be paid is directly related to the amount of energy produced, up to the 44.6 MWs. Under Minn. Stat. § 272.29, subd. 6, this revenue must be distributed by

¹⁴⁹ *Id.* at 27.

¹⁵⁰ *Id.* at 31-35.

¹⁵¹ *Id.* at 36.

¹⁵² *Id.* at 38-51.

¹⁵³ Comment by Anonymous (Sept. 15, 2017) (eDocket No. 20179-135578-01).

¹⁵⁴ *Id.*

¹⁵⁵ Comment by James J. Olson (Sept. 15, 2017) (eDocket 20179-135634-01).

¹⁵⁶ *Id.*

¹⁵⁷ *Id.*

¹⁵⁸ *Id.*

¹⁵⁹ *Id.*

¹⁶⁰ Palmer’s Creek Reply Comments (Sept. 28, 2017) (eDocket 20179-135883-01).

the county auditor or the county treasurer to local taxing jurisdictions in which the wind energy conversion system is located as follows: 80 percent to counties and 20 percent to cities and townships.”¹⁶¹

75. In response to MDNR’s September 21, 2017 comments, Applicant confirmed its agreement with MNDNR that the ABPP must be revised, reviewed, and approved before issuance of the site permit.¹⁶² Applicant indicated that it met with MNDNR on September 13, 2017 to discuss the ongoing bat monitoring program, and proposed revisions to the ABPP and potential mortality mitigation measures.¹⁶³ At the meeting, Applicant submitted a revised interim bat monitoring report for the MNDNR’s review.¹⁶⁴ Applicant, however, noted its disagreement with MNDNR’s recommendation to move turbines 5, 9, 10, and 12 an additional 200 to 300 feet farther away from the Minnesota River valley, noting that it is unable to do so because of constraints (e.g., turbine spacing requirements, setback requirements, etc.).¹⁶⁵ Applicant has committed to working with MNDNR and the DOC-EERA during the micro-siting process.¹⁶⁶ Such micro-siting coordination is anticipated by Section 3.1 of the Draft Permit, which states that “[t]he project boundary serves to provide the Permittee with the flexibility to make minor adjustments to the preliminary layout to accommodate requests by landowners, local government units, federal and state agency requirements, and unforeseen conditions encountered during the detailed engineering and design process.” Further, Applicant noted that additional bat studies being conducted may inform the final turbine layout.¹⁶⁷

76. In response to Mr. Olson’s concern that Project infrastructure might be sited on his land without his agreement through condemnation, Applicant confirmed that no Project infrastructure will be located on his property and the closest turbine will be 1435 feet from Mr. Olson’s property.¹⁶⁸

77. On September 29, 2017, the DOC-EERA provided a written reply to MNDNR and to certain written public comments. The DOC-EERA identified numerous conditions in the draft site permit that pertain to the Project in order to avoid and minimize impacts to livestock, private fencing, wind rights, and the human environment (shadow flicker and visual impacts).¹⁶⁹ Additionally, the DOC-EERA clarified that Applicant does not have the power of eminent domain for the proposed Project.¹⁷⁰ The DOC-EERA indicated that it agrees with MNDNR that the Project is in a potentially high-risk site for impacts to bats and migratory birds.¹⁷¹ The DOC-EERA recommended a final version of the ABPP be submitted two weeks prior to the Commission’s final

¹⁶¹ *Id.*

¹⁶² *Id.*

¹⁶³ *Id.*

¹⁶⁴ *Id.*

¹⁶⁵ *Id.*

¹⁶⁶ *Id.*

¹⁶⁷ *Id.*

¹⁶⁸ *Id.*

¹⁶⁹ *Id.*

¹⁷⁰ *Id.*

¹⁷¹ *Id.*

decision on the issuance of a site permit.¹⁷² The DOC-EERA noted that Applicant will likely not be able to move the turbines as requested by MNDNR due to various siting constraints.¹⁷³ The DOC-EERA recommended that Applicant clearly explain the restrictive siting factors in the revised ABPP, which apply to the turbines MNDNR has requested be moved further from the Minnesota River Valley.¹⁷⁴

78. On October 31, 2017, DOC-EERA filed comments and recommendations regarding the Applicant's proposed findings of fact and conclusions of law. The same filing included some proposed changes to the Draft Site Permit.¹⁷⁵

IX. Site Permit Criteria

79. Wind energy developments are governed by Minn. Stat. ch. 216F (2016) and Minn. R. ch. 7854 (2017). Minn. Stat. § 216F.01, subd. 2, defines a LWECS as any combination of wind energy conversion systems with a combined nameplate capacity of 5 megawatts (5,000 kilowatts) or more.¹⁷⁶ Minn. Stat. § 216F.03 requires that a LWECS be sited in an orderly manner compatible with environmental preservation, sustainable development, and the efficient use of resources.¹⁷⁷

80. In deciding whether to issue an LWECS site permit, the Commission should be guided by, but not limited to, the following considerations set forth in Minn. Stat. § 216E.03, subd. 7(b) (2016):

- a. evaluation of research and investigations relating to the effects on land, water and air resources of large electric power generating plants and high-voltage transmission lines and the effects of water and air discharges and electric and magnetic fields resulting from such facilities on public health and welfare, vegetation, animals, materials and aesthetic values, including baseline studies, predictive modeling, and evaluation of new or improved methods for minimizing adverse impacts of water and air discharges and other matters pertaining to the effects of power plants on the water and air environment;
- b. environmental evaluation of sites . . . proposed for future development and expansion and their relationship to the land, water, air and human resources of the state;
- c. evaluation of the effects of new electric power generation . . . systems related to power plants designed to minimize adverse environmental effects;

¹⁷² *Id.*

¹⁷³ *Id.*

¹⁷⁴ *Id.*

¹⁷⁵ Comments and Recommendations by DOC-EERA (Oct. 31, 2017) (eDocket No. 201710-136966-01).

¹⁷⁶ Minn. Stat. § 216F.01, subds. 2-3.

¹⁷⁷ Minn. Stat. § 216F.03; see also Minn. R. 7854.1000, subp. 3.

- d. evaluation of the potential for beneficial uses of waste energy from proposed large electric power generating plants;
- e. analysis of the direct and indirect economic impact of proposed sites . . . including, but not limited to, productive agricultural land lost or impaired;
- f. evaluation of adverse direct and indirect environmental effects that cannot be avoided should the proposed site . . . be accepted;
- g. evaluation of alternatives to the applicant's proposed site . . . ;
- h. evaluation of governmental survey lines and other natural division lines of agricultural land so as to minimize interference with agricultural operations;
- i. evaluation of irreversible and irretrievable commitments of resources should the proposed site . . . be approved; and
- j. when appropriate, consideration of problems raised by other state and federal agencies and local entities.¹⁷⁸

81. The Commission must also consider whether the applicant has complied with all procedural requirements.¹⁷⁹

82. The Commission's rules require an applicant to provide information regarding any potential impacts of the proposed project, potential mitigation measures, and any adverse effects that cannot be avoided as part of the application process. No separate environmental review is required for a LWECS project.¹⁸⁰

X. Application of the Statutory Siting Criteria to the Project

A. Human Settlement

83. The Project is located in Chippewa County, which has a population of approximately 12,440 people, with an average age of 43 years old and average household size of 2.4 people.¹⁸¹ Approximately 51 percent of the County is employed, and the 2014 median income was \$51,500.¹⁸² The City of Granite Falls, the closest community to the Project, has a population of approximately 2,800.¹⁸³ The City of Montevideo, made up of approximately 5,400 people, is located north of the Project area by approximately six miles.¹⁸⁴ The Project area is comprised of several rural

¹⁷⁸ Minn. Stat. § 216E.03, subd. 7(b).

¹⁷⁹ Minn. R. 7854.1000, subp. 3.

¹⁸⁰ Minn. R. 7854.0500, subp. 7.

¹⁸¹ Site Permit Application at 7-1, 7-2 (Apr. 11, 2017) (eDocket No. 20174-130706-01).

¹⁸² *Id.*

¹⁸³ *Id.*

¹⁸⁴ *Id.*

residences.¹⁸⁵ Many of the property owners rely on agriculture as their primary source of income.¹⁸⁶ The households also find employment in nearby communities.¹⁸⁷

84. The Project will create approximately 100 temporary jobs during construction and approximately five post-construction permanent jobs with anticipated salaries ranging from \$30,000 to \$70,000.¹⁸⁸ Construction and operation may also increase the local tax base.¹⁸⁹

85. Landowners will also be compensated for potential loss of land use from turbine installation through voluntary land leases and wind easements.¹⁹⁰ The land surrounding each turbine will continue to be farmed or grazed.¹⁹¹

86. The Project is not expected to significantly impact local demographics except that it is expected to be beneficial to the local economy.¹⁹²

B. Zoning and Land Use

87. The project area consist of approximately 6,150 acres of privately-owned land chosen for flat open terrain, low population, good wind resources, and close proximity to existing electrical transmission infrastructure.¹⁹³ The Project includes approximately 18 wind turbines, associated access roads, a new collector substation, an Operation and Maintenance (O&M) facility, and associated transmission interconnection facilities. Applicant further proposes to interconnect the Project to the existing Granite Falls Substation within the project area boundary.¹⁹⁴

88. The southern boundary of the Project area is located approximately one mile north of the City of Granite Falls in Chippewa County, Minnesota, in Granite Falls Township, east of the Minnesota River.¹⁹⁵

89. Project construction is anticipated to include temporary land disturbance of approximately 172 acres.¹⁹⁶ Permanent land disturbance will be approximately 12 acres for turbines and associated facilities.¹⁹⁷

90. Most turbines will be sited on agricultural land used for cultivated crops or grazing.¹⁹⁸ Each turbine will have an estimated footprint of approximately 0.65 acres,

¹⁸⁵ *Id.*

¹⁸⁶ *Id.*

¹⁸⁷ *Id.*

¹⁸⁸ *Id.*

¹⁸⁹ *Id.* at 7-2.

¹⁹⁰ *Id.*

¹⁹¹ *Id.*

¹⁹² *Id.*

¹⁹³ *Id.* at 3-1.

¹⁹⁴ *Id.*

¹⁹⁵ *Id.*

¹⁹⁶ *Id.* at 3-2.

¹⁹⁷ *Id.*

¹⁹⁸ *Id.* at 7-2.

or approximately 12 acres total for 18 turbines.¹⁹⁹ Farming will be allowed up to the edge of the access roads and turbine pads.²⁰⁰ Compensation for loss of productive land will be negotiated with individual landowners through lease agreements and wind rights easements.²⁰¹

91. Most of the Project area is zoned as Agricultural Preservation District. The southwest quarter of the northeast quarter in Section 28 is zoned Urban Expansion.²⁰² This site is the location of the Granite Falls electrical substation. The proposed Project Substation will be located across the road, adjacent to the existing substation. This area is within the Minnesota River Management District, which is designated as part of the Wild and Scenic Rivers system.²⁰³ The portion of the Minnesota River from the Lac qui Parle Dam to the Redwood County State-Aid Highway 11 Bridge near Franklin is designated a component of the Minnesota Wild and Scenic Rivers system.²⁰⁴ Regulations in the Wild and Scenic River boundary are implemented by Chippewa County and surrounding affected counties and cities through land use controls, such as zoning.²⁰⁵ The boundaries of the river district may not exceed 320 acres per river mile on both sides of the river.²⁰⁶ Land within the river district have minimum standards for land use, development, and administration.²⁰⁷ This portion of the Project area is classified as Recreational.²⁰⁸ Per Section 8 of the Chippewa County Ordinance, private roads and minor public streets are a permitted use, while power transmission lines are considered a conditional use.²⁰⁹

92. None of the WTGs will be within the Minnesota River Management Zoning.²¹⁰ The proposed substation and O&M building will be located within the Minnesota River Management District, and will require local zoning approvals for construction.²¹¹ Applicant is currently working with the County for the necessary approvals for construction.²¹²

93. Three conservation easements, through the Conservation Reserve Enhancement Program (CREP), are located within the Project area.²¹³ CREP is administered by the U.S. Department of Agriculture (USDA) Farm Service Agency and is an offshoot of the Conservation Reserve Program.²¹⁴ CREP pays landowners an

¹⁹⁹ *Id.*

²⁰⁰ *Id.*

²⁰¹ *Id.*

²⁰² *Id.* at 7-5.

²⁰³ *Id.*

²⁰⁴ *Id.*

²⁰⁵ *Id.*

²⁰⁶ *Id.*

²⁰⁷ *Id.*

²⁰⁸ *Id.*

²⁰⁹ *Id.*

²¹⁰ *Id.* at 7-6.

²¹¹ *Id.*

²¹² *Id.*

²¹³ *Id.* at 7-5

²¹⁴ *Id.*

annual rental rate to transfer environmentally sensitive lands from production into conservation practices.²¹⁵

94. Applicant evaluated the CREP easements based on location relative to the current WTG siting, access road, and gathering line locations.²¹⁶ None of the WTG will directly impact CREP conservation easements.²¹⁷ The gathering line between WTG 1 and WTG 2 is close to a CREP easement, but avoids direct impacts.²¹⁸ A gathering line and access road near WTG 6 is also close to a CREP easement, but avoids direct impacts.²¹⁹

95. There are other easements located within the vicinity of the Project area primarily along the Minnesota River Valley, including RIM Reserve and Permanent Wetland Preserve (PWP) land conservation easements.²²⁰ The closest RIM easement is near the existing substation.²²¹

96. RIM and PWP land conservation easements will not be directly impacted by the Project.²²²

97. Applicant reviewed plans and ordinances for the Project area, including the 2013-2023 Chippewa County Water Plan, Hawk Creek Watershed District Reports, and Chippewa County Zoning Ordinance.²²³ The townships do not have comprehensive plans or zoning ordinances.²²⁴ Planning and zoning for the townships is conducted by Chippewa County.²²⁵ The County has informed Applicant that following the Commission's process will be sufficient to satisfy County regulations for the LWECS.²²⁶

98. The draft site permit provides for setbacks from residences to meet Commission requirements.²²⁷ Section 4.2 of the Draft Site Permit requires Applicant to maintain a setback distance of at least 1,000 feet from all residences.²²⁸ Section 4.1 of the draft site permit requires Applicant to maintain a setback of 5 RDs on the prevailing wind directions from the perimeter of the property where Applicant does not hold the wind rights.²²⁹

²¹⁵ *Id.*

²¹⁶ *Id.* at 7-6.

²¹⁷ *Id.*

²¹⁸ *Id.*

²¹⁹ *Id.*

²²⁰ *Id.*

²²¹ *Id.*

²²² *Id.*

²²³ *Id.* at 7-4.

²²⁴ *Id.*

²²⁵ *Id.*

²²⁶ *Id.* at 4-1.

²²⁷ Order Issuing Draft Site Permit at 4.1, 4.2 (Aug. 23, 2017) (eDocket. No. 20178-134955-01).

²²⁸ *Id.*

²²⁹ *Id.*

C. Noise

99. The sound created by wind turbine generators is dependent upon operating and weather conditions.²³⁰ A noise study was completed for the Project and identified potential sources of noise from the turbines: mechanical noise; aerodynamic noise; modulation of aerodynamic noise; and wind farm noise.²³¹

100. Field assessment monitoring and noise modeling were conducted for the Project as part of the study.²³² For monitoring locations within the proposed Project area, the current L50 sound levels range from 45.1 dBA to 60.4 dBA for both daytime and nighttime.²³³ The existing sound levels met or exceeded daytime noise standards at monitoring location 3, and met or occasionally exceeded nighttime noise standards at monitoring locations 1 and 2.²³⁴

101. The wind turbines are projected to generate an apparent sound level of approximately 107 dB output adjacent to the turbine hub, per the manufacturer's specifications.²³⁵ All conditions were modeled slightly above the worst case scenario at 109 dB.²³⁶ For a single turbine at an 80-meter hub-height, the worst-case resultant noise produced drops below 50 dBA at distances greater than approximately 160 meters (500 feet).²³⁷ WTG 8 was found to be the closest to any of the proposed receptors, and is 1,076 feet away from Receptor R36.²³⁸

102. Two turbine layout scenarios were modeled in the noise study to determine the sound-related impact of the proposed wind farm. The highest predicted change in sound level above 45 dBA is 2.8 dBA. Changes in sound levels less than 3 dBA are barely perceptible to the human ear. Noise study analysis indicates that construction of the Project will not have an impact of 60 dBA or greater on any modeled receptor, nor will the cumulative impact on any receptor exceed 60 dBA when assuming a 35 dBA, 40 dBA, 45 dBA, 50 dBA, or 55 dBA background and sound level. During the daytime, and only with a background sound level already approaching or exceeding the 60 dBA threshold the cumulative sound level (background and wind turbine sound) would exceed 60 dBA. The same is true for the nighttime threshold; only with a background sound level already approaching or exceeding the 50 dBA threshold would the cumulative sound level exceed 50 dBA.²³⁹

²³⁰ Site Permit Application at 7-7 (Apr. 11, 2017) (eDocket No. 20174-130706-01).

²³¹ *Id.*

²³² *Id.* at 7-8.

²³³ *Id.*

²³⁴ *Id.*

²³⁵ *Id.*

²³⁶ *Id.*

²³⁷ *Id.*

²³⁸ *Id.*

²³⁹ *Id.*

103. The Project substation will be located next to the existing substation owned by the Western Area Power Administration and will not result in significant increase in noise.²⁴⁰

104. Applicant will implement Best Management Practices (BMPs) to avoid and minimize impacts. The practices include siting turbines at least 1,000 feet from residences and compliance with state noise standards at all residences. Additional mitigation measures will be addressed during the permitting process, including conducting post-construction noise monitoring, which will be compared to the pre-construction noise modeling results to verify noise compliance at receptors in the Project area.²⁴¹

105. Applicant has committed to implement several BMPs and conservation measures derived from the Upper Great Plains Wind Energy Final Programmatic Environmental Impact Statement (EIS).²⁴² These BMPs include measures for reducing the impact of noise levels where feasible and establishing a process for documenting, investigating, evaluating and resolving Project related noise complaints.²⁴³

106. The draft site permit provides that the wind turbine towers shall be placed such that the permittee shall, at all times, comply with noise standards established by the MPCA as of the date of the permit and at all appropriate locations. Turbine operation shall be modified or turbines shall be removed from service if necessary to comply with the noise standards found in Minn. R. ch. 7030 (2017). The permittee shall be required to comply with the 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.²⁴⁴

107. With the above mitigation measures and continued monitoring, the Project is not expected to have significant noise impacts.

D. Shadow Flicker

108. Shadow flicker from wind turbines occurs when rotating wind turbine blades move between the sun and the observer. Shadow flicker is generally experienced in areas near wind turbines where the distance between the observer and wind turbine blade is short enough that sunlight has not been significantly diffused by the atmosphere. When the blades rotate, this shadow creates a pulsating effect, known as shadow flicker. If the blade's shadow is passing over the window of a building, it will have the effect of increasing and decreasing the light intensity in the room at a low frequency in the range of 0.5 to 1.2 Hz, hence the term "flicker." This flickering effect

²⁴⁰ *Id.*

²⁴¹ *Id.*

²⁴² *Id.* at 11-3 (citing U.S. Department of Energy, Western Area Power Administration, and U.S. Department of the Interior, U.S. Fish and Wildlife Service, *Upper Great Plains Wind Energy Final Programmatic Env'tl. Impact Statement*, <https://www.wapa.gov/regions/UGP/Environment/Pages/ugp-nepa.aspx>).

²⁴³ *Id.* at 7-9.

²⁴⁴ Order Issuing Draft Site Permit at 4.3 (Aug. 23, 2017) (eDocket No. 20178-134955-01).

can also be experienced outdoors, but the effect is typically less intense. The moving shadow of a wind turbine blade on the ground is similar to the effect one experiences when driving on a road when there are shadows cast across the road by an adjacent row of trees.²⁴⁵

109. The flickering effect is most noticeable within approximately 1,000 meters of the turbine, and becomes more and more diffused as distance increases. There are no uniform standards defining what distance from the turbine is regarded as an acceptable limit beyond which the shadow flicker is considered insignificant. The same applies to the number of hours of flicker that is deemed to be acceptable. Thirty is the standard allowed maximum hours of shadow per year in other countries such as Germany.²⁴⁶

110. Shadow flicker is typically greatest in winter months when the angle of the sun is lower and casts longer shadows. The effect is also more pronounced around sunrise and sunset when the sun is near the horizon and shadows are longer. Several factors influence the amount of shadow flicker on the shadow receptors (simulated windows). One consideration is the environment around the shadow receptor. Obstacles such as terrain, trees or buildings between the wind turbine and the receptor can significantly reduce or eliminate shadow flicker effects. Deciduous trees may block some degree of shadow flickering depending on the tree density, species present and time of year, and can lead to a reduction of shadow flicker during the summer when the trees are bearing leaves. However, during the winter months, the trees are without their leaves and their impact on shadow flicker is not as significant. Coniferous trees may provide shading year round. Another consideration is the time of day when shadow flicker occurs. For example, a factory or office building would not be significantly affected if all the shadow flicker impact occurred before or after business hours. In contrast, it may be more acceptable for private homes to experience shadow flickering during working hours when family members may be at work or school.²⁴⁷

111. In 2016, a study was conducted for the Project using WindPRO, a modeling software program, to calculate detailed shadow flicker maps across the entire project area and at specific locations using shadow receptors. A distance of 1,600 meters was used for each iteration of shadow flicker modeling. The shadow maps indicate where shadows would be cast by the Project and for how long. The evaluation accounted for theoretical worst case, meaning turbine operational hours, wind direction, and local sunshine probabilities were not accounted for. The evaluation did not give credit for potential shading from any type of tree or other obstacles that would reduce the number of shadow flickering hours at the structures. The study also evaluated realistic scenarios that factored turbine operational hours, rotor orientation, and sunshine probabilities into the model.²⁴⁸

²⁴⁵ Site Permit Application at 7-11 (Apr. 11, 2017) (eDocket No. 20174-130706-01).

²⁴⁶ *Id.*

²⁴⁷ *Id.*

²⁴⁸ *Id.* at 7-12.

112. The conservative results of the study indicate that of the 49 receptors modeled, 10 modeled zero shadow flicker across all scenarios, 17 modeled 30 or more hours per year theoretical worst case with 80 m HH (hub height), 16 modeled 30 hours or per year theoretical worst case with 80 m + 90 m HH, 18 modeled 30 hours or per year theoretical worst case with 80 m + 94 m HH and one receptor modeled over 30 hours per year under realistic conditions for 80 m, 80 m and 90 m HH, and 80 + 94 m HH.²⁴⁹

113. Section 7.2 of the draft site permit requires that data on shadow flicker for each residence of non-participating and participating landowners within and outside of the Project boundary subject to exposure to turbine shadow flicker be provided at least 14 days prior to the pre-construction meeting, including the results of the study and the assumptions made. Information must include the results of modeling used, assumptions made, and the anticipated levels of exposure from turbine shadow flicker for each residence. Applicant shall provide documentation on its efforts to avoid, minimize, and mitigate shadow flicker exposure.²⁵⁰

114. Applicant has committed to site wind turbines to eliminate shadow flicker effects on nearby residences or other highly-sensitive viewing locations, or reduce them to the lowest achievable level.²⁵¹

115. With the adoption of the mitigation measures discussed above, the Project is not expected to result in significant impacts due to shadow flicker.

E. Visual Impacts

116. A viewshed analysis was completed to evaluate the inter-visibility relationship between the turbines and three observer points. One of the observer points is located in the city center of Granite Falls, and the other two observation points are located on the Upper Sioux Reservation. The analysis indicated that several turbines will be visible from these locations.²⁵²

117. WTGs will be visible from most residences and interrupt horizon views within the project area and in some areas outside of the project boundary.²⁵³

118. Three turbines will be located on the eastern bluff of the Minnesota River Valley and could be visible to individuals on the river depending on their vantage point and tree canopy. The Project will also be visible to those using the Minnesota River Valley National Scenic Byway. Individuals using the Byway alternate routes will be directly adjacent to the proposed substation. In addition, the Project would be located in an area that currently has significant existing HVTL and transmission lines running near and across the Minnesota River Valley. If the Project's additional infrastructure

²⁴⁹ *Id.*

²⁵⁰ Order Issuing Draft Site Permit at 7.2 (Aug. 23, 2017) (eDocket No. 20178-134955-01).

²⁵¹ Site Permit Application at 7-13 (Apr. 11, 2017) (eDocket No. 20174-130706-01).

²⁵² *Id.* at 7-9.

²⁵³ *Id.* at 7-10.

will significantly impact the viewshed of the Byway, the Byway may lose national designation. Its designation status would be evaluated by Minnesota River Valley National Scenic Byway Commission, an interagency committee that reviews compliance with Byway rules on a case-by-case basis.²⁵⁴

119. Minnesota River Valley National Scenic Byway technical staff was contacted regarding potential impacts from the Project.²⁵⁵ No comments from the staff are found in the record.

120. The turbines will be lit to meet the minimum Federal Aviation Administration (FAA) regulations, which require red flashing, strobe, or pulsed obstruction lights at night. No daytime lighting is required.²⁵⁶

121. Turbines will be visible from most residences and will interrupt horizon views within the Project area and in some areas outside the Project area boundary. All residences are a minimum of 1,000 feet from each turbine. The proposed substation will be located next to the existing substation and is not anticipated to result in a significant visual impact.²⁵⁷

122. Section 5.2.27 of the Draft Site Permit limits permitted lights on the towers to only those lights required by the FAA.²⁵⁸

123. Section 6.1 of the Draft Site Permit requires Applicant to coordinate with MNDOT and the New Ulm Convention and Visitors Bureau, or other designated local stakeholder, to identify project-related impacts to the Minnesota River Valley National Scenic Byway. The Site Permit directs Applicant to work to avoid impacts to the Scenic Byway. Mitigation measures for unavoidable impacts will be developed in coordination with MNDOT, the local stakeholder group, and the Department of Commerce.²⁵⁹

124. In summary, the presence of turbines within the viewshed of natural areas may affect the aesthetic quality of the areas, although the degree of impact is largely dependent upon the individual perspectives of observers, this Project may impact the Minnesota River Valley National Scenic Byway designation.

125. Applicant has offered several measures to mitigate the visual impact of the proposed Project. The measures include: using low-profile structures whenever possible for ancillary buildings or other structures; avoiding areas of unique or important recreation, wildlife, or visual resources; taking advantage of existing clearings and disturbed areas as feasible; locations for transmission line and road crossings of other roads, streams, and other linear features within a corridor will be chosen to avoid

²⁵⁴ *Id.* at 7-9, 7-10.

²⁵⁵ *Id.* at 7-10.

²⁵⁶ *Id.*

²⁵⁷ *Id.* at 7-10, 7-11.

²⁵⁸ Order Issuing Draft Site Permit at 5.2.27 (Aug. 23, 2017) (eDocket. No. 20178-134955-01).

²⁵⁹ *Id.* at 6.1.

viewsheds at Key Observation Points (KOP) and other visually-sensitive areas and to minimize disturbance to vegetation and landforms.²⁶⁰

F. Public Services and Infrastructure

126. Public services and infrastructure are located throughout the Project area and include roads, communication systems, airports, and other services provided by the community.²⁶¹

127. Emergency services in the Project area include fire, law enforcement, and ambulance.²⁶² Impacts to emergency services are not anticipated.²⁶³

128. There is a railroad located in the southwest of the Project area on an alignment somewhat parallel to the Minnesota River. The railroad is operated by the Twin Cities and Western Railroad Company. The Burlington Northern Santa Fe railroad runs through the center of the Project area from the south to the northeast.²⁶⁴ Impacts to these adjacent railroads by Project construction are not anticipated.²⁶⁵

129. The Draft Site Permit includes conditions to meet MNDOT's recommendations as submitted in its July 6, 2017 comments.²⁶⁶

1. Roads

130. The Project area is bounded by Chippewa County, Sparta Township, and Granite Falls Township roads. Many of the Project's access roads will lead from the smaller township roads. No County highway projects are planned within the Granite Falls Township between 2016 and 2021.²⁶⁷

131. The highest Annual Average Daily Traffic (AADT) near the Project area, as calculated by MNDOT is 1,000 vehicles per day on CR 5 between CR 15 and Granite Falls.²⁶⁸

132. Impacts to existing local roads are expected to be minimal. It is estimated that vehicle traffic will increase during the construction phase by approximately 100-125 vehicles, both large and small. Traffic for operation and maintenance is not anticipated to significantly impact the AADT near the Project area. Any damage to the roads caused

²⁶⁰ Site Permit Application at 7-12 (Apr. 11, 2017) (eDocket No. 20174-130706-01).

²⁶¹ *Id.* at 7-14.

²⁶² *Id.* at 7-17.

²⁶³ *Id.* at 7-18.

²⁶⁴ *Id.* at 7-17.

²⁶⁵ *Id.* at 7-18.

²⁶⁶ Comments by MNDOT (July 6, 2017) (eDocket No. 20177-133574-01).

²⁶⁷ Site Permit Application at 7-14 (Apr. 11, 2017) (eDocket No. 20174-130706-01).

²⁶⁸ *Id.*

by turbine delivery and project construction will be repaired. Applicant will work with the County and township to obtain necessary permits and minimize and mitigate impacts.²⁶⁹

133. Section 5.2.12 of the Draft Site Permit requires Applicant to notify the Commission and all governing bodies with jurisdiction over the roads that will be used for the Project at least 14 days prior to the pre-construction meeting to determine whether the roads need to be inspected.²⁷⁰

134. Applicant will also work closely with the landowners in the placement of access roads to minimize land-use disruptions during construction and operation of the Project to the extent possible. Designated haul-roads will be reviewed with the local authority having jurisdiction and road use agreements will be executed where required. Road use agreements will be used to identify suitable travel routes, traffic control measures, methods for evaluating, monitoring and restoring roads, and mitigation measures to ensure roads used for oversize/overweight loads are properly identified, monitored, and stabilized.²⁷¹

135. Section 5.2.13 of the Draft Site Permit restricts the construction of access roads to only those roads “necessary to safely and efficiently operate the project and satisfy landowner requests.” Section 5.2.13 contains restrictions on the placement and design of access roads, and requires that all access roads “be constructed in accordance with all necessary township, county or state road requirements and permits.”²⁷²

136. Section 4.4 of the Draft Site Permit requires all turbines and meteorological towers to be set back at least 250 feet from public road right-of-ways.²⁷³

137. Because Applicant must operate the Project in accordance with applicable law and the Draft Site Permit, construction and operation of the Project is not expected to cause significant impacts to roads or traffic.

2. Telecommunications

138. There are no cellular communications or other FCC-registered towers located within the Project area. However, there are several towers registered in the surrounding area. Applicant will be required to locate existing utilities prior to construction, including telephone lines, and will avoid existing utilities during construction.²⁷⁴

139. Microwave beam paths near the project area were mapped and maximum beam widths for maintaining normal operations were calculated. There are 20

²⁶⁹ *Id.* at 7-17, 7-18.

²⁷⁰ Order Issuing Draft Site Permit at 5.2.12 (Aug. 23, 2017) (eDocket. No. 20178-134955-01).

²⁷¹ *Id.*

²⁷² *Id.* at 5.2.13.

²⁷³ *Id.* at 4.4.

²⁷⁴ Site Permit Application at 7-15 (Apr. 11, 2017) (eDocket No. 20174-130706-01).

microwave beam paths within one mile of the Project area. The proposed turbine sites are outside the recommended buffers from crossing microwave beams.²⁷⁵

140. Construction and operation of the Project is not anticipated to impact telephone, cable, or internet service in the Project area. Before construction, Applicant will review the location of FCC-registered towers and existing utilities and will not operate the Project to cause interference with communication systems. Applicant will verify locations of licensed microwave transmitters and receivers prior to construction. Although the Project could impact communication projects which may be installed by third-parties in the future, no known projects are planned at this time. No interference with broadband communications is anticipated.²⁷⁶

141. The existing Granite Falls (WAPA) Substation is located within the Project area. Existing overhead power lines parallel most of the County roads within the Project area. The power lines also cut across agricultural land starting from the substation and routed north, east and west. The overhead power lines include high voltage transmission lines (HVTLs) and other low to medium voltage power lines.²⁷⁷

142. Modification of the existing WAPA substation will be as necessary for Project implementation and interconnection. Overhead power lines will be avoided during construction. Turbine siting will occur far enough away from overhead power lines that impacts will be avoided both during construction and operation of the Project.²⁷⁸

143. The Draft Site Permit requires Applicant provide to the Commission 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 any 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. Applicant is responsible for correcting any disruption to telecommunication services caused by the Project.²⁷⁹

144. Because Applicant must operate the Project in accordance with applicable law and the Draft Site Permit, no significant impacts to telecommunications are expected.

3. Installation of Cables

145. Each wind turbine within the Project area will be interconnected by communication and electrical power collection circuit facilities. The facilities will include

²⁷⁵ *Id.*

²⁷⁶ *Id.* at 7-18.

²⁷⁷ *Id.* at 7-17.

²⁷⁸ *Id.* at 7-18.

²⁷⁹ Order Issuing Draft Site Permit at 5.2.16 (Aug. 23, 2017) (eDocket. No. 20178-134955-01).

underground feeder lines (collector lines) that will collect wind-generated power from each wind turbine and deliver it to the Project substation.²⁸⁰ The system will be used to route the power from each turbine to the Project substation (collector substation) where the electrical voltage will be stepped up from 34.5- kV to 115-kV. The underground collector system will be placed in one trench, approximately 18-24 inches wide, and will connect each of the turbines to the Project substation. The estimated trench length, is approximately 73,920 feet (approximately 14 miles).²⁸¹

146. The underground collector circuits will consist of three power cables contained in an insulated jacket and buried at a depth of approximately four feet that will not interfere with farming operations. Access to the underground lines will be located at each turbine site, and where the cables enter the Project substation. Due to the power carrying limits of underground cabling, there will be two underground collector lines or circuits to collect power from the individual turbines.²⁸²

147. The underground electrical collector and communication systems generally will be installed by plowing or trenching the cables. Using this method, the disturbed soils and topsoil are typically replaced over the buried cable within one day, and the drainage patterns and surface topography are restored to pre-existing conditions. In grassland/rangeland areas, disturbed soils will be re-vegetated with a weed-free native plant seed mix.²⁸³

148. The fiber optic communication cables for the Project will be installed in the same trenches as the underground electrical collector cables and will connect the communication channels from each turbine to the control room in the Project substation.²⁸⁴

149. Installing underground cables in accordance the provisions of the Draft Site Permit²⁸⁵ is not expected to cause any significant impacts to existing infrastructure or agricultural operations.

G. Cultural and Archaeological Resources

150. A records search of the Minnesota State Historic Preservation Office files was conducted for the Project on May 24, 2016, to identify known archaeological sites, historic period structures, previous archeological surveys, and other cultural resources data within the area of potential effects for the Project.²⁸⁶

²⁸⁰ Site Permit Application at 4-5 (Apr. 11, 2017) (eDocket No. 20174-130706-01).

²⁸¹ *Id.*

²⁸² *Id.*

²⁸³ *Id.*

²⁸⁴ *Id.*

²⁸⁵ Order Issuing Draft Site Permit at 5.3 (Aug. 23, 2017) (eDocket. No. 20178-134955-01).

²⁸⁶ Site Permit Application at 7-47 (Apr. 11, 2017) (eDocket No. 20174-130706-01).

151. A cultural resources study was conducted beginning in late 2016, with a preliminary draft completed in March 2017.²⁸⁷ A revised cultural resources study was filed May 11, 2017.²⁸⁸

152. The literature search revealed 12 archaeological sites and 90 historical/architectural sites within a one-mile radius of the area of potential effect (APE), which is defined as the combined construction area of the Project components. Of these, one archaeological site, one site lead, and no historical/architectural sites were located within the final APE. During the State I field inventory (November 14-17, 2016), archaeologists identified two sites. In addition, three previously-recorded mound sites and an unidentifiable site lead were located within the APE.²⁸⁹

153. During the Stage II field inventory (February 15-16, 2017), one site was identified. One previously-recorded site and one site lead were within the APE. As a result of the Stage II pedestrian inventory, one new historical and architectural site was recorded. The site has been recommended ineligible to the National Register of Historic Places (NRHP). A light scatter of historic cultural material and a piece of workable lithic raw material were found but were not recorded as sites, following State Historic Preservation Office site form instructions.²⁹⁰

154. The final Project design avoids all known eligible or unevaluated sites in the Project area, but shovel tests need to be conducted in high-probability areas, such as uplands overlooking streams. In addition, one turnout was submerged in water from melting snow and could not be surveyed.²⁹¹

155. Due to the presence of unevaluated mound sites in the Stage I APE, the project design was updated to avoid these sites, and additional fieldwork was conducted. An additional site was found in the Stage II APE and fieldwork. This site was recommended as ineligible for the NRHP, and no avoidance is required in addition to the Phase I inventory.²⁹²

156. During Project construction and operation activities, Applicant has committed to physically avoid NRHP-eligible properties and unevaluated properties, which are treated as eligible for purposes of the Project.²⁹³

157. If cultural resources are found during construction, all work will cease at that location and notifications and protocols will be followed. In addition, the Draft Site Permit requires that, prior to construction, workers shall be trained about the need to avoid cultural properties, how to identify cultural properties, and procedures to follow if

²⁸⁷ *Id.* at 7-48, App. K.

²⁸⁸ Revised App. K (May 11, 2017) (eDocket No. 20175-131774-01).

²⁸⁹ Site Permit Application at 7-47 (Apr. 11, 2017) (eDocket No. 20174-130706-01).

²⁹⁰ *Id.* at 7-48.

²⁹¹ *Id.* at 7-48, 7-49.

²⁹² *Id.* at 7-49.

²⁹³ *Id.*

they find undocumented cultural properties.²⁹⁴ Accordingly, the Project is not anticipated to adversely affect historic resources.²⁹⁵

H. Recreational Resources

158. Recreation and tourism near the Project consists of public lands, the Minnesota River, tourist attractions, and cultural centers. The Prairie's Edge Casino and Resort, Fagen Fighters WWII Museum, Yellow Medicine County Museum and Historical Society, and the Upper Sioux Agency State Park are located south of Granite Falls.²⁹⁶

159. The Spartan WMA is located on the southwestern border of the Project, about one-quarter mile away from the nearest turbine. The Sween WMA is located outside the northern border of the Project, about one-half mile northeast of the nearest turbine. The Minnesota River is located along the western boundary of the Project. The segment of the river flowing past the Project area is designated as a State Wild and Scenic River by MNDNR and is classified as a recreational river. The State Wild and Scenic River designation requires special regulations that are implemented through County zoning ordinances. Both WMAs are known for deer, small game, forest upland birds, pheasants, and waterfowl. The Spartan WMA is also known for turkey.²⁹⁷

160. Three turbines will be visible from the Sween WMA, and three turbines will be visible from the Spartan WMA. The turbines meet the required Wind Access Buffer setbacks of 3 RD (760-985 feet) on the east-west axis and 5 RD (1,280-1,640 feet) on the north-south axis.²⁹⁸

161. Because the Project will be constructed on agricultural land outside the WMAs, it will not degrade wildlife habitat in those areas or along the river corridor.²⁹⁹ Potential impacts to bird populations are addressed in section S (Wildlife Resources) and T (Rare and Unique Natural Resources) below.

162. The visibility of the turbines may affect visitors' experience at the WMAs and within the Minnesota River corridor, but will not directly impact the areas or wildlife within the areas. In general, the Project is not anticipated to cause detrimental effects to recreation resources, such as bird watching, wildlife viewing, fishing, and hunting.³⁰⁰

163. While the Project may cause some visual impacts in certain recreational areas, the construction and operation of the Project is not expected to have an adverse effect on existing recreational opportunities.³⁰¹

²⁹⁴ Order Issuing Draft Site Permit at 5.2.15 (Aug. 23, 2017) (eDocket No. 20178-134955-01).

²⁹⁵ Site Permit Application at 7-49 (Apr. 11, 2017) (eDocket No. 20174-130706-01).

²⁹⁶ *Id.* at 7-3.

²⁹⁷ *Id.*

²⁹⁸ *Id.*

²⁹⁹ *Id.*

³⁰⁰ *Id.*

³⁰¹ *Id.*

I. Public Health and Safety

1. EMFs and Stray Voltage

164. Electromagnetic fields (EMF) are created by electrically-charged particles associated with electric conductors with an electrical current flow. Electric conductors related to the Project include transmission lines, power collection/distribution lines (feeder lines), substation transformers, inverters, and other related electrical components.³⁰²

165. Stray voltage is a natural phenomenon that is the result of low levels of electrical current flowing between two points that are not directly connected. Electrical systems, including farm systems and utility distribution systems, must be adequately grounded to ensure continuous safety and reliability, and to minimize this current flow. Potential impacts from stray voltage can result from a person or animal coming into contact with neutral-to-earth voltage. Stray voltage does not cause electrocution and is not related to ground current, EMFs, or earth currents.³⁰³

166. The question of whether exposure to power-frequency (60 Hz) magnetic fields can cause biological responses or even health effects has been the subject of considerable research for the past three decades. The National Institute of Environmental Health Sciences (NIEHS) completed a six-year study in 1999 which found little scientific evidence tying EMF exposures with health risks (NIEHS 1999). An additional white paper completed in 2002 by the Minnesota State Interagency Working Group on EMF Issues agreed with the NIEHS 1999 report results.³⁰⁴

167. Stray voltage in a rural setting can affect farm animals when a small voltage difference exists between two surfaces accessible to the animal. When an animal touches both surfaces, a current will flow through its body. Wind farms are unlikely contributors to stray voltage due to system design standards and electrical connection methods. The WTGs will be connected to a substation transformer and transmission system with no direct connection to the local power distribution system or farm wiring systems.³⁰⁵

168. There is presently no Minnesota statute or rule that pertains to magnetic field exposure. The proposed WTGs will be set back from residences and the proposed Project substation will be located adjacent to the existing WAPA Substation; the Project is not anticipated to significantly add to the presence of EMF exposure in the project area. Based on the NIEHS report and the Minnesota State Interagency Working Group on EMF Issues white paper, the Project is not anticipated to cause health impacts. The Project is also not anticipated to contribute to stray voltage.³⁰⁶

³⁰² *Id.* at 7-21.

³⁰³ *Id.*

³⁰⁴ *Id.*

³⁰⁵ *Id.*

³⁰⁶ *Id.*

2. Aviation

169. The Granite Falls Municipal Airport/Lenzen-Roe-Fagen Memorial Field is located approximately 5.5 miles south of the Project area. The Montevideo-Chippewa County Airport is approximately eight miles northwest of the Project area. Both airports are small, regional airports without commercial service. Due to the height of the WTGs, FAA Form 7460-1 must be completed and submitted when a construction permit is filed or at least 45 days before the start date of Project construction, whichever is earliest.³⁰⁷

170. The Draft Site Permit prohibits Applicant from placing turbines where they could obstruct navigable airspace of public or private airports, and requires compliance with relevant setback regulations and rules from MNDOT, the Department of Aviation, and the FAA. Applicant is required to notify owners of all known airports within six miles of the Project prior to construction.³⁰⁸

171. The FAA requires certain types of lighting consistent with FAA AC 70/7460-1K Obstruction Marking and Lighting. FAA approval is required once the final WTG sites have been determined. Completion of FAA Form 7460-1 is required prior to construction. Applicant will acquire all necessary permits prior to Project construction.³⁰⁹

172. With the above mitigation and notification measures in place, the Project is not expected to have a significant impact on aviation.

3. Safety and Security

173. The Draft Site Plan contains conditions to protect public safety. Applicant is required to prepare an Emergency Response Plan in consultation with local emergency responders and submit the plan to the Commission at least 14 days prior to the pre-construction meeting and a revised plan, if any, at least 14 days prior to the pre-operation meeting.³¹⁰

174. Applicant is required, within 24 hours of discovery of an occurrence, to notify the Commission of any extraordinary event. Extraordinary events include but shall not be limited to: fires, tower collapse, thrown blade, acts of sabotage, collector or feeder line failure, and injured worker or private person. Applicant is required, within 30 days of the occurrence, file a report with the Commission describing the cause of the occurrence and the steps taken to avoid future occurrences.³¹¹

175. Applicant has identified additional safety and security measures it will observe in order to further mitigate safety and security impacts from the Project, including conducting a safety assessment to describe potential safety issues and the means that will be taken to mitigate them, covering issues such as site access,

³⁰⁷ *Id.* at 7-21, 7-22.

³⁰⁸ Order Issuing Draft Site Permit at 4.12 (Aug. 23, 2017) (eDocket No. 20178-134955-01).

³⁰⁹ Site Permit Application at 7-23, 7-24 (Apr. 11, 2017) (eDocket No. 20174-130706-01).

³¹⁰ Order Issuing Draft Site Permit at 10.10 (Aug. 23, 2017) (eDocket No. 20178-134955-01).

³¹¹ *Id.* at 10.11.

construction, safe work practices, security, heavy equipment transportation, traffic management, emergency procedures, and fire control.³¹²

176. The Project is not expected to significantly impact public safety.

J. Pollution and Hazardous Waste

177. The Project has the potential to generate pollution and hazardous waste during construction, operation, and decommissioning. Hazardous materials associated with agricultural use of the land may exist within the Project area.

178. The Draft Site Permit requires Applicant to take precautions to protect against pollution and comply with all applicable laws regarding the generation, storage, transportation, and cleanup of all wastes associated with construction and restoration.³¹³

179. Applicant has plans to identify and implement pollution prevention opportunities including material substitution of less hazardous alternatives, recycling, and waste minimization.³¹⁴

180. Significant impacts from hazardous waste or pollution associated with the Project are not expected.

K. Land-Based Economies

1. Agriculture

181. Land-based economies in the project area consist primarily of agricultural farming, specifically cultivated crops and livestock. According to the U.S. Census Bureau, agriculture, forestry, fishing and hunting, and mining account for approximately nine percent of the jobs within Chippewa County.³¹⁵

182. Most WTGs will be sited in locations which are currently agricultural land used for cultivated crops or grazing. Each WTG will have an estimated footprint of approximately 0.65 acres or approximately 12 acres total for 18 WTGs. Farming will be allowed up to the edge of the access roads and turbine pads.³¹⁶

183. The Draft Site Permit contains a number of provisions protecting agricultural production. Applicant is required to protect and segregate topsoil from subsoil on all lands unless otherwise negotiated with the affected landowner.³¹⁷ Applicant must also minimize soil compaction of all lands during all phases of the

³¹² Site Permit Application at 7-22 (Apr. 11, 2017) (eDocket No. 20174-130706-01).

³¹³ Order Issuing Draft Site Permit at 5.2.23 (Aug. 23, 2017) (eDocket. No. 20178-134955-01).

³¹⁴ Site Permit Application at 7-22 (Apr. 11, 2017) (eDocket No. 20174-130706-01).

³¹⁵ *Id.*

³¹⁶ *Id.*

³¹⁷ Order Issuing Draft Site Permit at 5.2.4 (Aug. 23, 2017) (eDocket. No. 20178-134955-01).

Project's life and confine compaction to as small an area as practicable.³¹⁸ Applicant must replace or repair fences and gates damaged or removed during the life of the Project, and repair or replace damaged drainage tiles, unless otherwise negotiated with the landowner.³¹⁹

184. There are also several BMPs and conservation measures, derived from the Upper Great Plains Wind Energy Final Programmatic EIS, which the Applicant has committed to implement for the Project. The primary Land-Based Economic BMPs include removing all above and near-ground structures, including turbines and ancillary structures, during decommissioning.³²⁰

185. The Project is not expected to significantly impact agricultural production within the Project area.

2. Mining

186. Evidence of mining activity in Chippewa County is not in the record except for a brief reference to a U.S. Census Bureau report that agriculture, forestry, fishing and hunting, and mining account for approximately nine percent of the jobs within the County.³²¹

187. The Draft Site Permit prohibits wind turbines and associated facilities from being located within active sand and gravel operations unless otherwise negotiated with the landowner.³²²

188. No evidence of impacts, or anticipation of potential impacts, to mining resources or operations are contained in the record. Therefore, the Project is unlikely to have an impact on mining activity.

L. Tourism

189. Recreation and tourism near the project area are attracted by natural features, including the Minnesota River. The segment of the river running by the Project area is designated as a State Wild and Scenic River and classified as a natural river. In this area, the Minnesota River flows in a 100- to 150-foot-wide channel through a wide floodplain. Granite outcrops are prevalent south of Montevideo into Granite Falls. Maple, cottonwood, and elm trees along with a variety of other vegetation line the riverbank. The river is also known for abundant wildlife and fishing opportunities. It is also used as a migratory flyway for many species of birds and waterfowl.³²³

³¹⁸ *Id.* at 5.2.5

³¹⁹ *Id.* at 5.2.18, 5.2.19.

³²⁰ Site Permit Application at 7-2, 7-3 (Apr. 11, 2017) (eDocket No. 20174-130706-01).

³²¹ *Id.* at 7-2.

³²² Order Issuing Draft Site Permit at 4.8 (Aug. 23, 2017) (eDocket. No. 20178-134955-01).

³²³ Site Permit Application at 7-3 (Apr. 11, 2017) (eDocket No. 20174-130706-01).

190. WMAs are public lands managed by MNDNR for hunting, wildlife viewing, and general outdoor activities. Recreational areas within the Project area are shown on Figure 3 of the application.³²⁴

191. The Spartan WMA is located on the southwestern border of the Project. WTG-5 will be located approximately one-quarter mile northeast of this WMA, and WTG-9 will be located approximately one-half mile east-southeast from the Spartan WMA.³²⁵

192. The Sween WMA is outside of the northern border of the project area in Sections 5 and 6 of T116N, R39W. The Sween WMA is approximately one-half mile northeast of WTG-2 and approximately one-half mile northwest of WTG-4. Both WMAs are known for deer, small game, forest upland birds, pheasants, and waterfowl.³²⁶

193. WTGs 2, 3, and 4 are located closest to the Sween WMA near the northern boundary of the Project area. These WTGs will be visible from the Sween WMA. WTGs 1, 5, and 9 are located closest to the Spartan WMA. These WTGs will be visible from the Spartan WMA. In both cases, the nearest WTGs from the WMA boundary meet the required Wind Access Buffer setbacks of 3 RD (760-985 feet) on an east-west axis and 5 RD (1,280-1640 feet) on a north-south axis.³²⁷

194. Three tourism-related businesses include the Prairie's Edge Casino and Resort, Fagen Fighters WWII Museum, and Yellow Medicine County Museum and Historical Society. All three businesses are located south of Granite Falls. The Upper Sioux Agency State Park is also located south of Granite Falls.³²⁸

195. The Draft Site Permit requires Applicant to coordinate with MNDOT and designated tourism stakeholders to identify Project related impacts to the recreational attractions and to work to avoid and mitigate potential impacts.³²⁹

196. Applicant has committed to implement primary recreation and tourism BMPs including: avoiding areas of unique or important recreation, wildlife, or visual resources; siting on already altered landscapes; protecting trees when possible; and minimizing the number of new roads.³³⁰

197. The Project's impact on individuals' experiences relative to tourism and especially recreational use of the Minnesota River and surrounding areas depends on subjective perceptions of the wind towers. At least three commenters objected to the

³²⁴ *Id.*

³²⁵ *Id.*

³²⁶ *Id.*

³²⁷ *Id.*

³²⁸ *Id.*

³²⁹ Order Issuing Draft Site Permit at 6.1 (Aug. 23, 2017) (eDocket. No. 20178-134955-01).

³³⁰ Site Permit Application at 7-4 (Apr. 11, 2017) (eDocket No. 20174-130706-01).

anticipated visual impact of the Project.³³¹ However, given that the Project generated few public comments, and only three related to the aesthetics, the Project is not expected to cause significant impacts to local tourism activities.

M. Local Economy

198. The Project is anticipated to be beneficial to the local economy. The Project will create approximately 100 temporary jobs during construction and approximately five permanent jobs. The salary range for these jobs will be between \$30,000 and \$70,000. These jobs could bring additional people into the County and positively contribute to the local economy. Expenditures made by the construction workers could benefit local businesses. Construction and operation of the Project has the potential to increase the local tax base.³³²

N. Topography

199. The Project area is rural with primarily flat agricultural fields and a few rolling hills and valley drainages.³³³ The Minnesota River Valley bluff line runs along the western boundary of the Project area. Soils in the area primarily consist of loams and clay loams with zero to six percent slopes. Most of the soils in the Project area are considered prime farmland or farmland of statewide importance.

200. The underground electrical collector and communication systems generally will be installed by plowing or trenching the cables. Using this method, the disturbed soils and topsoil are typically replaced over the buried cable within one day, and the drainage patterns and surface topography are restored to pre-existing conditions. In grassland/rangeland areas, disturbed soils will be re-vegetated with a weed-free native plant seed mix.³³⁴

201. The Draft Site Permit requires Applicant to restore and reclaim the site's pre-project topography and topsoil quality to the extent feasible. All access roads shall be removed after the Project is decommissioned unless written approval is given by the affected landowner requesting that one or more roads, or portions thereof, be retained.³³⁵

202. With these mitigation measures in place, no significant impact to topographic resources is anticipated.

O. Soils

³³¹ Public Hearing Tr. (Sept. 11, 2017) (eDocket No. 20179-135510-01); Comment by Anonymous (Sept. 15, 2017) (eDocket No. 20179-135578-01); Comment by James J. Olson (Sept. 15, 2017) (eDocket 20179-135634-01).

³³² *Id.* at 7-2.

³³³ *Id.* at 7-9.

³³⁴ *Id.* at 7-26 and 9-2.

³³⁵ Order Issuing Draft Site Permit at 11.2 (Aug. 23, 2017) (eDocket. No. 20178-134955-01).

203. Soils in the area primarily consist of loams and clay loams with zero to six percent slopes. Most of the soils in the project area are considered prime farmland, farmland of statewide importance or prime farmland, if drained.³³⁶

204. Most WTGs will be sited in locations which are currently agricultural land used for cultivated crops or grazing. The wind turbine foundations will typically be spread foundations, which require shallow excavation, generally 8 to 12 feet deep. The base of the foundation will be approximately 60 feet in diameter, and the top of the foundation will be approximately 18 feet in diameter. The excavated area for the turbine foundations will typically be approximately 75 feet by 75 feet (23 meters by 23 meters). During construction, a larger area, approximately 295 feet by 295 feet (90 meters by 90 meters), or two acres, will be used to lay down the rotors and maneuver cranes during turbine assembly. Each WTG will have an estimated permanent footprint of approximately one acre or less (0.65 acre), totaling approximately 12 acres for 18 WTGs. Farming activity will be allowed around the access roads and up to the edge of each WTG. Excavated soils will be placed around the WTG pad radius or next to the foundation hole and used for backfill over the poured concrete foundation. Top soils will be separated from the sub-surface material and spread evenly over the radius once construction is complete.³³⁷

205. The original area to be disturbed for construction of the proposed substation was to be approximately 110 feet by 170 feet.³³⁸ DOC-EERA comments stated that the Applicant has slightly increased the anticipated size of the Project's proposed substation and recommends that the Applicant file documentation regarding the anticipated size of the proposed substation.³³⁹

206. The Draft Site Permit requires Applicant to implement erosion prevention and sediment control practices recommended by the MPCA Construction Stormwater Program. It also requires Applicant to "obtain a National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Construction Stormwater permit from the MPCA that provides for the development of a Stormwater Pollution Prevention Plan (SWPPP) that describes methods to control erosion and runoff."³⁴⁰

207. Initial Project development will include soil removal from areas of permanent disturbance including new access roads and turbine pads. Soil will be salvaged to a depth of as much as 12 inches in order to preserve the desirable physical and chemical properties of the topsoil. The topsoil will be bladed to the side and placed on top of adjacent soils in a manner that will make it available for future reclamation should these facilities ever be removed. A NPDES permit application to discharge storm water from construction activities will be acquired prior to construction. As part of this application, a SWPPP will be developed to minimize soil erosion. This plan will identify BMPs to be employed during construction and operation of the Project to protect topsoil

³³⁶ Site Permit Application at 7-25 (Apr. 11, 2017) (eDocket No. 20174-130706-01).

³³⁷ *Id.*

³³⁸ *Id.* at 4-6.

³³⁹ Comments and Recommendations by DOC-EERA (Oct. 31, 2017)(eDocket No. 201710-136966-01).

³⁴⁰ Order Issuing Draft Site Permit at 5.2.6 (Aug. 23, 2017) (eDocket. No. 20178-134955-01).

and adjacent resources and to minimize soil erosion. Practices may include a combination of several BMPs including silt fence, temporary seeding and mulching, rock construction entrances, etc. BMPs derived from the Upper Great Plains Wind Energy Final Programmatic EIS will also be used for the Project, as appropriate.³⁴¹

208. With the Draft Site Permit requirements and these mitigation measures in place, no significant impacts to soil resources are anticipated.

P. Geologic and Groundwater Resources

209. Groundwater in the Project area is approximately 25 feet below the surface. There are approximately 20 known groundwater wells in the Project area. Turbine construction is unlikely to affect local water supply.³⁴²

210. The Project area is estimated to have a mostly moderate geologic sensitivity of pollution of near-surface groundwater, with an estimate of years to decades for surface contaminants to reach near-surface groundwater.³⁴³

211. Excavations for the turbine foundations and associated facilities will occur at depths of 10-12 feet or less and, therefore, are not anticipated to reach the groundwater. A well will be drilled for domestic use as part of the O&M facility.³⁴⁴

212. No impacts to geologic and groundwater resources are expected from construction and operation of the Project.

Q. Surface Water and Wetland Resources

213. There are wetlands located in and adjacent to the Project area. According to the National Wetland Inventory, there are approximately 210 acres of wetlands found within the Project area.³⁴⁵ Applicant indicated that it will work with appropriate agencies to determine potential impacts to wetlands and subsequent regulatory approvals.³⁴⁶

214. Since the filing of the Application, a wetlands delineation has been completed and was filed on November 1, 2017.³⁴⁷ The report identified the boundaries of 10 wetlands and four waterbodies within the project area.³⁴⁸

215. The Minnesota River is on the west side of the Project area boundary. The river is a designated State Wild and Scenic River, and its shoreline and floodplain areas are managed through special regulations to protect floodplain and other sensitive resources. There are waterbodies and small drainages in several places in or within

³⁴¹ Site Permit Application at 7-25, 7-26 (Apr. 11, 2017) (eDocket No. 20174-130706-01).

³⁴² *Id.* at 7-27.

³⁴³ *Id.*

³⁴⁴ *Id.* at 7-28.

³⁴⁵ *Id.* at 7-30.

³⁴⁶ *Id.*

³⁴⁷ Wetland Determination Report (Nov. 1, 2017) (eDocket No. 201711-137034-01).

³⁴⁸ *Id.* at 4-6.

close proximity to the Project area. Most of these waters are identified on MNDNR's Public Waters Inventory (PWI).³⁴⁹

216. Applicant indicates that construction of turbines will occur primarily in upland areas on high portions of the Project area, which are not typically associated with wetlands and that turbines and the proposed substation are anticipated to avoid direct impacts to wetlands. Applicant also indicates that access roads and gathering lines will be designed to avoid wetland areas where feasible. Temporary impacts associated with staging areas or crane walkways will be minimized. Horizontal boring will be used, where feasible, to avoid impacts to wetlands and watercourses.³⁵⁰

217. The turbines are unlikely to impact MNDNR PWI waterbodies, streams, or ditches. The Project area occurs outside the County Designated Flood Zone and Wild and Scenic River regulatory area. No impacts to floodplain resources are anticipated.³⁵¹

218. The Draft Site Permit prohibits siting any Project facilities in any MNDNR public water lakes and wetlands, except collector or feeder lines may cross or be placed in public waters or public waters wetlands subject to applicable permits under the Minnesota Wetlands Conservation Act.³⁵²

219. The Project is not expected to significantly impact surface water or wetland resources.³⁵³

R. Vegetation

220. Vegetation in the Project area is primarily comprised of cultivated crops. Other cover types include pasture, grassland, and developed open space with some deciduous forest. These cover types are typically associated with rural residences, including windbreaks, lawn, and pasture and grassland.³⁵⁴

221. Dry Hill Prairie (native prairie) is identified on the MNDNR Minnesota Biological Survey (MBS) (2007) map in several narrow areas along the railroad in the southwestern portion of the project area. Dry Hill Prairie is considered to have well-drained soils that formed from glacial till on slopes and hilltops in large river valleys, such as the Minnesota River. Dominant grasses in Dry Hill Prairie typically include little bluestem (*Schizachyrium scoparium*), side-oats grama (*Bouteloua curtipendula*), porcupine grass (*Hesperostipa spartea*), and prairie dropseed (*Sporobolus heterolepis*), with much Indian grass (*Sorghastrum nutans*), big bluestem (*Andropogon gerardii*), and Leiberg's panic grass (*Dichanthelium leibergii*) in dry-mesic areas such as mid-slopes. Common shrubs include leadplant (*Amorpha canescens*), wolfberry (*Symphoricarpos occidentalis*), and prairie rose (*Rosa arkansana*). Common forbs are rough blazing star

³⁴⁹ Site Permit Application at 7-28 (Apr. 11, 2017) (eDocket No. 20174-130706-01).

³⁵⁰ *Id.* at 7-31.

³⁵¹ *Id.* at 7-29.

³⁵² Order Issuing Draft Site Permit at 4.6 (Aug. 23, 2017) (eDocket. No. 20178-134955-01).

³⁵³ Site Permit Application at 7-46 (Apr. 11, 2017) (eDocket No. 20174-130706-01).

³⁵⁴ *Id.* at 7-33.

(*Liatris aspera*), alumroot (*Heuchera richardsonii*) silverleaf scurf pea (*Psoralea argophylla*), heart-leaved alexanders (*Zizia aptera*), prairie milk vetch (*Astragalus adsurgens*), purple prairie clover (purple prairie clover), heath aster (*Symphyotrichum ericoides*), prairie smoke (*Geum triflorum*), and hairy golden aster (*Chrysopsis villosa*). MNDNR has indicated the native prairie areas may contain Missouri milk-vetch (*Astragalus missouriensis* var. *missouriensis*), a state-listed plant species of special concern, and Sullivant's milkweed (*Asclepias sullivantii*), a state-listed threatened plant.³⁵⁵

222. Project siting will occur primarily on agricultural land that has been previously disturbed for cultivated crops and other agricultural practices. MBS, native prairie, and wetland areas will be avoided during siting or horizontal boring will be used to avoid impacts from disturbance.³⁵⁶

223. The Draft Site Permit contains several conditions related to vegetation. It requires Applicant to only disturb the Project area and remove trees to the extent necessary to assure suitable access.³⁵⁷ Applicant must also develop an Invasive Species Prevention Plan and take all reasonable precautions against the spread of noxious weeds during construction, including the selection of appropriate seed for vegetative cover.

224. Applicant has committed to employ horizontal directional drilling (HDD) to the extent necessary to minimize impacts and confirmed that no extensive tree clearing is planned to locate a collector line from WTG-12 to WTG-13 through a forested corridor.³⁵⁸

225. Approximately ten acres of cultivated crop area will be taken out of agricultural production due to permanent Project footprint. During construction, approximately 162 acres of agricultural land (cultivated crops and pasture/hay land) will be temporarily taken out of agricultural production for laydown areas and other construction activities. After construction is complete, disturbed areas will be restored to their condition prior to construction.³⁵⁹

226. Palmer Creek's commitment to implement several BMPs and conservation measures³⁶⁰ and the mitigation measures in the draft permit are reasonably designed to protect against significant impacts to vegetation.

S. Wildlife Resources

227. Wind energy has the potential to affect avian and bat species with direct impacts such as collision and barotrauma (tissue damage due to pressure changes), or

³⁵⁵ *Id.* at 7-46.

³⁵⁶ *Id.*

³⁵⁷ Order Issuing Draft Site Permit at 5.2.8 (Aug. 23, 2017) (eDocket No. 20178-134955-01).

³⁵⁸ Palmer's Creek Reply Comments (July 31, 2017) (eDocket No. 20177-134388-01).

³⁵⁹ Site Permit Application at 7-33, 7-34 (Apr. 11, 2017) (eDocket No. 20174-130706-01).

³⁶⁰ *Id.* at 7-34.

indirect impacts such as habitat loss, avoidance of habitat, and other behavioral changes. Understanding species behavior in relation to a project area helps facilitate proper infrastructure siting and operation, which can be used as a mechanism to avoid and minimize avian and bat impacts. Formal pre-construction and post-construction surveys provide a more thorough understanding of species behavior than incidental observations.³⁶¹

228. The U.S. Fish and Wildlife Service Land-Based Energy Guidelines use a tiered framework for collecting information in increasing detail to evaluate risk and make siting and operational decisions.³⁶² Tier 1 is preliminary site evaluation, Tier 2 is site characterization, Tier 3 consists of field studies to document site wildlife and habitat and predict project impacts, Tier 4 consists of post-construction studies to estimate impacts, and Tier 5 is other post-construction studies and research.³⁶³

229. To assess potential impacts on wildlife at the Project area, Applicant consulted with agency staff, reviewed recent literature, requested natural heritage database records from the MNDNR Minnesota Natural Heritage Information System (NHIS), and examined USFWS data and MNDNR documents for information on Endangered, Threatened, and Special Concern (ETSC) species and data on migratory birds and bats.³⁶⁴

230. Wildlife within the vicinity of the Project area include white-tailed deer, raccoons, skunk, coyotes, beavers, muskrats, and other small mammals.³⁶⁵

231. The Project is adjacent to the Minnesota River and its floodplain. The Minnesota River Valley provides a corridor of habitat for many birds and waterfowl.³⁶⁶ According to the Application, on MNDNR rare species, the Bald Eagle, and one Minnesota-Listed Special Concern Species, the American White Pelican, was observed during field surveys of the Project area.

232. Existing data on bald eagle nest locations was received from MNDNR on July 5, 2016. Two nests are located nearby but outside the Project area.³⁶⁷ Raptors, which include bald eagles, are of special interest because of their propensity to fly at heights within a turbine rotor-sweep area (RSA).³⁶⁸ Raptors and eagles spend much of their time hunting and soaring within elevation ranges that correspond to the wind turbine RSA, making them susceptible to turbine blades. Because raptors and eagles are long-lived species with low reproduction rates, potential impacts from collision-related mortality are of concern. Although specific studies are lacking, adults and

³⁶¹ MNDNR and DOC-EERA, *Avian and Bat Survey Protocols For Large Wind Energy Conversion Systems in Minnesota* (June 2014), <http://files.dnr.state.mn.us/eco/ereview/avian-bat-protocols.pdf>.

³⁶² U.S. Fish and Wildlife Service, *Land-Based Wind Energy Guidelines* at 7 (March 2012), https://www.fws.gov/ecological-services/es-library/pdfs/WEG_final.pdf.

³⁶³ *Id.*

³⁶⁴ Site Permit Application at 7-36 (Apr. 11, 2017) (eDocket No. 20174-130706-01).

³⁶⁵ *Id.* at 7-37.

³⁶⁶ *Id.* at 7-38.

³⁶⁷ *Id.*

³⁶⁸ Wildlife Monitoring Report at 7 (July 31, 2017) (eDocket No. 20177-134391-01).

recently fledged young could be at particular risk of collision with turbines because of their higher use of areas near nest sites. After young raptors and eagles fledge, fledglings often spend significant amounts of time flying and roosting near nest locations until they become capable flyers and hunters. Additionally, construction activities near active nests during the breeding season may potentially result in disturbance or abandonment of nest sites.³⁶⁹

233. On July 2016, Applicant representatives and MNDNR staff met and discussed the proximity of the Project to the Seen and Spartan WMAs. At this meeting, MNDNR encouraged moving several turbines farther away from the areas to avoid potential impacts.³⁷⁰

234. Avian point count (PC) surveys were conducted in summer 2016 through summer 2017 to capture migrating and resident species at the Project site. Survey data was used to evaluate avian use, behavior, and species composition during migration and determine resident avian species. Diurnal fixed-point count surveys were conducted at eight circular plots. Point count locations were selected to capture a diverse range of habitats and locations with the best possible view shed.³⁷¹ The Application's Interim Wildlife report presented the results of the avian point count surveys completed as of February 24, 2017.³⁷²

235. On July 31, 2017, Applicant submitted a Wildlife Monitoring Report³⁷³ and Interim Acoustic Bat Report.³⁷⁴

236. The Application's Wildlife Report, filed on July 31, 2017, states that "Fagen deployed five separate Anabat systems (Anabat® SD-2 ultrasonic detectors) to record bat activity throughout the study area, The first deployment was done with two of the Anabat recorders during the fall of 2015 and continued through October 15, 2016. Three additional Anabat recorders were launched on August 3, 2016."³⁷⁵

237. The Application's Acoustic Bat Monitoring Interim Report states that "staff of Fagen Engineering deployed four separate ANABAT systems and two SM3 full spectrum systems to record bat activity throughout the study area, the first deployment of the six monitors was done late March, 2017. This report captures data gathered from late March, 2017."³⁷⁶

238. The record is unclear regarding the date of deployment of the bat detection systems within the project area because the two reports filed on July 31, 2017,

³⁶⁹ *Id.* at 2.

³⁷⁰ Site Permit Application at 7-36 (Apr. 11, 2017) (eDocket No. 20174-130706-01).

³⁷¹ Wildlife Monitoring Report at 3 (July 31, 2017) (eDocket No. 20177-134391-01).

³⁷² *Id.* at 4.

³⁷³ Wildlife Monitoring Report (July 31, 2017) (eDocket No. 20177-134391-01).

³⁷⁴ 2017 Field Season Interim Acoustic Bat report (July 31, 2017) (eDocket 20177-134389-01).

³⁷⁵ Wildlife Monitoring Report at 6, (July 31, 2017) (eDocket No. 20177-134391-01).

³⁷⁶ 2017 Field Season Interim Acoustic Bat Report at 2 (July 31, 2017) (eDocket 20177-134389-01).

contain contradictory information regarding the dates that bat monitoring systems were deployed.³⁷⁷

239. The Interim Acoustic Bat Report documented a total of six bat species from late March 2017 to late June 2017. The report concluded that the Project would likely impact primarily common and representative bat species, but not a large number of rare and/or sensitive species.³⁷⁸

240. The report stated that the towers near the river present the greatest level of risk as the habitat is more diverse and will have an increased potential for foraging behavior, roosting, etc.³⁷⁹

241. In its comments to the Interim Acoustic Bat Report, MNDNR noted that the “common and representative species” referenced in the report included four state-listed species for special concern, which are cave-dwelling bats that are experiencing high cumulative fatalities from commercial wind projects and impacts from white-nose syndrome.³⁸⁰

242. According to the April 6, 2017 Wildlife Monitoring Report, “Data collected through February 24, 2017 suggest an overall low impact in the project area on the local avian community as compared to other upper Midwest wind farms. The low mean-use rate in the project area is primarily due to few common residents and migratory species. Raptor use was low for each raptor species detected. Although there is potential for turbine-related fatalities of unknown ducks, unknown blackbirds, red-winged blackbirds, American crow, ring-billed gulls, red-tailed hawks, and turkey vultures, fatalities are not expected to have population-level impacts. If avian fatality rates are similar to other wind facilities within the region, it is estimated the Project would result in fatality rates between 0.44 – 11.83 birds/turbine/year (0.49 – 7.17birds/MW/year).”³⁸¹

243. The Wildlife Monitoring Reports concluded that the Project would have an overall low impact on the local avian community as compared to other upper Midwest wind facilities. They also estimated that bat mortality as a result of the Project would be on the lower end of the spectrum, and similar with mortality rates at other wind facilities in the region.³⁸²

³⁷⁷ The Administrative Law Judge notes this seeming discrepancy for the record but gave this discrepancy no weight when reaching the conclusions below.

³⁷⁸ 2017 Field Season Interim Acoustic Bat Report at 2 (July 31, 2017) (eDocket 20177-134389-01).

³⁷⁹ *Id.* at 13.

³⁸⁰ Comment by MNDNR (Aug. 8, 2017) (eDocket No. 20178-134573-01).

³⁸¹ Site Permit Application, App. H (Apr. 11, 2017) (eDocket 20174-130706-10); Wildlife Monitoring Report (July 31, 2017) (eDocket No. 20177-134391-01).

³⁸² Site Permit Application, App. H (Apr. 11, 2017) (eDocket 20174-130706-10); Wildlife Monitoring Report (July 31, 2017) (eDocket No. 20177-134391-01).

244. MNDNR found several inaccuracies and lack of key information in both the 2017 Field Season-Interim Acoustic Bat Report and the Wildlife Monitoring Report filed by Applicant on July 31, 2017.³⁸³

245. In terms of inaccuracies, MNDNR noted that Tables 2 through 5 in the 2017 Field Season-Interim Acoustic Bat Report list the big brown, little brown, tri-colored, and northern long-eared bat as species of “least concern” when in fact they are species of “special concern.”³⁸⁴

246. In terms of lack of key information in the 2017 Field Season-Interim Acoustic Bat Report, MNDNR noted that the report needs to include bat passes per detector night (BPDN). The standard in Minnesota is to include the BPDN in all bat acoustic reports to assess bat activity for all projects. MNDNR also noted that BPDN needs to be determined based on how many days the detectors are fully functional. This information was not included in the report although the prior year of data collection included a significant number of days that had detector failure.³⁸⁵

247. On September 21, 2017, MNDNR stressed the importance of following the Avian and Bat Survey Protocols for Large Wind Energy Conversion Systems in Minnesota. According to MNDNR, the Project’s proposed studies are not consistent with the protocols for high-risk sites. Survey protocols for high-risk sites require that search plots are surveyed four times per week from March 15 to November 15 instead of one time per week as indicated in the ABPP.³⁸⁶

248. MNDNR supports the Draft Site Permit condition requiring the permittee to use a qualified third party to conduct three full years of avian and bat fatality monitoring. MNDNR also proposes that the ABPP include an adaptive management section that outlines contingencies if higher avian or bat fatalities occur at the site.³⁸⁷

249. MNDNR continues to recommend locating turbines WTG-5, WTG-9, WTG-10 and WTG 12 200 to 300 feet farther away from the river valley.³⁸⁸ Applicant k states that it is unable to relocate the four turbines due to constraints such as turbine spacing requirements and setback requirements.³⁸⁹

250. Through the course of these proceedings, MNDNR has recommended that Applicant implement additional measures to protect avian and bat populations. The Project site is high-risk based on the proximity to the expansive habitat associated with the Minnesota River that has high bird and bat use.³⁹⁰

³⁸³ Comment by MNDNR (Aug. 8, 2017) (eDocket No. 20178-134573-01).

³⁸⁴ *Id.*

³⁸⁵ *Id.*

³⁸⁶ Comment by MNDNR (Sept. 21, 2017) (eDocket No. 20179-135713-01).

³⁸⁷ *Id.*

³⁸⁸ *Id.*

³⁸⁹ Palmer’s Creek Reply Comments (Sept. 28, 2017) (eDocket No. 20179-135883-01).

³⁹⁰ Comment by MNDNR (Aug. 8, 2017) (eDocket No. 20178-134573-01).

251. Applicant met with MNDNR personnel on September 13, 2017, to discuss the ongoing bat monitoring program, proposed revisions to the ABPP, and potential mortality mitigation measures. At that meeting, Applicant submitted a revised interim bat monitoring report for the MNDNR's review. Applicant, however, disagrees with MNDNR's recommendation that it move four wind turbines further from the river valley.³⁹¹

252. Applicant has committed to working with MNDNR and the DOC-EERA during the micro-siting process to come to an agreement on the final location of turbines WTG-5, WTG-9, WTG-10, and WTG-12.³⁹²

253. The Draft Site Permit requires Applicant to utilize a qualified third party to conduct three full years of avian and bat fatality monitoring following the commencement of the operational phase of the Project and to coordinate monitoring activities and results directly with MNDNR, USFWS and the Commission.³⁹³

254. The Draft Site Permit requires the turbines for the Project to be equipped with operational software that is capable of allowing for adjustment of turbine cut-in speeds.³⁹⁴

255. Section 7.5.4 of the Draft Site Permit requires that the Permittee shall operate all facility turbines so that all turbines are locked, or feathered, up to the manufacturer's standard cut-in speed, from one-half hour before sunset to one-half hour after sunrise, from April 1 to October 31, of each year of operation through the life of the project.³⁹⁵ Applicant proposes that the end of that provision should state "or until such time as the Permittee, Department of Commerce and MNDNR determine that such action is no longer necessary and notify the Commission of such determination."³⁹⁶ DOC-EERA strongly recommends that the Applicant's suggested modification not be utilized. DOC-EERA states that turbine feathering during the time periods specified in Section 7.5.4 of the Draft Site Permit is intended to minimize impacts to bats that are active within the proposed Project area during Project operations. DOC-EERA notes that the simple act of feathering turbines up to manufacturer cut-in speeds has reduced bat fatalities at one wind energy facility by 72 percent. Additionally, the America Wind Energy Association (AWEA) has identified and supports feathering of turbines up to manufacturer cut-in speeds as a best management practice to minimize wind energy production impacts on bat species.³⁹⁷

256. Due to the Project's proximity to avian and bat habitat associated with the Minnesota River Valley, and considering MNDNR's high-risk designation of the Project, the inaccuracies and lack of information provided in the Applicant's Avian surveys and MNDNR's continuing position that turbines 5, 9, 10 and 12 should be relocated to protect

³⁹¹ Palmer's Creek Reply Comments (Sept. 28, 2017) (eDocket No. 20179-135883-01).

³⁹² *Id.*

³⁹³ Comments and Recommendations by DOC-EERA (Oct.31, 2017) (eDocket No. 201710-136966-01).

³⁹⁴ Order Issuing Draft Site Permit at 7.5.4 (Aug. 23, 2017) (eDocket. No. 20178-134955-01).

³⁹⁵ *Id.*

³⁹⁶ Palmer's Creek Reply Comments (Sept. 28, 2017) (eDocket No. 20179-135883-01).

³⁹⁷ Comments and Recommendations by DOC-EERA (Oct. 31, 2017) (eDocket No. 201710-136966-01).

avian and bat populations. The project will be consistent with environmental preservation, sustainable development, and the efficient use of resources only if turbines 5, 9, 10 and 12 are relocated, removed from the Project, or if MNDNR's assessment and related concerns are otherwise adequately addressed.

T. Rare and Unique Natural Resources

257. Rare and unique natural resources within the vicinity of the Project area include native prairie, floodplain forest, and the Minnesota River valley. A query of the NHIS was completed to determine if there are rare species or other significant features in the Project area. The results of the NHIS query indicated the presence of the following Ecologically Significant Areas: Prairie Core Area (Upper Minnesota River Valley); and MBS sites of moderate biodiversity including Dry Hill Prairie (native prairie) and Silver Maple – (Virginia Creeper) Floodplain Forest (rare wetland). Dry Hill Prairie (native prairie) is identified on the MDNR Minnesota Biological Survey (MBS) (2007) map in several narrow areas along the railroad in the western portion of the Project area. The Silver Maple – (Virginia Creeper) Floodplain Forest (rare wetland) is identified on the MBS as located in the Spartan WMA, which is outside the Project area boundary. The Minnesota River is a significant and unique natural resource in Chippewa County and the rest of the state, and it provides rare and unique habitat to many species of birds, waterfowl, and wildlife.³⁹⁸

258. The NHIS query also identified state-listed bird and wildlife species in the Project vicinity. Although there are no NHIS records for bats near the Project, there were a total of six bat species documented throughout the course of the bat surveys. Three species of concern in the State of Minnesota were observed during the acoustic bat monitoring. The NHIS query also indicates a documented bald eagle nest located just outside the Project area along the Minnesota River. An additional nest was located outside the Project area. NHIS also indicated breeding season observations of two rare grassland birds: the lark sparrow (a state-listed species of concern) and the upland sandpiper (a species in greatest conservation need).³⁹⁹

259. The Draft Site Permit requires Applicant to “conduct desktop and field inventories of existing wildlife management areas, scientific and natural areas, recreation areas, native prairies and forests, wetlands, and any other biologically sensitive areas within the project site and assess the presence of state- or federally-listed or threatened species” in consultation with the MNDNR prior to the pre-construction meeting, and requires the filing of any biological surveys or studies associated with the Project.⁴⁰⁰

260. Applicant has committed to avoiding MBS, native prairie and wetland areas. The Project is not expected to have a significant impact on rare or unique natural resources⁴⁰¹ except as noted above regarding birds and bats. Visual impacts could

³⁹⁸ Site Permit Application at 7-42, 7-43 (Apr. 11, 2017) (eDocket No. 20174-130706-01).

³⁹⁹ *Id.* at 7-43, 7-44.

⁴⁰⁰ Order Issuing Draft Site Permit at 7.1 (Aug. 23, 2017) (eDocket. No. 20178-134955-01).

⁴⁰¹ Site Permit Application at 7-46 (Apr. 11, 2017) (eDocket No. 20174-130706-01).

occur for users of the river, which would be dependent on vantage point and individual perceptions of the Project.

U. Future Development and Expansion

261. The Commission is responsible for the siting of LWECS “in an orderly manner compatible with environmental preservation, sustainable development, and the efficient use of resources.”⁴⁰²

262. The Draft Site Permit requires buffers from the perimeter of the property where Applicant does not hold the wind rights.⁴⁰³

263. There is no evidence in the record that the Project is inconsistent with any future development or expansion plans.

V. Decommissioning, Turbine Abandonment and Restoration

264. Applicant anticipates the life of the Project will be approximately 30 years.⁴⁰⁴

265. Based on the current estimate, the cost of decommissioning the Project is \$7,385,822 with a potential scrap return value of \$445,500.⁴⁰⁵

266. The Draft Site Permit requires Applicant to submit a decommissioning plan to the Commission prior to the pre-operation meeting with updates every five years. The decommissioning plan will describe how Applicant will provide for the resources that are necessary to properly decommission the Project at the appropriate time. This plan must also be submitted to the local unit of government with direct zoning authority over the Project.⁴⁰⁶

267. Upon expiration of the permit or earlier termination of the Project, Applicant must “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” unless otherwise agreed. Applicant must restore and reclaim the site to its pre-project topography and topsoil quality to the extent feasible, and remove all access roads unless a different agreement is reached with the landowner. The site must be restored within 18 months of termination.⁴⁰⁷

268. The Draft Site Permit contains appropriate conditions to ensure proper decommissioning of the Project.

⁴⁰² Minn. Stat. § 216F.03.

⁴⁰³ Order Issuing Draft Site Permit at 4.1 (Aug. 23, 2017) (eDocket. No. 20178-134955-01).

⁴⁰⁴ Site Permit Application at 9-6 (Apr. 11, 2017) (eDocket No. 20174-130706-01).

⁴⁰⁵ *Id.*

⁴⁰⁶ Order Issuing Draft Site Permit at 11.1 (Aug. 23, 2017) (eDocket. No. 20178-134955-01).

⁴⁰⁷ *Id.* at 11.2.

W. Permit Conditions

269. The Draft Site Permit contains numerous conditions and requirements that Applicant must adhere to for the design, preparation, construction, operation, decommissioning, and restoration of the Project and surrounding area.⁴⁰⁸ Many of the conditions are discussed above.

270. On September 28, 2017, Applicant provided suggested changes to the Draft Site Permit.⁴⁰⁹

271. Applicant suggested that Section 5.2.2 of the Draft Site Permit, which pertains to availability of the site manager, should be revised to reflect the fact that the designated site manager may not be available during all business hours for the life of the Project due to sick days, vacation, or other time off (proposed revisions are underlined):

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 the project.

This person, or another Project representative, shall be accessible by telephone or other means during normal business hours for the life of this permit.⁴¹⁰

272. DOC-EERA supports the Applicant's suggested change to Section 5.2.2 of the Draft Site Permit.⁴¹¹

273. Applicant believes Section 7.5.4 of the Draft Site Permit, which pertains to feathering, should be revised to reflect the fact that feathering and related operational limitations should only be required as long as necessary.⁴¹²

274. DOC-EERA does not think that the Applicant's proposed revisions to Section 7.5.4 reflect a reasonable effort to minimize the Project's potential impacts on bats utilizing the area.⁴¹³

275. Applicant believes Section 8.2 of the Draft Site Permit, which requires procurement of a power purchase agreement or other enforceable mechanism for selling electricity, will be satisfied if it executes an interconnection agreement to sell output on a merchant basis into the wholesale markets administered by the Southwest Power Pool or the Midcontinent Independent Operator System, Inc.⁴¹⁴

⁴⁰⁸ Order Issuing Draft Site Permit (Aug. 23, 2017) (eDocket No. 20178-134955-01).

⁴⁰⁹ Applicant Comment Letter (Sept. 28, 2017) (eDocket No. 20179-135883-01).

⁴¹⁰ *Id.*

⁴¹¹ Comments and Recommendations by DOC-EERA (Oct. 31, 2017) (eDocket No. 201710-136966-01).

⁴¹² Applicant Comment Letter (Sept. 28, 2017) (eDocket No. 20179-135883-01).

⁴¹³ Comments and Recommendations by DOC-EERA (Oct. 31, 2017) (201710-136966-01).

⁴¹⁴ Applicant Comment Letter (Sept. 28, 2017) (eDocket No. 20179-135883-01).

276. DOC-EERA agrees with the Applicant's amendment to Section 8.2 of the Draft Site Permit.⁴¹⁵

277. Any of the above Findings of Fact more properly designated as Conclusions of Law are hereby adopted as such.

Based upon these Findings of Fact, the Administrative Law Judge makes the following:

CONCLUSIONS OF LAW

1. The Commission and the Administrative Law Judge have jurisdiction over the site permit applied for by Applicant for the up to 44.6 MW Project pursuant to Minn. Stat. § 216F.04.

2. Palmer's Creek has complied with the procedural requirements of Minn. Stat. ch. 216F and Minn. R. ch. 7854.

3. The Commission has complied with all procedural requirements of Minn. Stat. ch. 216F and Minn. R. ch. 7854.

4. A public hearing was conducted in a community near the Project. Proper notice of the public hearing was provided, and the public was given the opportunity to speak at the hearing and submit written comments.

5. The Commission has the authority under Minn. Stat. § 216F.04 to place conditions in a LWECS site permit.

6. It is reasonable and appropriate to amend the Draft Site Permit to include the changes agreed to between Applicant and DOC-EERA regarding conditions 5.2.2 (project representative conditions) and 8.2 (power purchase agreement).

7. The Draft Site Permit contains a number of important mitigation measures and other reasonable conditions.

8. The Project, with the Draft Site Permit conditions revised as set forth above and the inclusion in operational phase fatality monitoring, relocation or removal of turbines WTG-5, WTG-9, WTG-10 and WTG 12, satisfies the site permit criteria for a LWECS contained in Minn. Stat. § 216F.03 and meets all other applicable legal requirements.

9. The Project, with the permit conditions discussed above and the inclusion in operational phase fatality monitoring, relocation or removal of turbines WTG-5, WTG-9, WTG-10 and WTG 12, is compatible with environmental preservation, sustainable development, and the efficient use of resources.

⁴¹⁵ Comments and Recommendations by DOC-EERA (Oct.3 1, 2017) (eDocket No. 201710-136966-01).

10. The Project, with the permit conditions discussed above and the inclusion in operational phase fatality monitoring, relocation or removal of turbines WTG-5, WTG-9, WTG-10 and WTG 12, does not present a potential for significant adverse environmental effects pursuant to the Minnesota Environmental Rights Act and the Minnesota Environmental Policy Act.

11. Any of the above Conclusions of Law more properly designated as Findings of Fact are hereby adopted as such.