

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

TABLE OF CONTENTS

In the Matter of the Application of Big Bend Wind, LLC, for a Certificate of Need for the up to 308 MV Big Bend Wind Project in Cottonwood and Watonwan Counties, Minnesota.	Docket No. IP-7013/CN-19-408
In the Matter of the Application of Big Bend Wind, LLC, for a Large Wind Energy Conversion System Site Permit for the up to 308 MV Big Bend Wind Project in Cottonwood and Watonwan Counties, Minnesota.	Docket No. IP-7013/WS-19-619
In the Matter of the Application of Big Bend Wind, LLC for a Route Permit for a 161 kV High Voltage Transmission Line in Cottonwood, Watonwan and Martin Counties, Minnesota.	Docket No. IP-7013/TL-19-621
In the Matter of the Application of Red Rock Solar, LLC, for a Certificate of Need for the up to 60 MW Red Rock Solar Project in Cottonwood County, Minnesota.	Docket No. IP-7014/CN-19-486
In the Matter of the Application of Red Rock Solar, LLC, for a Site Permit for the up to 60 MW Red Rock Solar Project in Cottonwood County, Minnesota.	Docket No. IP-7014/GS-19-620

STATEMENT OF THE ISSUES	3
SUMMARY OF RECOMMENDATIONS.....	3
FINDINGS OF FACT.....	4
I. Applicants	4
II. Applications and Related Procedural Background	4
III. Wind Project	11
A. Wind Project description	11
B. Site location and characteristics.....	13
C. Wind resource considerations.....	13
D. Wind rights and easement/lease agreements	13
IV. Transmission Line	15
A. Routes evaluated	15
B. Transmission Line structure types and spans	18
C. Transmission Line conductors.....	18
D. Transmission Line route widths.....	18
E. Transmission Line right-of-way	19
F. Step-up Substation.....	19
G. Transmission Line costs.....	19
V. Solar Project	19
A. Solar Project description	19
B. Site location and characteristics.....	21
C. Solar resource considerations.....	22
VI. Projects' Schedule	22
VII. Summary of Public Comments	22
Big Bend Wind Certificate of Need.....	34
I. Certificate of Need Criteria	34
II. Application of Certificate of Need Criteria to the Wind Project	38
A. Probable result of denial (Minn. R. 7849.0120(A))	38
B. A more reasonable and prudent alternative to the facility has not been demonstrated (Minn. R. 7849.0120(B))	42
C. The facility will provide benefits compatible with protecting the natural and socioeconomic environments (Minn. R. 7849.0120(C)).....	46
D. Whether the facility will comply with relevant policies, rules, and regulations (Minn. R. 7849.0120(D)).....	49
III. Other Applicable Statutory Considerations	49
Big Bend Wind Site Permit.....	50
I. Wind Site Permit Criteria	50
II. Application of Wind Site Permit Criteria to the Wind Project	51
A. Demographics.....	52
B. Noise.....	52
C. Visual impacts.....	54
D. Public service and infrastructure	56

E.	Cultural and archaeological resources	58
F.	Recreational resources	61
G.	Public health and safety	62
H.	Hazardous materials	63
I.	Land-based economics	64
J.	Tourism and community benefits	65
K.	Topography	66
L.	Soils	66
M.	Geological and groundwater resources.....	67
N.	Surface waters and floodplain resources	67
O.	Wetlands	68
P.	Vegetation.....	69
Q.	Wildlife	70
R.	Rare and unique natural resources	70
S.	Land Use and zoning	73
T.	Decommissioning and restoration	75
III.	Wind Site Permit Conditions	75
Route Permit.....		77
I.	Route Permit Criteria	77
II.	Application of Route Permit Criteria to the Proposed Transmission Line	80
A.	Effects on human settlement.....	80
B.	Effects on public health and safety.....	84
C.	Effects on land-based economies	85
D.	Effects on archaeological and historic resources	86
E.	Effects on the natural environment.....	87
F.	Rare and unique natural resources.....	91
G.	Application of various design considerations	92
H.	Use and paralleling of existing rights-of-way	92
I.	Electrical system reliability	93
J.	Costs of constructing, operating, and maintaining the facility.....	94
K.	Adverse human and natural environmental effects that cannot be avoided.....	94
L.	Unavoidable, irreversible, and irretrievable commitments of resources	94
M.	Summary of factors analysis	95
III.	Route Permit Conditions	95
Red Rock Solar Certificate of Need.....		96
I.	Certificate of Need Criteria	96
II.	Application of Certificate of Need Criteria to the Solar Project	96
A.	Probable result of denial (Minn. R. 7849.0120(A))	96
B.	A more reasonable and prudent alternative to the facility has not been demonstrated (Minn. R. 7849.0120(B))	100
C.	The facility will provide benefits compatible with protecting the natural and socioeconomic environments	104

D.	Whether the facility will comply with relevant policies, rules, and regulations (Minn. R. 7849.0120(D)).....	106
III.	Other applicable statutory considerations	107
Red Rock Solar Site Permit.....		107
I.	Site Permit Criteria.....	107
II.	Application of Site Permit Criteria to the Solar Project.....	108
A.	Human settlement.....	108
B.	Public health and safety	112
C.	Land-based economies.....	113
D.	Archaeological and historic resources.....	115
E.	Natural environment.....	115
F.	Rare and unique natural resources.....	119
G.	Future development and expansion.....	119
III.	Solar Site Permit Conditions	119
NOTICE.....		120
ENVIRONMENTAL ASSESSMENT		121
CONCLUSIONS OF LAW		122
I.	Conclusions Applicable to All Applications.....	122
II.	Wind Project Certificate of Need	123
III.	Wind Project Site Permit	123
IV.	Solar Project Certification of Need.....	124
V.	Solar Project Site Permit.....	124
NOTICE.....		125

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

**FINDINGS OF FACT, CONCLUSIONS
OF LAW AND
RECOMMENDATIONS**

In the Matter of the Application of Big Bend Wind, LLC, for a Certificate of Need for the up to 308 MV Big Bend Wind Project in Cottonwood and Watonwan Counties, Minnesota.

Docket No. IP-7013/CN-19-408

In the Matter of the Application of Big Bend Wind, LLC, for a Large Wind Energy Conversion System Site Permit for the up to 308 MV Big Bend Wind Project in Cottonwood and Watonwan Counties, Minnesota.

Docket No. IP-7013/WS-19-619

In the Matter of the Application of Big Bend Wind, LLC for a Route Permit for a 161 kV High Voltage Transmission Line in Cottonwood, Watonwan and Martin Counties, Minnesota.

Docket No. IP-7013/TL-19-621

In the Matter of the Application of Red Rock Solar, LLC, for a Certificate of Need for the up to 60 MW Red Rock Solar Project in Cottonwood County, Minnesota.

Docket No. IP-7014/CN-19-486

In the Matter of the Application of Red Rock Solar, LLC, for a Site Permit for the up to 60 MW Red Rock Solar Project in Cottonwood County, Minnesota.

Docket No. IP-7014/GS-19-620

These matters were assigned to Administrative Law Judge James E. LaFave and involve the Certificate of Need (MPUC Docket No. 19-408), Site Permit (MPUC Docket No. 19-620), and Route Permit (MPUC Docket No. 19-621) Applications of Big Bend Wind, LLC (Big Bend Wind) for an up to 300 megawatt (MW) large wind energy conversion system (LWECS) and 161 kilovolt (kV) transmission line (Transmission Line) in Cottonwood, Watonwan, and Martin Counties, Minnesota (the Wind Project).

These matters also involve the Certificate of Need (MPUC Docket No. 19-486), and Site Permit (MPUC Docket No. 19-620) Applications of Red Rock Solar, LLC (Red Rock Solar), and, together with Big Bend Wind (the Applicants), for the Red Rock Solar Project (the Solar Project and, together with the Transmission Line and Wind Project, the Projects), solar energy conversion facility with an up to 60 MW alternating current (AC) nameplate capacity and associated facilities, in Midway Township, Cottonwood County, Minnesota.

The Minnesota Public Utilities Commission (the Commission) referred this matter to the Office of Administrative Hearings (OAH) for assignment of an administrative law judge to conduct public and contested cases hearings. The Administrative Law Judge was charged with preparing a report containing findings of fact, conclusions of law, and a recommendation on the merits of the proposed Projects, applying the certificate of need, siting, and routing criteria established in statute and rule, and providing comments and recommendations, if any, on the conditions and provisions of certificates of need, site permits, and route permit.

The Administrative Law Judge held joint public hearings in-person and by video conference and telephone on the Applications for the Projects on February 1 and 2, 2022, respectively. The evidentiary hearing was held on February 1, 2022. The record remained open for the receipt of written public comments until February 22, 2022. The parties filed final post-hearing submissions on March 18, 2022. The hearing record closed that day.

Christina Brusven and Haley Waller-Pitts, Fredrickson & Byron, represent the Applicants.

Valerie T. Herring, Taft, Stettinius, & Hollister, LLP, represents the Minnesota Historical Society (MNHS).

Richard Dornfeld, Assistant Attorney General, appeared represents the Department of Commerce Energy Environmental Review and Analysis Unit (DOC EERA).

Peter J. Rademacher and Amy Kania, Hogan Adams, PLLC, represent the Lower Sioux Community in the State of Minnesota (Lower Sioux).

Leif Rasmussen, General Counsel, represents the Upper Sioux Community Tribal Historic Preservation Office (Upper Sioux).

Cezar Panait and Charley Bruce represent the Commission staff.

Kevin Pranis represents the Laborers District Council of Minnesota and North Dakota (LIUNA).

STATEMENT OF THE ISSUES

Has Big Bend Wind satisfied the criteria established in Minnesota Statutes, chapter 216B (2020), and Minnesota Rules, chapter 7849 (2021), for a certificate of need for its proposed up-to-300 MW LWECS and 161 kV Transmission Line in Cottonwood, Watonwan, and Martin Counties, Minnesota?

Has Big Bend Wind satisfied the criteria established in Minnesota Statutes, chapter 216F (2020), Minnesota Statutes, section 216E.03, subdivision 7 (2020), and Minnesota Rules, chapter 7854 (2021), for a site permit for its proposed 300 MW LWECS in Cottonwood and Watonwan Counties, Minnesota?

Has Big Bend Wind satisfied the criteria established in Minnesota Statutes, chapter 216E (2020), and Minnesota Rules, chapter 7850 (2021) for a route permit for its proposed 161 kV Transmission Line in Cottonwood, Watonwan, and Martin Counties, Minnesota?

Has Red Rock Solar satisfied the criteria established in Minnesota Statutes, chapter 216B, and Minnesota Rules, chapter 7849 for a certificate of need for its proposed 60 MW solar energy conversion system in Cottonwood County, Minnesota?

Has Red Rock Solar satisfied the criteria established in Minnesota Statutes, chapter 216E, and Minnesota Rules, chapter 7850 for a site permit for its proposed 60 MW solar energy conversion system in Cottonwood County, Minnesota?

SUMMARY OF RECOMMENDATIONS

The Administrative Law Judge concludes that Big Bend Wind has satisfied the applicable legal requirements and, accordingly, recommends that the Commission grant Big Bend Wind a Certificate of Need, Site Permit, and Route Permit, subject to the conditions discussed below.

The Administrative Law Judge further concludes that Red Rock Solar has satisfied the applicable legal requirements and, accordingly, recommends that the Commission grant Red Rock Solar a Certificate of Need and Site Permit, subject to the conditions discussed below.

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

FINDINGS OF FACT

I. Applicants

1. Big Bend Wind will develop, design, permit, and operate the Wind Project and Transmission Line.¹
2. Red Rock Solar will develop, design, permit, and operate the Solar Project.²
3. Applicants are affiliates of Apex Clean Energy Holdings, LLC (Apex).³
4. Apex has developed many operating wind farms and solar facilities throughout the United States and currently has a development portfolio of approximately 20 GW of wind, solar, and storage projects.⁴

II. Applications and Related Procedural Background

5. On June 19, 2019, Applicants submitted a request for exemptions from certain certificate of need application content requirements and the High Voltage Transmission Line (HVTL) Notice Plan found in Minn. R. 7829.2550 (2021).⁵ Following a comment period, on September 24, 2019, the Commission issued an order granting exemptions from certain certificate of need application content requirements requested by the Applicants and taking no action as to Minn. R. 7829.2550.⁶

6. On October 10, 2019, Big Bend Wind submitted the Certificate of Need Notice Plan Approval Request, detailing Big Bend Wind's plan to provide notice to landowners or others with property within or adjacent to the proposed Transmission Line corridor associated with the Wind Project.⁷ On December 4, 2019, the Commission issued an order approving the Notice Plan.⁸ On January 27, 2020, Big Bend Wind filed a letter attesting to its compliance with the requirements of the Notice Plan.⁹

7. On May 15, 2020, Governor Walz signed, and the Executive Council approved, Emergency Executive Order 20-58, which permitted the Commission to hold remote meetings and hearings.¹⁰

¹ Ex. 314 at 1-2 (Big Bend Wind Certificate of Need Application (BB-CN Application)).

² Ex. 317 at 1-2 (Red Rock Solar Certificate of Need Application (RR-CN Application)).

³ Ex. 332 at 1 (Supplemental and Amended Site Permit Application, Figures and Exhibits (BB-Amended Site Application)).

⁴ *Id.* at 1.

⁵ Ex. 300 (Request for Exemption from Certain Application Content Requirements and Rule 7829.2550 HVTL Notice Plan).

⁶ Ex. 201 (Order Approving Exemptions to Certain Filing Requirements).

⁷ Ex. 307 (Certificate of Need Notice Plan Approval Request).

⁸ Ex. 218 (Order).

⁹ Ex. 310 (Compliance Filing - Notice Plan).

¹⁰ Emergency Executive Order 20-58, available at https://mn.gov/governor/assets/EO%2020-58%20Final_tcm1055-434649.pdf.

8. On August 27, 2020, Red Rock Solar filed a letter stating its intent to file a site permit application under the alternative permitting process.¹¹

9. On August 27, 2020, Big Bend Wind filed a letter stating its intent to file a route permit application under the alternative permitting process.¹²

10. On November 9, 2020, Big Bend Wind filed with the Commission a Certificate of Need Application (the Wind CN Application) (Docket No. IP-7013/CN-19-408), Site Permit Application (the Wind Site Permit Application) (Docket No. IP-7013/WS-19-619), and Route Permit Application (collectively, the Wind Applications) (Docket No. IP-7013/TL-19-621).¹³

11. On November 9, 2020, Red Rock Solar filed with the Commission a Certificate of Need Application (the Solar CN Application) (Docket No. IP-7014/CN-19-486) and Site Permit Application (the Solar Site Permit Application and, together, the Solar Applications) (together with the Wind Applications, the Applications) (Docket No. IP-7014/GS-19-620) for its proposed solar energy conversion facility with an up to 60 MW AC nameplate capacity, in Midway Township, Cottonwood County, Minnesota.¹⁴

12. On November 23, 2020, the Commission issued a notice soliciting comments concerning application completeness and procedural treatment.¹⁵

13. On December 18, 2020, MNHS filed a request to intervene.¹⁶

14. By December 21, 2020, the Commission received comments on the applications from the following:

- DOC-DER;
- DOC-EERA;
- LIUNA and International Union of Operating Engineers, Local 49 (Local 49);
- MNHS;
- The Minnesota Pollution Control Agency (MPCA);
- The Southwest Regional Development Commission;
- Lower Sioux; and

¹¹ Ex. 311 (Notice of Intent to Submit a Site Permit Application under Alternative Permitting Process).

¹² Ex. 313 (Notice of Intent to Submit a Route Permit Application Under Alternative Permitting Process).

¹³ Ex. 314 (BB-CN Application); Ex. 315 (BB-Site Application); Ex. 316 (Route Permit Application).

¹⁴ Ex. 317 (RR-CN Application); Ex. 318 (RR-Site Application).

¹⁵ Ex. 203 (Notice of Comment Period).

¹⁶ Ex. 503 (MNHS Intervention).

- Several members of the public.

15. By December 24, 2020, the Commission received reply comments from the Applicants and DOC-EERA.¹⁷

16. On December 30, 2020, the Applicants submitted a corrected Notice of Filing of Certificate of Need, Site Permit, and Route Permit Applications for the Wind Project and Certificate of Need and Site Permit Applications for the Solar Project.¹⁸

17. On January 14, 2021, the Applicants submitted updated public versions of their “Phase 1a Literature Review and Natural Heritage Information System Request” as recommended by DOC-EERA.¹⁹

18. On March 11, 2021, the Commission issued an Order accepting the Applications as substantially complete; approving joint public meetings and hearings and combined environmental review on the applications to the extent practical; requesting that DOC-EERA prepare an environmental assessment (EA) in lieu of an environmental report; referring the Big Bend Wind Site Permit Application to the OAH for a contested case hearing limited to the potential impact of the Project on the Jeffers Petroglyphs historic site (Jeffers Site); referring the other applications to OAH for review using the informal review process; and granting certain timing variances.²⁰

19. On March 17, 2021, the Commission issued a Notice of Public Information and Environmental Review Scoping Meeting, scheduling a remote-access meeting for April 1, 2021, and announcing that written comments would be accepted through April 30, 2021.²¹

20. On March 31, 2021, the Lower Sioux filed a Notice of Appearance.²²

21. On April 1, 2021, Upper Sioux filed a request to intervene.²³

22. The remote-access Public Information and Environmental Review Scoping Meeting was held on April 1, 2021.²⁴ The comment period closed on April 30, 2021.²⁵

¹⁷ Ex. 322 (Reply Comments – Notice of Comment Period/Completeness); Ex. 323 (Reply Comments – Notice of Comment Period/Completeness); Ex. 102 (Red Rock Solar Application Reply Comments); Ex. 103 (Big Bend Wind Application Reply Comments).

¹⁸ Ex. 324 (Corrected Compliance Filing – Notice of Filing Applications).

¹⁹ Ex. 325 (Site Permit Application - Appendix F Phase 1a Literature Review and Natural Heritage Information System Request).

²⁰ Ex. 209 (Order Accepting Applications as Complete, Establishing Review Procedures, Granting Variances, and Notice of and Order for Hearing).

²¹ Ex. 210 (Notice of Public Information and Environmental Review Scoping Meeting).

²² Ex. 600 (Notice of Appearance).

²³ Request to Intervene (Apr. 1, 2021) (eDocket No. 20214-172506-01).

²⁴ See Ex. 210 at 1 (Notice of Public Information and Environmental Review Scoping Meeting).

²⁵ See *id.* at 3.

The Lower Sioux and the MNHS filed written comments on the scope of the EA during the comment period.²⁶

23. DOC-EERA submitted an Energy Environmental Review and Analysis Scoping Summary and Recommendation on May 24, 2021.²⁷ DOC-EERA recommended including four alternatives in the EA: a 335 MW solar facility with no wind component; a 335 MW hybrid project with no proposed turbines placed within eight miles of the Jeffers Site; a 335 MW hybrid project with no proposed turbines placed within 10 miles of the Jeffers Site; and a 335 MW hybrid project with no proposed turbines placed within 11 miles of the Jeffers Site.²⁸

24. On May 24, 2021, the Minnesota Department of Transportation (MnDOT) Office of Aeronautics provided comments regarding the impact of a proposed turbine on a private airstrip after the owner reached out to the Department. MnDOT also notified DOC-EERA that all objects constructed more than 500 feet above ground level are considered to be obstructions to the safety of flight and that a MnDOT permit is now required to construct them.²⁹

25. On June 3, 2021, DOC-EERA filed its comments and recommendations on the draft site permit. It offered several proposed technical amendments to the permit and then recommended that the Commission issue a Draft Site Permit.³⁰

26. On June 17, 2021, the Commission met to consider the draft wind site permit and determine the transmission line routes to be analyzed in the EA.³¹

27. On July 1, 2021, the Administrative Law Judge ordered that a prehearing conference be held on July 9, 2021.³²

28. The Commission filed its Order approving a draft wind site permit for the Project on July 22, 2021, and requested that, in addition to the transmission line route alternatives that DOC-EERA had identified, DOC-EERA include in the scope of the EA the route segment alternative described in the public comment filed by Kent Scholl on June 14, 2021.³³

29. On July 27, 2021, the Commission issued a Notice of Commission Planning Meeting for August 10, 2021, for the purpose of touring the Jeffers Site.³⁴

²⁶ Ex. 501 (Comments on Scope of the Environmental Assessment); Ex. 601 (Comments on the Scope of the Environmental Assessments).

²⁷ EA Scoping Summary and Recommendations (May 24, 2021) (eDocket No. 20215-174407-05).

²⁸ *Id.*

²⁹ MnDOT Aeronautics Comments (May 24, 20221) (eDocket No. 20215-174410-04).

³⁰ Comments, Recommendations, and Preliminary Draft Site Permit (June 3, 2021) (eDocket No. 20216-174802-02).

³¹ Ex. 242 (Briefing Papers – June 17, 2021, Agenda).

³² First Prehearing Order (July 1, 2021) (eDocket No. 20217-175769-03).

³³ Order Identifying Additional Route Segment and Issuing Draft Site Permit (July 22, 2021) (eDocket No. 20217-176400-03).

³⁴ Notice of Commission Planning Meeting (July 27, 2021) (eDocket No. 20217-176532-04).

30. On July 27, 2021, Lower Sioux filed a Petition to Intervene.³⁵
31. On July 30, 2021, the LIUNA filed a Petition for Intervention.³⁶
32. On August 13, 2021, the Administrative Law Judge admitted Upper Sioux and Lower Sioux as full parties to the proceeding.³⁷
33. On August 16, 2021, the Administrative Law Judge ordered that a prehearing conference be held on August 19, 2021.³⁸
34. On August 18, 2021, the Administrative Law Judge admitted LIUNA as a full party to the proceeding.³⁹
35. On August 24, 2021, DOC-EERA issued the Environmental Assessment Scoping Decision.⁴⁰
36. On August 24, 2021, the Administrative Law Judge ordered that a prehearing conference be held on September 13, 2021.⁴¹
37. On September 10, 2021, the Commission issued a Notice of Commission Planning Meeting for September 20, 2021, for the purpose of touring the Jeffers Site.⁴²
38. On September 14, 2021, the Applicants filed a settlement agreement between the Applicants, Apex Clean Energy Holdings, LLC, and Intervenors MNHS, Upper Sioux, and Lower Sioux (Settlement Agreement). The Settlement Agreement includes certain compromises and agreement of the parties “as a resolution to all disputed issues.”⁴³
39. On September 17, 2021, the Administrative Law Judge ordered that a prehearing conference be held on October 8, 2021.⁴⁴
40. On September 20, 2021, Big Bend Wind filed its Supplemental and Amended Site Permit Application. The Supplemental and Amended Site Permit Application includes and incorporates the Settlement Agreement.⁴⁵
41. On October 1, 2021, Applicants filed the direct testimony of Dylan Ikkala.⁴⁶

³⁵ Ex. 602 (Petition to Intervene).

³⁶ Petition for Intervention (July 30, 2021) (eDocket No. 20217-176628-10).

³⁷ Order on Petitions to Intervene by Upper Sioux Community Tribal Historic Preservation Office and the Lower Sioux Community in the State of Minnesota (Aug. 13, 2021) (eDocket No. 20218-177118-05).

³⁸ Second Prehearing Order (Aug. 16, 2021) (eDocket No. 20218-177153-04).

³⁹ Order on Petition to Intervene by the Laborers District Council of Minnesota and North Dakota (Aug. 18, 2021) (eDocket No. 20218-177217-02).

⁴⁰ Ex. 104 (Initial Environmental Assessment Scoping Decision).

⁴¹ Third Prehearing Order (Aug. 24, 2021) (eDocket No. 20218-177410-01).

⁴² Notice of Commission Planning Meeting (Sept. 10, 2021) (eDocket No. 20219-177863-05).

⁴³ Ex. 331 (Settlement Agreement).

⁴⁴ Fourth Prehearing Order (Sept. 17, 2021) (eDocket No. 20219-178060-03).

⁴⁵ Ex. 332 (BB-Amended Site Application).

42. On October 11, 2021, the Administrative Law Judge ordered that a prehearing conference be held on October 15, 2021.⁴⁷

43. On October 15, 2021, DOC-EERA issued a Notice of Substantial Changes and Substantial New Information and Comment Period on Re-Evaluation of the Environmental Assessment Scope. The Notice announced that DOC-EERA was seeking additional comments regarding the scope of the EA as a result of the Settlement Agreement and that the comment period would close on November 1, 2021.⁴⁸

44. On November 1, 2021, Applicants submitted comments in response to the Notice of Substantial Changes.⁴⁹

45. On November 5, 2021, DOC-EERA issued a Revised Environmental Assessment Scoping Decision.⁵⁰

46. On November 10, 2021, Lower Sioux filed the direct testimony of Robert L. Larsen.⁵¹

47. On November 10, 2021, MHS filed the direct testimony of Kevin Maijala.⁵²

48. On November 10, 2021, Upper Sioux filed the direct testimony of Adam Savariego.⁵³

49. On November 12, 2021, LIUNA filed the direct testimony of Lucas Franco, Ph.D.⁵⁴

50. On January 14, 2022, the Notice of Environmental Assessment Availability, Public Hearings, and Comment Period was filed. The Notice announced in-person public hearings would take place at the Windom Community Center on February 1, 2022, at 2:00 p.m. and 6:00 p.m. The Notice also announced that a remote-access hearing would take place on February 2, 2022, at 6:00 p.m. Finally, the Notice announced that the written-comment period would run from January 14, 2022, through February 22, 2022, at 4:30 p.m.⁵⁵

⁴⁶ Ex. 334 (Ikkala Direct).

⁴⁷ Fifth Prehearing Order (Oct. 11, 2021) (eDocket No. 202110-178687-04).

⁴⁸ Ex. 105 (Notice of Substantial Changes and Substantial New Information and Comment Period on Re-evaluation of the Environmental Assessment Scope).

⁴⁹ Ex. 336 (Scoping Comments).

⁵⁰ Ex. 106 (Revised Environmental Assessment Scoping Decision).

⁵¹ Ex. 603 (Larsen Direct).

⁵² Ex. 500 (Maijala Direct).

⁵³ Ex. 700 (Savariego Direct).

⁵⁴ Ex. 401 (Franco Direct).

⁵⁵ Ex. 216 (Notice of Environmental Assessment Availability, Public Hearings and Comment Period); Ex. 238 (Notice of Environmental Assessment Availability, Public Hearings, and Comment Period).

51. DOC-EERA filed the Final EA on January 18, 2022.⁵⁶
52. On January 26, 2022, DOC-DER staff filed written comments recommending that the Commission issue a CN for the Wind Project and the Solar Project.⁵⁷
53. On January 31, 2022, Applicants filed the Surrebuttal Testimony of Dylan Ikkala, with schedules.⁵⁸
54. The public hearings were held on February 1 and 2, 2022.⁵⁹
55. At the evidentiary hearing, the Administrative Law Judge received the parties' exhibits into the record.⁶⁰ The parties waived cross examination of witnesses.
56. At the public hearings, Commission staff, DOC-EERA, and the Applicants provided an overview of the Solar and Wind Projects, including the regulatory procedure to date, and the remaining process. Members of the public were provided an opportunity to comment.
57. The Commission accepted written comments on the applications through 4:30 p.m. on February 22, 2022.⁶¹
58. On February 22, 2022, the DOC-EERA filed written comments recommending that the Commission approve the revised draft site permit, discussing consultation with the Minnesota State Historic Preservation Office (SHPO), and noting errata.⁶²
59. On March 18, 2022, Applicants filed their Proposed Findings of Fact and Conclusions of Law, as well as Applicants' Post-Hearing Brief. In Applicants' Post-Hearing Brief, Big Bend Wind provided an update concerning its interconnection request at the Crandall Switching Station. Specifically, Big Bend Wind explained that its prior interconnection request at the Crandall Switching Station had been withdrawn from the Midcontinent Independent System Operator (MISO) queue because of significant upgrade costs and that, after undertaking further analysis, Big Bend Wind intends to re-submit an interconnection request for the Projects, again with a point of interconnection (POI) at the Crandall Switching Station. Applicants anticipate that the Projects will be in-service as early as 2024.⁶³

⁵⁶ Ex. 107 (Environmental Assessment (EA)).

⁵⁷ Ex. 805 (Comments re Environmental Report (Big Bend)).

⁵⁸ Ex. 337 (Ikkala Surrebuttal).

⁵⁹ See Ex. 216 (Notice of Environmental Assessment Availability, Public Hearings and Comment Period); Ex. 238 (Notice of Environmental Assessment Availability, Public Hearings, and Comment Period).

⁶⁰ See Evidentiary Hearing Transcript (Tr.) (Feb. 1, 2022).

⁶¹ See Ex. 216 (Notice of Environmental Assessment Availability, Public Hearings and Comment Period); Ex. 238 (Notice of Environmental Assessment Availability, Public Hearings, and Comment Period).

⁶² DOC-EERA Public Hearing Comments (Feb. 22, 2022) (eDocket No. 20222-183059-01).

⁶³ Applicants' Post-Hearing Brief (Mar. 18, 2022) (eDocket No. 20223-183968-06).

III. Wind Project

A. Wind Project description

60. Big Bend Wind proposes: (a) a LWECS, as defined in Minn. Stat. § 216F.01, subd. 2, with a project boundary of 43,523 acres in Cottonwood and Watonwan Counties, Minnesota (Wind Project Area); and (b) the proposed Transmission Line, which is a 161 kV high-voltage transmission line, as defined by Minn. Stat. § 216E.01, subd. 4, approximately 18 miles in length in Cottonwood, Watonwan, and Martin Counties, Minnesota.⁶⁴

61. The Wind Project would be an up to 300 MW nameplate capacity wind farm and associated facilities, consisting of up to 52 wind turbines.⁶⁵

62. Big Bend Wind proposes to use one of three turbine model types: the Nordex N-163 5.9 MW turbine, the Vestas V162 6.0 MW turbine, and the GE-158 5.8 MW turbine.⁶⁶

63. The three turbines under consideration consist of a nacelle, hub, blades, tower, and foundation. The nacelle houses the generator, gear boxes, controller, generator cabling, hoist, generator cooling, and other associated equipment. An anemometer and weathervane located on the top of the turbine nacelle continuously monitor wind speed and direction. The hub supports the blades and connecting rotor, yaw motors, mechanical braking system and a power supply for emergency braking. The hub also contains an emergency power supply to allow the mechanical brakes to work if electric power from the grid is lost. Each turbine has three blades composed of carbon fiber, fiberglass, and internal supports to provide a lightweight but strong component. The tip of each blade is equipped with a lightning receptor to safely conduct lightning strikes to ground.⁶⁷ The turbine models under consideration have active yaw and pitch regulation and asynchronous generations and are capable of operating with adjusted cut-in speed and full blade feathering.⁶⁸

64. The foundation and the tower support the hub, blades, and nacelle. Tower foundations are anticipated to be a spread-foundation design. The tubular towers will be painted with a non-glare white or off-white. The tower houses electrical, control, and communication cables and a control system located at the base of the tower.⁶⁹

65. All proposed turbine models have Supervisory Control and Data Acquisition (SCADA) communication technology to control and monitor the Project.⁷⁰

⁶⁴ Ex. 332 at 12, 21 (BB-Amended Site Application).

⁶⁵ *Id.* at 13.

⁶⁶ *Id.* at 16, 19.

⁶⁷ *Id.* at 18-19.

⁶⁸ *Id.* at 20-21.

⁶⁹ *Id.* at 18.

⁷⁰ *Id.* at 20.

The SCADA communications systems permit automatic, independent operation and remote supervision, allowing the simultaneous control of the wind turbines.⁷¹

66. In addition to the wind turbines and associated equipment, the Wind Project will include the following permanent and temporary associated facilities:

- (a) Gravel access road and improvements to existing roads;
- (b) Underground and aboveground electric collection and communication lines;
- (c) Operation and maintenance (O&M) facility;
- (d) One substation;
- (e) One permanent meteorological tower;
- (f) Sonic Detection and Ranging (SoDAR) or Light Detection and Ranging (LiDAR) unit;
- (g) One 15.3-acre laydown area;
- (h) Up to four Aircraft Detection Lighting Systems (ADLS) radars; and
- (i) One temporary batch plant area, if needed, for construction of the Project.⁷²

67. The Wind Project will include a wind buffer of five rotor diameters (RD) in the prevailing wind direction and three RDs in the non-prevailing wind directions; at a noise setback meeting the MPCA's Noise Standards found in Minn. R. ch. 7030 (2020); and a minimum setback of 1,200 feet from residences and 1.1 times total height from public roads and trails.⁷³

68. The Wind Project includes one collector substation that will require approximately five acres of land within the Wind Project Area.⁷⁴

69. For the Transmission Line, Big Bend Wind seeks to construct approximately 18 miles of a new, single circuit, 161 kV transmission line needed to interconnect the proposed Wind Project to a step-up substation before connection to the existing Xcel Energy Crandall 345 kV switching station in Martin County, Minnesota.⁷⁵

⁷¹ *Id.*

⁷² *Id.* at 13.

⁷³ *Id.* at 14-15.

⁷⁴ *Id.* at 130.

⁷⁵ *Id.* at 21.

70. The Transmission Line will originate at the proposed collector substation.⁷⁶

B. Site location and characteristics

71. The Wind Project will be located in Delton, Selma, Carson, and Midway Townships in Cottonwood County and Butterfield Township in Watonwan County.⁷⁷

72. The Wind Project will be located in a rural area. The population densities within five miles of the Wind Project Area are between 18.3 and 42.4 people per square mile.⁷⁸

73. The Wind Project Area consists of approximately 92.5 percent cropland, 3.6 percent developed, 1.0 percent hay/pasture, 0.9 percent emergent herbaceous wetlands, 0.8 percent open water, 0.6 percent herbaceous, 0.5 percent deciduous/mixed forest, 0.1 percent barren land, and less than 0.1 percent woody wetlands and shrub/scrub.⁷⁹

C. Wind resource considerations

74. Big Bend Wind has conducted site wind characterization studies and analysis and had ten temporary meteorological towers monitoring weather data in the Wind Project Area.⁸⁰

75. The prevailing wind direction in the Wind Project Area is from the northwest.⁸¹

76. Big Bend Wind estimates the Wind Project will have a net capacity factor of between 41.5 to 43.5 percent and an average annual output of between 1129 to 1225 gigawatt hours.⁸² Annual energy production output will depend on final design, site specific features, and annual variability in the wind resource.⁸³

D. Wind rights and easement/lease agreements

77. Big Bend Wind worked with landowners to secure sufficient land lease and wind easements/setback easement agreements to build the Wind Project. Land rights secured from each landowner vary, and may include, but are not limited to, the rights to construct wind turbines and Wind Project facilities, including access roads, rights to wind and buffer easements, authorization to construct transmission feeder lines in public right-of-way, and rights to additional land, if any, required to mitigate

⁷⁶ *Id.*

⁷⁷ *Id.* at 1.

⁷⁸ *Id.* at 29-30.

⁷⁹ *Id.* at 98-99.

⁸⁰ *Id.* at 120.

⁸¹ *Id.* at 124.

⁸² *Id.* at 135.

⁸³ *Id.*

environmental impacts.⁸⁴ Big Bend Wind currently leases 34,185 of the 43,523 acres within the Wind Project Area.⁸⁵ All Wind Project facilities will be sited on leased land and the current leasehold is sufficient to accommodate the proposed facilities, required buffers, and turbine placement flexibility needed to avoid natural resources, homes, and other sensitive features.⁸⁶

78. Except as specifically noted herein, the Wind Project's layout follows the wind energy conversion facility siting criteria outlined in the Commission's Order Establishing General Wind Permit Standards, Docket No. E,G999/M-07-1102 (January 11, 2008), applicable local government ordinances, and Big Bend Wind's best practices. In instances where the setbacks differ for the same feature, the most stringent setback distance is used.⁸⁷

79. Big Bend Wind is requesting that the Commission waive the wind access buffer setback for turbine locations A01 and A02.⁸⁸ The request arises out of the Settlement Agreement among Applicants, MNHS, Upper Sioux, and Lower Sioux. Big Bend Wind explained that a small portion of the five-rotor diameter wind access buffer overlaps a non-participating parcel and, in light of the unique circumstances of the Settlement Agreement, the important balancing of interests at stake, and the fact that the alternative turbine locations result in only small impacts to the three by five RD setback, a waiver of the wind access buffer is warranted in this case.⁸⁹ Testimony submitted by Intervenors supported this request. A witness for the Upper Sioux explained:

It is a reasonable compromise that balances competing considerations. Specifically, in the Settlement Agreement, Big Bend agreed to remove all turbine locations within seven miles of the Jeffers Petroglyphs site. To replace those lost turbine locations, Big Bend identified alternative locations, but several of these locations will require the Commission to modify its wind access buffer setback. As I understand it, the setback is not a statute or rule, but instead a policy implemented by the Commission. Here, it is appropriate to modify that policy because of competing considerations – notably, Upper Sioux's (and the other intervening parties') interest in minimizing impacts to the viewshed at Jeffers Petroglyphs. In our view, recognizing Tribal interests and minimizing those viewshed impacts outweighs the strict application of the wind access buffer setback.⁹⁰

⁸⁴ *Id.* at 24.

⁸⁵ *Id.* at 12.

⁸⁶ *Id.* at 17.

⁸⁷ *Id.* at 14.

⁸⁸ Ex. 337 at 2-3 (Ikkala Surrebuttal).

⁸⁹ Ex. 334 at 7 (Ikkala Direct).

⁹⁰ Ex. 700 at 2 (Savariego Direct).

80. The DOC-EERA recommended the Commission not approve the requested wind access buffer setback waiver, as this Waiver will negatively impact wind rights of the non-participating landowners near turbine locations A01 and A02 without appropriate compensation. Additionally, the three by five RD turbine setbacks and internal turbine spacing gets to the importance of adequate turbine spacing to minimize wake loss and ensuring efficient generation is occurring at operating wind turbines. Although the Commission has authorized these types of waivers for operating wind projects that replace old equipment with new, larger turbines, the Big Bend Wind Project is not a repower project. Here, the Applicant is not restricted to existing turbine tower locations as may be the case with an existing wind project planning to repower turbines. As a result, the DOC-EERA asserted that granting waivers without landowner participation is not warranted.⁹¹

IV. Transmission Line

81. Big Bend Wind's proposed Transmission Line would be in Cottonwood, Martin, and Watonwan Counties, Minnesota (Proposed Route).⁹² The Proposed Route would begin at the Wind Project and Solar Project substations and extend generally to the southeast to the POI at the Crandall Switching Station. The EA also studied two alternative routes that were presented in the Route Permit Application: (1) the Crandall Alternate Route; and (2) the Peaking Plant Alternate Route.⁹³

82. Big Bend Wind determined that 161 kV was the appropriate voltage based on the size and location of the Wind Project.⁹⁴

A. Routes evaluated

1. Proposed Route

83. The Proposed Route begins at the collocated Big Bend Wind Project and Red Rock Solar Project Substations at the northwest corner of the intersection of 590th Avenue and 360th Street in Cottonwood County. The Proposed Route travels south on the west side of 590th Avenue for 1.2 miles before turning east on the north side of 370th Street for one mile. The Proposed Route turns south along the west side of 600th Avenue for two miles before turning east along the north side of 390th Street for one mile and turning south again along 610th Avenue. It then follows the west side of 610th Avenue for a half mile before crossing to the east side of 610th Avenue for an additional half mile before crossing back to the west side of 610th Avenue and continuing for an additional 0.9 mile. The Proposed Route crosses a parcel line to the east and continues south for 0.15 mile before turning southeast to parallel the Watonwan River for 0.55 mile and then travels east along the parcel line for 0.65 mile to County State Aid Highway (CSAH) 2 (620th Avenue). The Proposed Route then turns south along the west side of CSAH 2 for half mile before turning east along the south

⁹¹ DOC-EERA Public Hearing Comments at 1-2 (Feb. 22, 2022) (eDocket No. 20222-183059-01).

⁹² Ex. 316 at 1 (Route Permit Application).

⁹³ Ex. 107 at 255 (EA).

⁹⁴ See *id.* at 13.

side of CSAH 22 (420th Street) for one mile and then turning south again on the west side of County Road 128. The Proposed Route travels south along County Road 128 for three-quarters of a mile before crossing to the east side of the road and paralleling the north side of the Watonwan River through agricultural land for 0.4-mile to the north side of County Road 134 (430th Street). This 0.4-mile segment is proposed to be buried to avoid impacts to a landing strip (see Section 5.1.12). The Proposed Route continues east on the north side of County Road 134 for three-quarters of a mile before crossing County Road 134 and continuing east for an additional 0.35 mile. The Proposed Route then travels southeast through agricultural land for approximately 0.5 mile before turning east for 0.1 mile. The Proposed Route then turns south along a parcel line through agricultural field for 0.5 mile to 250th Street before turning east along the south side of the road for 0.6 mile to the west side of CSAH 9. The Proposed Route follows CSAH 9 south along the west side for 1.5 miles before turning west for 1.8 miles along agricultural field edges. The Proposed Route turns south for 0.5 mile to the step-up substation along 230th Street.⁹⁵

84. The Proposed Route represents Big Bend Wind's effort to identify a route that follows existing roads and parcel lines, avoids residences, minimizes impacts on the environment and affected landowners, and for which Big Bend Wind has voluntary easements.

2. Other routes evaluated

85. Big Bend Wind evaluated routes other than the Proposed Route. Specifically, many parcels in northwestern Martin County are under lease with different developers as part of the Odell and Trimont Wind Farms. Additionally, this area already includes wind turbines, gen-tie transmission lines, and an existing 345 kV transmission line. From the intersection of CSAH 2 and CSAH 22 along the Proposed Route, Big Bend has signed voluntary transmission easements for a route south along CSAH 2 for two miles to the Martin County border. At the Martin County border, easement constraints have challenged route development. The Applicant nonetheless has identified two alternate routes through this area. The Alternate Crandall Route also ends at the Crandall Switching Station POI. The Alternate Peaking Plant Route ends at the Lakefield Junction POI.⁹⁶

86. With respect to the Alternate Peaking Plant Route, Big Bend Wind explained that it has not yet been able to communicate with landowners along that route because landowners in that area are already under agreement with a competitor, and that company has not provided its consent for Big Bend Wind to communicate with those landowners.⁹⁷

87. Big Bend Wind also proposed three alternate route segments as part of the Proposed Route for consideration, which are identified in the EA as Alternate Red Route Segment, Alternate Yellow Route Segment, and Alternate Purple Route

⁹⁵ *Id.* at 255-56.

⁹⁶ *Id.* at 258.

⁹⁷ Windom 2:00 p.m. Public Hearing Tr. at 43-44 (Feb. 1, 2022).

Segment. An additional route segment was added during the scoping process to provide an alternative to a portion of the Peaking Plant Alternate Route, referred to as the Alternate Blue Route Segment in the EA.⁹⁸

88. *Alternate Red Route Segment.* The Alternate Red Segment begins at the intersection of 610th Avenue and CSAH 10 on the border of Cottonwood and Watonwan Counties. The Alternate Red Segment follows the north side of CSAH 10 for 0.25 miles before turning south through agricultural field edge for half mile. The Alternate Red Segment then turns east for 0.7-mile to the west side of CSAH 2 and travels south paralleling CSAH 2 for one mile before rejoining the Proposed Route. The Alternate Red Segment is approximately 2.5 miles in length, approximately 0.15 miles longer than the comparative segment on the Proposed Route.⁹⁹

89. *Alternate Yellow Route Segment.* The Alternate Yellow Segment begins at the intersection of 420th Street and a township minimum maintenance road that runs north to south along the half-section line between CSAH 2 and County Road 128. The Alternate Yellow Segment follows the township road south for 0.35 mile before turning east and following a parcel line/field edge 0.5 mile east to Country Road 128 and the Proposed Route. The Alternate Yellow Segment is the same length as its comparative segment on the Proposed Route. The landowner that resides on the west side of County Road 128 along the Proposed Route has indicated a concern about aesthetics. The Alternate Yellow Segment would cross the property on the west side of the residence, which has existing vegetative screening (i.e., trees).¹⁰⁰

90. *Alternate Purple Route Segment.* The Alternate Purple Segment begins at the intersection of 420th Street and County Road 128 and follows the south side of 420th east for one mile before turning south along a township minimum maintenance road for one mile and rejoining the Proposed Route. The Alternate Purple Segment addresses the same aesthetic concerns as the Yellow Segment. Additionally, the Alternate Purple Segment would eliminate the need to bury approximately 0.4 mile of the Proposed Route due to an existing landing strip located on the east side of County Road 128, north of the Watonwan River and south of the farmstead driveway.¹⁰¹

91. *Alternate Blue Route Segment.* Alternate Blue Route Segment leaves the Peaking Plant Alternate Route along 20th Avenue along the east side of Section 18, extends south to the intersection of 20th Avenue and 220th Street, and then extends west along 220th Street to the proposed step-up substation adjacent to the Lakefield Junction Station. The Peaking Plant Alternate Route and Peaking Plant Alternate Route – Alternate Route Segment are essentially the same length, but the Peaking Plant Alternate Route would extend through, and place pole structures, in approximately a half mile of agricultural crop field where no fence lines or other ROWs currently exist.¹⁰²

⁹⁸ Ex. 107 at 260 (EA).

⁹⁹ *Id.*

¹⁰⁰ *Id.* at 262.

¹⁰¹ *Id.* at 264.

¹⁰² *Id.* at 266.

B. Transmission Line structure types and spans

92. Big Bend Wind proposes either wood or steel monopole structures that generally range in height from 70 feet to 120 feet tall. Big Bend Wind will use four structures that range from 170 feet to 190 feet to facilitate the two crossings above the existing 345 kV transmission line.¹⁰³

93. Big Bend Wind will use three types of monopole structures: tangent, angle, and dead end. These structures are typically used in the following situations: (a) tangent - for in-line (straight) segments; (b) angle - to be used in locations where the alignment turns; and (c) dead end - to be used within the Wind Project substation and step-up substation.¹⁰⁴

94. Transmission line structures are generally designed for installation at existing grades. Sites with more than 10 percent slope will have working areas graded level or fill brought in for working pads.¹⁰⁵

95. Tangent and angle structures may be placed on poured concrete foundations or direct embedded. Direct embedding involves digging a hole for each pole, filling it partially with crushed rock, and then setting the pole on top of the rock base. The area around the pole is then backfilled with crushed rock and/or soil once the pole is set. Any excess soil from the excavation will be spread and leveled near the structure or removed from the site, if requested by the property owner or regulatory agency. Big Bend Wind anticipates the majority of structures to be direct embed.¹⁰⁶

C. Transmission Line conductors

96. The three, single-conductor phase wires will be 795 Aluminum Conductor Steel-Reinforced or a conductor of similar capacity. Optical Ground Wire will be installed above the conductors for lightning protection and communications.¹⁰⁷

D. Transmission Line route widths

97. Big Bend Wind proposes a route width of 500 feet on each side of the proposed Transmission Line route centerline (1,000 feet total width) for a majority of the route.¹⁰⁸

98. Big Bend requests a route width of up to one mile in northwestern Martin County to provide routing flexibility on parcels that are currently under easement with

¹⁰³ Ex. 316 at 6 (Route Permit Application).

¹⁰⁴ *Id.*

¹⁰⁵ *Id.* at 18.

¹⁰⁶ *Id.* at 19.

¹⁰⁷ Ex. 337 at Sch. H, § 2.4 (Ikkala Surrebuttal).

¹⁰⁸ Ex. 107 at Appx. A at 4 (EA).

other entities and for which Big Bend Wind has been unable to initiate the easement process.¹⁰⁹

E. Transmission Line right-of-way

99. A 100-foot right-of-way is necessary for the Transmission Line, but a 150-foot-wide right-of-way will be utilized where the proposed Transmission Line parallels existing roads. The right-of-way paralleling existing roads will be 50 feet wide on the roadside of the line, and 100 feet wide on the non-roadside of the line. The Transmission Line pole structures will be located on private property adjacent to the road right-of-way, and the poles will be within approximately 15 feet of the road right-of-way, allowing for the sharing of road and other transmission line rights-of-way. Three locations along the Transmission Line right-of-way, not parallel to existing roads, will maintain a 150-foot width versus the general 100-foot width, which is being maintained to better facilitate current farming practices.¹¹⁰

F. Step-up Substation

100. Big Bend Wind will build a step-up substation on a five-acre parcel near the intersection of 230th Street and 30th Avenue in Martin County for which Big Bend Wind has an option to purchase. The step-up substation location is on the opposite side of 230th Street from the Crandall Switching Station. A less-than 1,500-foot 345 kV segment will connect the step-up substation to the existing transmission grid via the Crandall Switching Station. The step-up substation components will be mounted on concrete pads. For electrical and fire safety, the step-up substation will be graveled to maintain the area free of vegetation. The area will be fenced to prevent entry by wildlife and unauthorized entry by individuals.¹¹¹

G. Transmission Line costs

101. The total estimated cost of the Transmission Line along the Proposed Route is approximately \$12-14 million. Final costs are dependent on a variety of factors, including the approved route, timing of construction, cost of materials, and labor.¹¹²

V. Solar Project

A. Solar Project description

102. Red Rock Solar is proposing to construct an up to 60 MW AC solar photovoltaic (PV) facility located in Midway Township, Cottonwood County.¹¹³

103. Together, the Wind Project and Solar Project represent Minnesota's first potential wind/solar hybrid renewable-energy project.¹¹⁴

¹⁰⁹ See *id.*

¹¹⁰ *Id.* at 268.

¹¹¹ *Id.* at 269.

¹¹² Ex. 316 at 7 (Route Permit Application).

¹¹³ Ex. 317 at 18 (RR-CN Application).

104. Power generated by the Solar Project will reach the electric grid by traveling through approximately three underground 34.5 kV feeder lines to the Solar Project Substation. The Solar Project will then interconnect via the Transmission Line to the grid.¹¹⁵

105. The Solar Project will include the following permanent and temporary associated facilities:

- (a) PV panels affixed to linear ground-mounted single-axis tracking systems;
- (b) inverters and transformers housed in electrical cabinets;
- (c) electrical collection system;
- (d) a solar project substation;
- (e) inverters and transformers housed together on a skid;
- (f) SCADA systems;
- (g) a step-up substation with metering and switching equipment; and
- (h) an O&M facility to be shared with the Big Bend Wind Project, if needed.¹¹⁶

106. The Solar Project will convert sunlight into direct current electrical energy within PV modules (also referred to as panels). The tempered-glass PV panels will be approximately three feet long by seven feet wide, and between one and two inches thick. The panels will be installed on a tracking-rack system that utilizes galvanized steel and aluminum for the foundations and frame with a motor that allows the tracking-rack system to rotate from east to west throughout the day. Each tracking rack will contain multiple panels. On the tracking-rack system, panels, (based on manufacturer, topography, and vegetation constraints) could be up to 20 feet in height from the ground to the top of the panels when at a 45-degree angle. Depending on the technology selected, the PV panels may have an aluminum frame, silicon, and weatherized plastic backing or a side-mount or under-mount aluminum frame, heat strengthened front glass, and laminate material encapsulation for weather protection.¹¹⁷

107. A linear axis tracking-rack system allows the PV panels to track the solar resource throughout the day. The panels and tracking-rack system are generally aligned in rows north and south with the PV panels facing east toward the rising sun in the morning, parallel to the ground during mid-day, and then west toward the setting sun in the afternoon. The tracking-rack system allows the Project to optimize the angle of the

¹¹⁴ Ex. 318 at 6 (RR-Site Application).

¹¹⁵ Ex. 317 at 20 (RR-CN Application).

¹¹⁶ Ex. 107 at 9 (EA).

¹¹⁷ Ex. 317 at 18 (RR-CN Application).

panels in relation to the sun throughout the day, thereby maximizing production of electricity and the capacity value of the Solar Project.¹¹⁸

108. The tracking-rack system is mounted on top of steel piers which are typically driven into the ground, without a need for excavation or concrete to secure them.¹¹⁹

109. Direct current (DC) electrical wiring will connect the panels to inverters, which will convert the power from DC to AC. The AC will be stepped up through a transformer from the inverter output voltage to 34.5 kV and brought via underground collection cables to the Solar Project Substation. The DC cabling will be mounted underneath the panels in a hanging-harness system. Use of this system minimizes soil disturbance and trenching along every row of panels. The AC-collection system between the inverters and Solar Project Substation will be in a below-ground trench approximately four-feet-deep and one- or two-feet-wide trench. Below-ground AC-collection systems from the inverter skids to the Solar Project Substation will be installed in trenches or plowed into place at a depth of at least four feet below grade. During all trench excavations the topsoil and subsoil will be removed and stockpiled separately in accordance with Red Rock Solar's Agricultural Impact Mitigation Plan (AIMP). Once the cables are laid in the trench, the area will be backfilled with subsoil followed by topsoil.¹²⁰

110. The Solar Project will use a SCADA system, which allows remote control and monitoring.¹²¹

111. The Solar Project Substation will be a 34.5/161 kV step-up substation with metering and switching equipment. The Substation's area will be approximately 300 feet by 200 feet once construction is complete. The Wind Project and Solar Project have separate but collocated project substations.¹²²

112. If needed, the O&M facility may be a shared facility with the Wind Project. As such, this facility is permitted with the Wind Project.¹²³

B. Site location and characteristics

113. The Solar Project is proposed to be located in Sections 1, 2, 11, 12, 14, 22, and 23, Township 106 North, Range 34 West, Cottonwood County, Minnesota, approximately four miles north of the City of Mountain Lake. Red Rock Solar selected this site based on significant landowner interest, optimal solar resource, and minimal impact on environmental resources.¹²⁴

¹¹⁸ *Id.* at 19.

¹¹⁹ *Id.*

¹²⁰ *Id.*

¹²¹ *Id.*

¹²² *Id.* at 19-20.

¹²³ *Id.* at 20.

¹²⁴ Ex. 318 at 6 (RR-Site Application).

114. Red Rock Solar has obtained leases for 846.2 acres of privately owned land. Five acres of the Solar Project boundary has a purchase option for the Solar Project Substation. Based on preliminary design, Solar Project facilities will cover approximately 483 acres of the Solar Project boundary (the Solar Project Footprint).¹²⁵

115. Red Rock Solar has entered into lease agreements with landowners for all parcels on which the Solar Project would be constructed.¹²⁶

C. Solar resource considerations

116. Southwestern Minnesota, including Cottonwood County, contains the best solar resource in the state. This portion of the state is also well known for the excellent wind resource, as characterized by a rich history of wind development.¹²⁷

117. Red Rock Solar explored southwest Minnesota to identify a suitable area for a solar project based on several factors including the high solar resource in this portion of the state, nearby access to the 345 kV transmission grid, and limited environmental constraints, as compared to other regions. Additionally, the Solar Project will be developed with the Wind Project, together creating Minnesota's first wind/solar hybrid renewable-energy project. Therefore, wind resource and land availability to support the Wind Project also played a role in siting the Solar Project.¹²⁸

VI. Projects' Schedule

118. The Projects' commercial operation date is dependent on the completion of the interconnection process, permitting, and other development activities. Currently, the Applicants expect the Projects to be in-service as early as 2024.¹²⁹

VII. Summary of Public Comments

119. At the public hearing sessions, members of the public offered comments and questions. The comments and questions included a broad range of topics, including agriculture; noise; property values; wildlife and their habitats; decommissioning; routing; effects of construction on roadways; intermittency of renewable generation; and economic development.

A. Windom 2:00 p.m. Public Hearing

120. The Administrative Law Judge held a public hearing in Windom at 2:00 p.m. on February 1, 2022. At that hearing, Pauline Nickel, a local resident, discussed the "financial stability" that the Project would provide to farmers.¹³⁰ She noted that, for farmers, so much of their financial livelihood depends on market prices

¹²⁵ *Id.*

¹²⁶ *Id.* at 7.

¹²⁷ *Id.* at 10.

¹²⁸ *Id.* at 8.

¹²⁹ Applicants' Post-Hearing Brief at 6 (Mar. 18, 2022) (eDocket No. 20223-183968-06).

¹³⁰ Windom 2:00 p.m. Public Hearing Tr. at 20 (Feb. 1, 2022) (Nickel).

and climate conditions.¹³¹ This project would allow farmers to diversify and lower the financial stressors of farming.¹³² She stated that her family “supports the management of agriculture production and energy as an option.”¹³³ She also believes that the Project might keep people from moving out of the area.¹³⁴

121. Tom Karas, with Minnesota Native Landscapes, the largest provider of vegetation services to solar projects in Minnesota, commented positively.¹³⁵ He stated that the solar industry coming to Minnesota in 2015 has “created an opportunity for [the] revegetation of so many acres with native plants and especially pollinators.”¹³⁶ He further noted that solar projects “have hardly any impact on the total number of agricultural acres, provide wonderful jobs, income to our farmers, and places for our habitat to be revitalized.”¹³⁷

122. Merle Anderson, a resident whose property the transmission line will run through, supports the Project and stated that “the Commission should grant the certificate of need [and] grant a site permit, with no additional conditions or requirements for any component of the project.”¹³⁸

123. Bob Ewert, a landowner within the wind turbine footprint, noted his long-term support for renewable clean energy.¹³⁹ Mr. Ewert noted the positive impacts of using the sun and wind for energy, rather than fossil fuels, the economic benefits of the Project, and how great it has been to work with this company.¹⁴⁰

124. Loren Ibeling, a local resident, commented on the lack of sufficient advertising for the public hearing, as well as the negative effect this project will have on local roads.¹⁴¹ Later, after being informed in which newspapers the public hearing notice had been published, Mr. Ibeling commented that “there’s more papers than just Windom, St. James, and Fairmont. Put it in something that other people read.”¹⁴²

125. Cody Adrian appeared on behalf of the trustees of the Gladys Franz Bypass Trust.¹⁴³ He stated that the trust is “very happy to see a project like this happen in southwest Minnesota and they are encouraged by the economic benefits that it can

¹³¹ *Id.* at 21.

¹³² *Id.* at 20-21.

¹³³ *Id.* at 22.

¹³⁴ *Id.*

¹³⁵ *Id.* at 24 (Karas).

¹³⁶ *Id.* at 25.

¹³⁷ *Id.* at 26.

¹³⁸ *Id.* at 27 (Anderson).

¹³⁹ *Id.* at 28 (Ewert).

¹⁴⁰ *Id.* at 29-30.

¹⁴¹ *Id.* at 31-32 (Ibeling).

¹⁴² *Id.* at 45.

¹⁴³ *Id.* at 33 (Adrian).

bring to Cottonwood County.”¹⁴⁴ He further noted that he has family land within the Project Area, and his family is likewise excited.¹⁴⁵

126. Ryan Lepp had questions regarding the tribe’s opposition to the Project.¹⁴⁶ Mr. Lepp noted that he felt that the Tribes were able to challenge the location of the windmills, but other landowners were not given that same opportunity.¹⁴⁷ He also wanted to know what would happen to the windmills after 25 years.¹⁴⁸ Dylan Ikkala, senior development manager with Apex Clean Energy, explained how the Project would be decommissioned.¹⁴⁹ Mr. Lepp also stated that he was concerned about an article that had appeared in the New York Times about Apex lying on an application.¹⁵⁰

127. Mr. Lepp had previously submitted a written comment, opposing the Project for several reasons.¹⁵¹ Mr. Lepp stated that the country does not need more electricity, and the company should not be able to use eminent domain on people’s property.¹⁵² In addition, Mr. Lepp was concerned about the Project’s effect on wildlife in the area, the company’s use of production tax credits, as well as visual pollution, noise pollution, and shadow flicker.¹⁵³ Mr. Lepp submitted an additional written comment in February 2022, asking if the energy produced by the Project would remain in Minnesota or offered for sale on the open market and how the Project would “enhance the environment.”¹⁵⁴

128. Andy Nickel, representing Nickel Family Farms and Nickel Construction, voiced their support for the Project.¹⁵⁵ He noted that they have “worked around some other wind farms and we’ve seen the roads in the township and the counties improve greatly after the windmills are in place.”¹⁵⁶ He also stated that 20-year-old windmills near Cedar Lake have been rebuilt and are still being used.¹⁵⁷

129. Tom Appel noted that he appeared at the hearing wearing two hats: an adjacent property owner and a Cottonwood County Commissioner, who sits on the Rural Minnesota Energy Board.¹⁵⁸ He noted that “in the last 18 months, the decommissioning of these wind towers has gone extremely well” and that “pretty much all of [the turbine] blades have been recycled.”¹⁵⁹ He stated that “[i]n terms of both economic impact, the financial impact, [the Project] is simply good for our community

¹⁴⁴ *Id.*

¹⁴⁵ *Id.*

¹⁴⁶ *Id.* at 34 (Lepp).

¹⁴⁷ *Id.* at 35.

¹⁴⁸ *Id.*

¹⁴⁹ *Id.* at 36-37.

¹⁵⁰ *Id.* at 37-38.

¹⁵¹ Comment by Ryan Lepp (Dec. 15, 2020) (eDocket No. 202012-169051-01).

¹⁵² *Id.*

¹⁵³ *Id.*

¹⁵⁴ Comment by Ryan Lepp (Feb. 22, 2022) (eDocket No. 20222-183074-02).

¹⁵⁵ Windom 2:00 p.m. Public Hearing Tr. at 39 (Feb. 1, 2022) (Nickel).

¹⁵⁶ *Id.*

¹⁵⁷ *Id.*

¹⁵⁸ *Id.* at 40 (Appel).

¹⁵⁹ *Id.* at 41.

and our country” and noted that “renewable energy, wind farms and solar, need to be a part of our energy use moving forward.”¹⁶⁰

130. Tyler Scholl, a landowner, inquired as to the Company’s objection to the Department of Commerce’s reroute of the Lakefield Junction transmission line.¹⁶¹ He further noted that although he supports the wind project, “there needs to be extremely clear and concise communication with everyone involved.”¹⁶² Mr. Ikkala noted that there were limits on Apex’s ability to communicate with certain landowners under an agreement with a competitor.¹⁶³ Mr. Ikkala further stated: “We did not oppose the alternate route that you’re referencing, the alternative route remains an alternate route for us in our permit application. We do have our primary site that we are still focused on right now, but the peaking plant route is still an alternate route for us.”¹⁶⁴

131. Stan Friesen commented that “the higher percentage we go with this intermittent power sources, like wind and solar, the more difficult it is to maintain the grid.”¹⁶⁵ He noted that windmills shut down at 22 below zero and stated: “I’m all for alternate energy, but let’s consider the fact of when Texas already learned the hard way, is that an abnormal event, they lost 200 people last winter, how many Minnesotans would still be in their house after 30 days of that type of thing.”¹⁶⁶

B. Windom 6:00 p.m. Public Hearing

132. The Administrative Law Judge also held a public hearing in Windom at 6:00 p.m. on February 1, 2022.

133. At that hearing, Ann Peschges spoke in opposition to the project.¹⁶⁷ She views the flat lands in southern Minnesota as beautiful, and that “having these monstrosities, I can’t even tell you how upsetting that is.”¹⁶⁸ She noted her concern that the windmills would destroy the limited wildlife in the area, make the roads even worse, and cause “hoof problems” for cattle and horses.¹⁶⁹ She also inquired as to what the project would do to her property taxes, as an adjacent landowner whose property was not generating income from the project, and her property value.¹⁷⁰ She stated: “[I]f our property taxes are going through the roof and our value is going down, that’s a losing situation for us.”¹⁷¹ She further asked: “What happens to us when our green energy doesn’t come through? Guess what, we don’t have a lot of trees around here to burn. You’re going to have frozen people. Blackouts here are a serious situation. You need

¹⁶⁰ *Id.*

¹⁶¹ *Id.* (Scholl)

¹⁶² *Id.* at 42.

¹⁶³ *Id.* at 43-44.

¹⁶⁴ *Id.* at 44.

¹⁶⁵ *Id.* at 45 (Friesen).

¹⁶⁶ *Id.* at 45-46.

¹⁶⁷ Windom 6:00 p.m. Public Hearing Transcript at 17 (Feb. 1, 2022) (Peschges).

¹⁶⁸ *Id.* at 18.

¹⁶⁹ *Id.* at 18, 23-24.

¹⁷⁰ *Id.* at 18-19.

¹⁷¹ *Id.* at 19.

to think about that, what you're going to do to people here if you rely on that green energy for everything."¹⁷² She also wanted to know what would happen to the turbines when the subsidies are gone and the company "sells out."¹⁷³ She volunteered to be the "noise level checker" because she was concerned that the noise would "drive people insane."¹⁷⁴ She took issue with the scheduling of the hearing on caucus night, noting that it showed "total disregard for the people that are going to have to deal with it."¹⁷⁵ She noted that a lot of people were afraid to speak up "because their business could be cut."¹⁷⁶ Lastly, she wanted to know if the 400 jobs created would all be local.¹⁷⁷ Mr. Ikkala and Norm Holmen, 4th District County Commissioner, attempted to answer her question related to property taxes.¹⁷⁸ Mr. Ikkala also noted that money had been set aside for decommissioning the project, and that the company would hire local labor "to the greatest extent feasible."¹⁷⁹ Rich Davis, with DOC-EERA, noted that if the company is issued a site permit, they will need to meet specific setbacks from residences to ensure that they meet noise standards, and the project would be subject to noise monitoring.¹⁸⁰

134. Norm Holmen, county commissioner, stated that he had not heard of any complaints resulting from two other completed wind farm projects in the county.¹⁸¹ He noted that both the wind portion and the solar portion of the project were approved unanimously by the county commissioners.¹⁸² Mr. Holmen stated that the tax dollars generated by the project would allow the county to avoid levies on several potential capital improvement projects.¹⁸³ Lastly, he noted that "the original dollars from the wind turbines that are going to be produced by the landowners receiving payments for the wind turbine and for the wind rights on their land, it will be a very positive impact in our communities."¹⁸⁴

135. Johnathan Adrian, a landowner and farmer in the project area, commented in favor of the project, stating that he views the project "as a long-term diversification of income as another source for the farmland there."¹⁸⁵ He also noted that another wind farm project in the area allowed for the provision of grants to the community, including to "the fire and rescue or programs to give coats to kids."¹⁸⁶

136. Brad Hutchinson noted that wind turbines are loud and, with other wind farms in Minnesota, people have been told to "just wear some headphones" if they were

¹⁷² *Id.* at 20.

¹⁷³ *Id.*

¹⁷⁴ *Id.* at 22.

¹⁷⁵ *Id.* at 21.

¹⁷⁶ *Id.* at 25.

¹⁷⁷ *Id.* at 24.

¹⁷⁸ *Id.* at 26-29.

¹⁷⁹ *Id.* at 30-31.

¹⁸⁰ *Id.* at 32.

¹⁸¹ *Id.* at 35 (Holmen).

¹⁸² *Id.* at 36.

¹⁸³ *Id.* at 37.

¹⁸⁴ *Id.* at 38.

¹⁸⁵ *Id.* (Adrian)

¹⁸⁶ *Id.* at 39.

outside working in their gardens.¹⁸⁷ Mr. Hutchinson further discussed the connections between wind/solar farms and mining, stating that “solar and wind turbines, along with electric vehicles, batteries, they’re all dependent on mining. Mostly dependent on what are called rare earth minerals.”¹⁸⁸ Mr. Hutchinson indicated that because mining these rare earth minerals “is very damaging to the environment,” and often opposed here, the United States often obtains them from China and the Republic of Congo.¹⁸⁹ And this is particularly problematic because, according to Mr. Hutchinson, the Republic of Congo uses slave labor in its mines.¹⁹⁰ Mr. Hutchinson also noted other environmental factors involved like shipping the minerals, and the use of cement and diesel machinery, and concluded that “[w]hen you add them all up, the environmental damage, especially in the mining for these rare earth minerals, the environmental damage is greater to build the wind turbine than what we’re going to save by having it flipping around in the air by our homes.”¹⁹¹ He summarized that, in order to build these solar and wind farms, “we are choosing to enter into a profitable business relationship that ignores these environmental parts and the enslavement of other people overseas.”¹⁹²

137. In addition, Mr. Hutchinson had previously submitted a written comment, detailing his concern with how the Project would affect wildlife, the sound and visual effects of wind turbines, and what would happen to property values.¹⁹³ Mr. Hutchinson therefore indicated his desire for a contested case hearing, and requirements that the company minimize damage to bird and bat habitats and negotiate “a mutually satisfactory financial settlement, up to and including the purchase of [affected] property at current market rates.”¹⁹⁴ In an additional written comment, Mr. Hutchinson noted that “[t]he large scale of the project should demand more scrutiny than that given to smaller projects.”¹⁹⁵ In April 2021, Mr. Hutchinson submitted another written comment.¹⁹⁶ Mr. Hutchinson suggested, given the environmental and psychological impacts of the wind turbines, that the entire project be converted to solar.¹⁹⁷ Mr. Hutchinson submitted an additional written comment on November 1, 2021.¹⁹⁸ Mr. Hutchinson responded to the company’s decision to “consolidate the turbines into a smaller area, and to guarantee that those turbines will have a total height of over 650 feet and a rotor diameter over 530 feet.”¹⁹⁹ According to Mr. Hutchinson, this change would create additional dangers for birds and bats; further disrupt the area’s habitat; create additional noise, flicker, and viewshed disruptions within the Project area; and cause additional disruptions for radio, tv, and cellular signals.²⁰⁰ Mr. Hutchinson submitted another

¹⁸⁷ *Id.* at 40 (Hutchinson).

¹⁸⁸ *Id.* at 41.

¹⁸⁹ *Id.* at 42-44.

¹⁹⁰ *Id.* at 44.

¹⁹¹ *Id.* at 43-44.

¹⁹² *Id.* at 46.

¹⁹³ Comment by Brad Hutchinson (Dec. 14, 2020) (eDocket No. 202012-169004-04).

¹⁹⁴ *Id.*

¹⁹⁵ Comment by Brad Hutchinson (Dec. 26, 2020) (eDocket No. 202012-169400-03).

¹⁹⁶ Comment by Brad Hutchinson (Apr. 21, 2021) (eDocket No. 20215-173780-02).

¹⁹⁷ *Id.*

¹⁹⁸ Comment by Brad Hutchinson (Nov. 1, 2021) (eDocket No. 202111-179472-04).

¹⁹⁹ *Id.*

²⁰⁰ *Id.*

written comment on February 22, 2022.²⁰¹ Mr. Hutchinson listed several perceived problems with the Project: (1) Chinese dependence and abuses; (2) unreliable; (3) land usage; (4) transmission lines; (5) environmental damage; (6) loss in property value; (7) sound and shadow flicker; (8) signal disruption for tv, cellular, and internet.²⁰² Mr. Hutchinson concluded:

In summary, wind and solar can be described as detrimental to our environment, unreliable, harmful to people, and an increase to the risks of our electrical grid. Apex Clean Energy has shown itself to be concerned only for profit, willing to sacrifice our environment, mistreated people overseas, the indigenous people who desire to preserve a sacred site near Jeffers, and area residents. There are better, safer, cleaner and far more reliable ways to produce the energy we need. It is time for our state to recognize this, as leaders in other states and countries have already done.²⁰³

138. Travis Dick noted that the company has changed landowner contracts to “include Consumer Price Index pricing and a lot of other beneficial things.”²⁰⁴ He also indicated that the company has included radar technology to “turn off the lights” on the turbines unless there is an aircraft in the area, which “showed good faith on their part to at least try to make this project a little more tolerable to us.”²⁰⁵

C. Virtual Hearing

139. The following comments were made during the virtual public hearing held on February 2, 2022, at 6:00 p.m.

140. Richard Flohrs asked why the green line route moves toward Michael Flohrs land rather than going toward another property owner’s land.²⁰⁶ Mr. Flohrs stated that his family wants “a buffer between the easement and our land.”²⁰⁷ Mr. Ikkala responded that the project “won’t have any impact to your property. Everything would stay within the easement area on the adjacent property owner.”²⁰⁸ Mr. Ikkala further stated: “The route does follow the easements that we acquired voluntarily with the landowners. So this was actually the landowner making the decision to jog east rather than going south. And as well as going diagonal through the field, that was also the landowner’s decision and requested us to do that.”²⁰⁹ Mr. Flohrs reiterated that they do

²⁰¹ Comment by Brad Hutchinson (Feb. 22, 2022) (eDocket No. 20222-183074-02).

²⁰² *Id.*

²⁰³ *Id.*

²⁰⁴ Windom 6:00 p.m. Public Hearing Transcript at 47 (Feb. 1, 2022) (Dick).

²⁰⁵ *Id.* at 47-48.

²⁰⁶ Virtual 6:00 p.m. Public Hearing Transcript at 19 (Feb. 2, 2022) (Flohrs).

²⁰⁷ *Id.* at 20.

²⁰⁸ *Id.* at 22.

²⁰⁹ *Id.* at 22-23.

not want the company “touching [their] land” and that he “wants [the route] to be straightened out.”²¹⁰

141. Mr. Flohrs had also submitted a written comment stating his belief that a route permit should not be granted for the transmission line.²¹¹ He noted that the “preferred route has been routed completely out of area that benefits from this project” and the line “passes within 100 ft of St. Olaf Church [and] Cemetery where people have been laid to rest.”²¹²

142. Kent Scholl, a landlord impacted by one of the proposed routes, inquired as to the status of the company’s negotiations with “Great River Energy as to the availability of a net zero interconnection service at the Lakefield junction substation?”²¹³ Mr. Ikkala responded that the company had not started negotiations with GRE, because the company was focused on the primary transmission route.²¹⁴ Mr. Scholl asked if the Commission were to select one of the peaking plant alternate routes, “can the Commission order Great River Energy to provide you a net zero interconnection?”²¹⁵ Mr. Panait, Commission staff, responded that the Commission has not imposed such a condition on any recently issued permits.²¹⁶ Mr. Scholl then asked several technical questions, as well as additional routing questions, which company representatives tried to answer.²¹⁷ Mr. Scholl then stated: “I do not have a problem with your wind farm or your solar farm, and I fully support your path into Crandall. It’s just all of these unknowns that you’re leaving up in the air, where it seems like you’re leaving it open to interconnect wherever you want to, irregardless [sic] what the Commission is going to shortly rule on. That’s my concern.”²¹⁸

143. Mr. Scholl had also submitted a written comment in December 2020, stating that the company had underestimated the impacts the transmission lines would have on properties.²¹⁹ Mr. Scholl concluded: “It should be a policy of the PUC that no developer have the right through eminent domain to site a transmission line along property lines within a parcel or section of land when co-location with roads is available.”²²⁰ Mr. Scholl submitted an additional comment in April 2021 stating that the Department of Commerce “should ignore and set aside the proposed Alternate Peaking Plant Route –Lakefield Junction POI in its EA review.”²²¹ Mr. Scholl noted that “[t]his POI and related alternate transmission route is purely speculative and cannot be relied upon to deliver Big Bend’s wind and solar generation to the 345 kV transmission

²¹⁰ *Id.* at 23.

²¹¹ Comment by Richard Flohrs (Feb. 3, 2022) (eDocket No. 20222-182622-02).

²¹² *Id.*

²¹³ Virtual 6:00 p.m. Public Hearing Transcript at 24 (Feb. 2, 2022) (Scholl).

²¹⁴ *Id.* at 25.

²¹⁵ *Id.*

²¹⁶ *Id.* at 27.

²¹⁷ *Id.* at 28-36.

²¹⁸ *Id.* at 36.

²¹⁹ Comment by Kent Scholl (Dec. 14, 2020) (eDocket No. 202012-169092-01).

²²⁰ *Id.*

²²¹ Comment by Kent Scholl (Apr. 29, 2021) (eDocket No. 20215-173780-02).

system.”²²² Mr. Scholl submitted an additional comment in February 2022.²²³ Mr. Scholl stated that the proposed transmission line route permit should be granted, but that the Commission should not grant any route permit that “would have Big Bend interconnect at the Lakefield Junction Station POI.”²²⁴ Therefore, according to Mr. Scholl, “the ALJ’s recommended decision and the Commission’s order granting the route permit for the wind and solar projects should clearly limit interconnection to Big Bend’s preferred POI at the Crandall Substation and no other.”²²⁵

144. Alex Pouliot is the field director for the Minnesota Land and Liberty Coalition, which is a group of farmers, landowners, and business and community leaders.²²⁶ Mr. Pouliot stated that the Land and Liberty Coalition’s “position on this project is [to] encourage the PUC to pass this and approve as fast [as] is convenient.”²²⁷ The Coalition “thinks these projects allow individual landowners to have a conversation at their kitchen table that would best follow their financial security, and these projects also help with the community as a whole with the production tax that brings tax relief to community members as well.”²²⁸

145. Nathan Runke, the regulatory and political affairs coordinator for Local 49, stated that for many of these union members, their whole career “is to build projects like these.”²²⁹ He noted that these projects often get a “bad wrap” due to their intermittent nature, but the union believes this “is a needed project for both the energy transition and just for the work it will create for our members and for the lucky people that actually work on the project in the long run if it gets approved.”²³⁰ Overall, according to Mr. Runke, the union just wanted to voice its support for the project.²³¹

146. Ron Klassen stated that he is in support of this project because it is “good for the community...in the long term.”²³²

147. Mikalah Harder stated that she was “concerned about the location of the transmission line” because “the transmission line goes through the historic lake bottom in Mountain Lake that’s currently drained [and] this would stop any possibility of future conservation of that lake bottom.”²³³ She noted that this would be a loss of habitat, as well as “a loss of cultural importance since the island that’s in the middle of that drained lake is the historic home of the first peoples of Minnesota.”²³⁴ Ms. Harder’s husband, Davis Harder, noted that he had previously submitted a written comment that did not

²²² *Id.*

²²³ Comment by Kent Scholl (Feb. 22, 2022) (eDocket No. 20222-183074-02).

²²⁴ *Id.*

²²⁵ *Id.*

²²⁶ Virtual 6:00 p.m. Public Hearing Tr. at 39 (Feb. 2, 2022) (Pouliot).

²²⁷ *Id.*

²²⁸ *Id.*

²²⁹ *Id.* at 40-41.

²³⁰ *Id.* at 41.

²³¹ *Id.*

²³² *Id.* at 51 (Klassen).

²³³ *Id.* at 42 (Harder).

²³⁴ *Id.* at 43.

appear on the docket's website.²³⁵ The Administrative Law Judge encouraged Mr. Harder to send that comment in again so that he could ensure it would become part of the record.²³⁶ Mr. Harder also asked if the company would work with landowners "to allow conservation easements on top of, or in place of, their wind easements after the fact to allow a landowner that economic opportunity to still be allowed conservation investment on the land?"²³⁷ A company spokesperson noted that the company recently started a voluntary conservation grant program, but she was unable to answer Mr. Harder's follow-up question regarding whether the funding would be spent directly within the project area.²³⁸ Mr. Harder noted that he has previously asked these questions, but no one can answer them, and he never gets follow-up information.²³⁹ The company indicated it would provide Mr. Harding with contact information for the best person to speak to about this issue.²⁴⁰

148. In April 2021, Ms. Harder submitted a written comment in opposition to the Project.²⁴¹ She stated: "The project has the potential to negatively impact current habitat, through wildlife endangerment, the spreading of invasive species during the build, and a negative impact on the health of the river/watershed. It will also greatly reduce the possibility of future conservation projects, which is a critical need for the local community and its wildlife. Furthermore, it will negatively impact the Jeffers Petroglyph site, a sacred space that should be respected and preserved."²⁴² Ms. Harder noted that while she opposes this project, she is not against renewable energy.²⁴³ Rather, Ms. Harder believes that "[t]he negative impacts must be balanced out with more restoration of the surrounding area so that we can be sure what is being taken out of our community is consciously being put back in."²⁴⁴

149. The Department of Commerce later located Mr. Harder's missing written comment, submitted in April 2021, and added it to the record.²⁴⁵ In that comment, Mr. Harder expressed concerns about the Project's likely impacts "on the environment and future conservation unless alterations and mitigation measures are made."²⁴⁶ Mr. Harder stated: "The current region is struggling ecologically with pressures from development, agriculture, and invasive species. What this region needs is more conservation to give it a boost rather than development that has a large potential to hinder future conservation."²⁴⁷ Mr. Harder submitted an additional comment in February 2022.²⁴⁸ He stated: "My intent for this comment letter is to advocate for the

²³⁵ *Id.*

²³⁶ *Id.* at 44.

²³⁷ *Id.* at 44-45.

²³⁸ *Id.* at 46-47.

²³⁹ *Id.* at 48.

²⁴⁰ *Id.* at 50.

²⁴¹ Comment by Mikalah Harder (Apr. 30, 2021) (eDocket No. 20215-173780-02).

²⁴² *Id.*

²⁴³ *Id.*

²⁴⁴ *Id.*

²⁴⁵ Comment by Davis Harder (Apr. 30, 2021) (eDocket No. 20222-182545-01).

²⁴⁶ *Id.*

²⁴⁷ *Id.*

²⁴⁸ Comment by Davis Harder (Feb. 22, 2022) (eDocket No. 20222-183074-02).

environmental resources that would be impacted by the project, as well as upholding the priorities and goals outlined in regional planning.”²⁴⁹ Mr. Harder asked: “Will landowners who enroll their parcels with Apex now be able to enroll their land into conservation efforts in the future?”²⁵⁰ He noted that he has asked this question several times and has not been able to get an answer from various Apex representatives.²⁵¹

D. Written Comments

150. In addition to the comments submitted at public hearings, numerous written comments were submitted into the record.

151. Kenneth Olson, a landowner in the Project area, commented that his family was not interested in having a transmission line cross their property.²⁵² Mr. Olson further posited that it would make more sense to run the transmission line through the ditches along roadways rather than “down the middle of some of the best farmland in the state.”²⁵³

152. C. Merle Anderson stated: “Please issue the appropriate permits as soon as possible. This project is good for everyone.”²⁵⁴

153. Berdon Baerg, speaking for himself and as chief operating officer for B&A Baerg Farms, voiced his opposition to the Project.²⁵⁵ He stated that the wind project would “greatly disrupt the migration pattern of the Canadian geese from [the] area.”²⁵⁶ In addition, Mr. Baerg claimed that the wind towers and power lines would “obstruct the safety” of aerial spray planes, affect the area’s beauty, endanger deer and honeybees, psychologically affect residents due to the flashing lights and “humming and swooshing sound,” raise taxes and increase the cost of electricity.²⁵⁷

154. Tim Harder stated that he was not interested in more wind generation in the area.²⁵⁸ He stated that not only are wind turbines an eye sore, they “are not economical, [are] bad for farmland from a compaction perspective, [and] require taxpayer funding for subsidies.”²⁵⁹

155. Jason George, on behalf of the International Union of Operating Engineers, Local 49, noted that the Project would “further Minnesota’s goals of increasing renewable energy output while minimizing the intermittency of that supply.”²⁶⁰ Local 49 was also “happy to hear that Big Bend Wind, LLC has identified using local

²⁴⁹ *Id.*

²⁵⁰ *Id.*

²⁵¹ *Id.*

²⁵² Comment by Kenneth Olson (Dec. 24, 2019) (eDocket No. 201912-158600-01).

²⁵³ *Id.*

²⁵⁴ Comment by C. Merle Anderson (Dec. 1, 2020) (eDocket No. 202012-169006-01).

²⁵⁵ Comment by Berdon Baerg (Dec. 14, 2020) (eDocket No. 202012-169004-01).

²⁵⁶ *Id.*

²⁵⁷ *Id.*

²⁵⁸ Comment by Tim Harder (Dec. 14, 2020) (eDocket No. 202012-169077-02).

²⁵⁹ *Id.*

²⁶⁰ Comment by Jason George (Dec. 7, 2020) (eDocket No. 202012-169052-02).

labor as one of its development priorities,” but felt that a “commitment to utilizing contractors that pay local standard wages” was an opportunity to “maximize the value this project provides to our state.”²⁶¹ In February 2022, Local 49 reaffirmed its support for the Project.²⁶²

156. In addition, the North Central States Regional Council of Carpenters also submitted a written comment in support of the Project, as it will provide local job benefits and contribute toward Minnesota’s goal of reducing greenhouse gas emissions.²⁶³

157. Andrew Hjermstad stated: “I am in full support of this project. Larger-scale wind and solar projects like this are absolutely essential to meet Minnesota’s sustainability goals.”²⁶⁴

158. Jess Landgraf noted support for “the requests made by the Dakota communities and MNHS for an 8-mile buffer between Jeffers Petroglyphs and the edge of the turbine installation.”²⁶⁵

159. Jenna Harder similarly voiced support for a buffer between the wind turbines and the Jeffers Petroglyphs.²⁶⁶ Ms. Harder also noted concern for the native-prairie ecosystem, particularly the Long-legged Upland Sandpiper, and asked that the turbines be placed more than the proposed five miles from the site of the Jeffers Petroglyphs.²⁶⁷ Ms. Harder submitted an additional written comment on April 28, 2021, listing the endangered, threatened, and “special concern” inhabitants of the native prairies found within the Project area.²⁶⁸

160. Elvin Thiessen is a farm-owner with an airstrip on his property.²⁶⁹ Mr. Thiessen notes that he still uses this airstrip, but there are two proposed windmills in his flying pattern.²⁷⁰ Mr. Thiessen stated that if these two turbines are not moved it could be fatal to him or his family.²⁷¹

161. Wayne Hesse, a local landowner, submitted a written comment in support of the Project.²⁷² He stated that “[n]ot only are these projects environmentally sound but they will also bring production tax revenue to the local counties. . . . [and] a nonfarm revenue stream to farm and landowners.”²⁷³

²⁶¹ *Id.*

²⁶² Comment by Nathaniel Runke (Feb. 11, 2022) (eDocket No. 20222-182729-01).

²⁶³ Comment by Adam Duininck (Feb. 22, 2022) (eDocket No. 20222-183023-01).

²⁶⁴ Comment by Andrew Hjermstad (Apr. 4, 2021) (eDocket No. 20215-173780-02).

²⁶⁵ Comment by Jess Landgraf (Apr. 5, 2021) (eDocket No. 20215-173780-02).

²⁶⁶ Comment by Jenna Harder (Apr. 6, 2021) (eDocket No. 20215-173780-02).

²⁶⁷ *Id.*

²⁶⁸ Comment by Jenna Harder (Apr. 28, 2021) (eDocket No. 20215-173780-02).

²⁶⁹ Comment by Elvin Thiessen (Mar. 27, 2021) (eDocket No. 20215-173780-02).

²⁷⁰ *Id.*

²⁷¹ *Id.*

²⁷² Comment by Wayne Hesse (Feb. 2, 2022) (eDocket No. 20222-182475-04).

²⁷³ *Id.*

162. Cindy Johnson wrote in support of the Project, stating that the Commission should move forward with the Project, “[t]he sooner, the better!”²⁷⁴

163. Brad and Lois Herring, local landowners, stated: “[W]e have no protection for what the transmission line may do to our property value, unknown effects the line may have on our trees which is our windbreak. We will not receive any money for the transmission line poles as they are across the road from us, but we have to look at them daily and have the possibility of negative repercussions to our property value, health and trees. Where’s our protection?”²⁷⁵

164. Nhut Nguyen noted that he had informed the company several times that he “[would] not allow any construction activities on [his] land.”²⁷⁶

165. Michael Flohrs stated: “You do not have permission to build a transmission line on my property nor do you have permission to build a transmission line with an easement that extends onto my property. Trespassing on my property before, during and after the construction of the transmission line will be prosecuted.”²⁷⁷

166. On February 22, 2022, the Applicants submitted comments in response to the public comments offered during the comment period through February 20, 2022.²⁷⁸

Big Bend Wind Certificate of Need

I. Certificate of Need Criteria

167. A “large energy facility” is defined as “any electric power generating plant or combination of plants at a single site with a combined capacity of 50,000 kilowatts or more and transmission lines directly associated with the plant that are necessary to interconnect the plant to the transmission system.”²⁷⁹ No large energy facility may be cited or constructed in Minnesota without a certificate of need.²⁸⁰ Minn. Stat. § 216B.243 and Minn. R. ch. 7849 set forth the criteria for issuance of a certificate of need.

168. The Commission considers whether the applicant has showed that “demand for electricity cannot be met more cost effectively through energy conservation and load-management measures” and has “otherwise justified its need.”²⁸¹ Minn. Stat. § 216B.243, subd. 3, in relevant part, provides for consideration of the following factors in assessing need:

- (1) the accuracy of the long-range energy demand forecasts on which the necessity for the facility is based;

²⁷⁴ Comment by Cindy Johnson (Feb. 1, 2022) (eDocket No. 20222-182626-01).

²⁷⁵ Comment by Brad and Lois Herring (Feb. 21, 2022) (eDocket No. 20222-183074-02).

²⁷⁶ Comment by Nhut Nguyen (Nov. 26, 2020) (eDocket No. 202012-168792-01).

²⁷⁷ Comment by Richard Flohrs (Feb. 3, 2020) (eDocket No. 20222-182615-01).

²⁷⁸ Applicants’ Post-Hearing Comments (Feb. 22, 2022) (eDocket No. 20222-183052-01).

²⁷⁹ Minn. Stat. § 216B.2421, subd. 2(1).

²⁸⁰ Minn. Stat. § 216B.243, subd. 2.

²⁸¹ *Id.*, subd. 3.

- (2) the effect of existing or possible energy conservation programs under sections 216C.05 to 216C.30 and this section or other federal or state legislation on long-term energy demand;
- (3) the relationship of the proposed facility to overall state energy needs, as described in the most recent state energy policy and conservation report prepared under section 216C.18, or, in the case of a high-voltage Transmission Line, the relationship of the proposed line to regional energy needs, as presented in the transmission plan submitted under section 216B.2425;
- (4) promotional activities that may have given rise to the demand for this facility;
- (5) benefits of this facility, including its uses to protect or enhance environmental quality, and to increase reliability of energy supply in Minnesota and the region;
- (6) possible alternatives for satisfying the energy demand or transmission needs including but not limited to potential for increased efficiency and upgrading of existing energy generation and transmission facilities, load-management programs, and distributed generation;
- (7) the policies, rules, and regulations of other state and federal agencies and local governments;
- (8) any feasible combination of energy conservation improvements, required under section 216B.241, that can (i) replace part or all of the energy to be provided by the proposed facility, and (ii) compete with it economically;
- (9) with respect to a high-voltage transmission line, the benefits of enhanced regional reliability, access, or deliverability to the extent these factors improve the robustness of the transmission system or lower costs for electric consumers in Minnesota;
- (10) whether the applicant or applicants are in compliance with applicable provisions of sections 216B.1691 and 216B.2425, subdivision 7, and have filed or will file by a date certain an application for certificate of need under this section or for certification as a priority electric transmission project under section 216B.2425 for any transmission facilities or upgrades identified under section 216B.2425, subdivision 7;

(11) whether the applicant has made the demonstrations required under subdivision 3a; and

(12) if the applicant is proposing a nonrenewable generating plant, the applicant's assessment of the risk of environmental costs and regulation on that proposed facility over the expected useful life of the plant, including a proposed means of allocating costs associated with that risk.²⁸²

169. Minnesota rules further require an application to explain the relationship of the proposed facility to each of three "socioeconomic considerations:" socially beneficial uses of the output of the facility, including its uses to protect or enhance environmental quality; promotional activities that may have given rise to the demand for the facility; and the effects of the facility in inducing future development.²⁸³

170. A certificate of need must be granted if the Commission determines that:

A. the probable result of denial would be an adverse effect upon the future adequacy, reliability, or efficiency of energy supply to the applicant, to the applicant's customers, or to the people of Minnesota and neighboring states, considering:

(1) the accuracy of the applicant's forecast of demand for the type of energy that would be supplied by the proposed facility;

(2) the effects of the applicant's existing or expected conservation programs and state and federal conservation programs;

(3) the effects of promotional practices of the applicant that may have given rise to the increase in the energy demand, particularly promotional practices which have occurred since 1974;

(4) the ability of current facilities and planned facilities not requiring certificates of need to meet the future demand; and

(5) the effect of the proposed facility, or a suitable modification thereof, in making efficient use of resources;

²⁸² *Id.*

²⁸³ Minn. R. 7849.0240, subp. 2.

B. a more reasonable and prudent alternative to the proposed facility has not been demonstrated by a preponderance of the evidence on the record, considering:

(1) the appropriateness of the size, the type, and the timing of the proposed facility compared to those of reasonable alternatives;

(2) the cost of the proposed facility and the cost of energy to be supplied by the proposed facility compared to the costs of reasonable alternatives and the cost of energy that would be supplied by reasonable alternatives;

(3) the effects of the proposed facility upon the natural and socioeconomic environments compared to the effects of reasonable alternatives; and

(4) the expected reliability of the proposed facility compared to the expected reliability of reasonable alternatives;

C. by a preponderance of the evidence in the record, the proposed facility, or a suitable modification of the facility, will provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including human health, considering:

(1) the relationship of the proposed facility, or a suitable modification thereof, to overall state energy needs;

(2) the effects of the proposed facility, or a suitable modification thereof, upon the natural and socioeconomic environments compared to the effects of not building the facility;

(3) the effects of the proposed facility, or a suitable modification thereof, in inducing future development; and

(4) the socially beneficial uses of the output of the proposed facility, or a suitable modification thereof, including its uses to protect or enhance environmental quality; and

D. the record does not demonstrate that the design, construction, or operation of the proposed facility, or a suitable modification of the facility, will fail to comply with relevant policies, rules, and regulations of other state and federal agencies and local governments.²⁸⁴

171. The factors listed under each of the criteria set forth in Minn. R. 7849.0120 must be evaluated to the extent that the Commission considers them applicable and pertinent to a proposed facility.²⁸⁵ The Commission must also consider whether the applicant has complied with all applicable procedural requirements.²⁸⁶

II. Application of Certificate of Need Criteria to the Wind Project

A. Probable result of denial (Minn. R. 7849.0120(A))

172. The Commission must examine whether “the probable result of denial would be an adverse effect upon the future adequacy, reliability, or efficiency of energy supply to the applicant, to the applicant’s customers, or to the people of Minnesota and neighboring states.”²⁸⁷ To do so, it considers multiple factors, including the forecasted need, available energy resources, and the advantages and disadvantages of utilizing alternative resources.²⁸⁸

173. The Wind Project will provide up to 300 MW of nameplate capacity to meet the electricity needs of Minnesota and the region. Denying the CN Application would result in the loss of a significant amount of electricity needed to satisfy state and regional demand and would deny utilities and other customers the opportunity to purchase clean, low-cost energy that will count toward satisfying renewable energy standards and goals. There is a significant body of state legislative policy requiring utilities to obtain a certain percentage of their total energy resources from renewable energy, which supports the need for reliable, efficient renewable resources, like the wind energy produced by the Project. Likewise, the generation fleet in the MISO region is in transition, and MISO is engaged in active analysis and planning to enable the transition to lower carbon resources. The Project is only one part of the transition to less carbon intensive energy, and this shift to new generation technology will continue, even absent the Project. The Project layout has been designed to efficiently utilize this wind resource while minimizing potential human and environmental impacts.²⁸⁹

²⁸⁴ Minn. R. 7849.0120.

²⁸⁵ Minn. R. 7849.0100.

²⁸⁶ Minn. R. 7854.1000, subp. 3.

²⁸⁷ Minn. R. 7849.0120(A).

²⁸⁸ *In re Northern States Power Co.*, No. A10-397, 2010 WL 4608342, at *4-5 (Minn. Ct. App. Nov. 16, 2010); *see also In re Great River Energy*, Nos. A09-1646, A09-1652, 2010 WL 2266138, at *3-4 (Minn. Ct. App. June 8, 2010) (affirming grant of certificate, even when evidence showed general decreases in energy needs over the next decade because, among other things, “forecasts were only one of the factors MPUC considered in its decision to grant the certificates of need”).

²⁸⁹ Ex. 314 at 9 (BB-CN Application).

1. Accuracy of Applicant's forecast of demand (Minn. R. 7849.0120(A)(1))

174. Minnesota Rule 7849.0120(A)(1) requires consideration of “the accuracy of the applicant’s forecast of demand for the type of energy that would be supplied by the proposed facility” when determining if denial of a Certificate of Need application would have an adverse effect.

175. Because Big Bend Wind is an independent power producer (IPP) and does not have a utility “system” as defined in Minn. R. 7849.0010, subp. 29, Big Bend Wind requested an exemption from the forecast requirements in Minn. R. 7849.0270 and instead offered to submit “regional demand, consumption, and capacity data from credible sources to demonstrate the need for the independently produced renewable energy that will be generated by the Project.”²⁹⁰

176. Consistent with DOC-DER’s recommendation, the Commission granted this exemption and approved use of alternative data for demonstrating demand for the energy supplied by the Project.²⁹¹

177. Analyzing this requirement, DOC-DER concluded that Big Bend Wind has met this factor.²⁹² DOC-DER relied on a recent Commission Order (Plum Creek Order), which stated that there is no requirement that an applicant “present a PPA, IRP, biennial transmission project report, or any other specific data to demonstrate demand. The Legislature contemplated that independent power producers would construct such projects and did not require them to enter into power purchase agreements before obtaining a certificate of need. Rather, the Commission may evaluate demand using any data it finds persuasive, on a case-by-case basis.”²⁹³ In that case, the Commission concluded that the applicant had:

showed that utilities and commercial and industrial customers have reported strong clean energy goals above and beyond RES requirements, and additional renewable energy sources will be needed to meet that demand. Furthermore, utilities plan to retire coal-based generating units across the region in the coming years, and renewable energy sources are expected to fill some of the resulting capacity needs. These established goals and plans are strong evidence of a utility’s intention for future energy development

²⁹⁰ *Id.* at 30-31.

²⁹¹ *Id.* at 30.

²⁹² Ex. 805 at 5 (DOC-DER Comments).

²⁹³ See *In re Applications of Plum Creek Wind Farm, LLC for a Certificate of Need, Site Permit, and Route Permit for an up to 414 MW Large Wind Energy Conversion System and 345 kV Transmission Line in Cottonwood, Murray, and Redwood Counties*, Docket Nos. IP-6997/CN-18-699, IP6697/WS-18-700, IP6697/TL-18-701, Order Granting Certificate of Need and Issuing Site Permit and Route Permit (Sept. 23, 2021).

and can be used to demonstrate demand, especially when consistent with stated public policy goals.²⁹⁴

178. DOC-DER noted that, as in the Plum Creek Order, Big Bend Wind was granted an exemption to Minn. R. 7849.0270, which requires an applicant to provide information regarding its system peak demand and annual energy consumption. Instead, in the Wind CN Application, Big Bend Wind cited several sources that create a need for the Project. First, Big Bend Wind cited the integrated resource plans, renewable energy goals, and carbon dioxide emissions reduction goals of Xcel Energy, Otter Tail Power Company, Minnesota Power, and Southern Minnesota Municipal Power Agency. Second, Big Bend Wind cited to Minn. Stat. §§ 216C.05, 216H.02 (2020) as supporting the need for renewable energy. Third, Big Bend Wind cited corporations turning to renewable energy to save money and meet sustainability goals. Commercial and industrial customers either purchase renewable energy directly or obtain renewable benefits and cost savings through financially settled contracts (also known as virtual power purchase agreements). Fourth, Big Bend Wind stated that retirements of coal-based generating units are expected across the MISO region, and renewable generation resources are expected to fill the resulting capacity needs. Therefore, DOC-DER concluded that Big Bend Wind's forecast of the need for the renewable energy expected to be produced by the Wind Project is reasonable.²⁹⁵

179. Given the undisputed accuracy of the demand data provided, Big Bend Wind has satisfied Minn. R. 7849.0120(A)(1).

2. Effects of the Applicant's existing or expected conservation programs (Minn. R. 7849.0120(A)(2))

180. Minnesota Rule 7849.0120(A)(2) requires consideration of "the effects of the applicant's existing or expected conservation programs and state and federal conservation programs."

181. This sub-factor relates to Minn. Stat. § 216B.243, subd. 3, which states that "[n]o proposed large energy facility shall be certified for construction unless the applicant can show that demand for electricity cannot be met more cost effectively through energy conservation and load-management measures."

182. Big Bend Wind is not a utility and does not have a system or retail customers to implement conservation projects. The Commission granted Big Bend Wind an exemption from these requirements.²⁹⁶ Thus, Big Bend Wind does not need to satisfy Minn. R. 7849.0120(A)(2), Minn. R. 7849.0290, and Minn. Stat. § 216B.243, subd. 3(2), 3(8).

²⁹⁴ *Id.*

²⁹⁵ Ex. 805 at 5 (DOC-DER Comments).

²⁹⁶ Ex. 201 at 7 (Order Approving Exemptions to Certain Filing Requirements).

183. Further, DOC-DER concluded that it is unlikely that the regional needs for wind energy at the scale indicated by Big Bend Wind could be met through conservation programs.²⁹⁷

3. Promotional practices (Minn. R. 7849.0120(A)(3))

184. Minnesota Rule 7849.0120(A)(3) requires consideration of the effects of promotional practices of the applicant that may have given rise to the increase in the energy demand.

185. Big Bend Wind did not engage in promotional activities to give rise to the Project. The Commission granted Big Bend Wind a conditional exemption from these requirements.²⁹⁸ Thus, Big Bend Wind does not need to satisfy Minn. R. 7849.0120(A)(3), Minn. R. 7849.0240, subp. 2(B), and Minn. Stat. § 216B.243, subd. 3(4).²⁹⁹

4. Ability of facilities not requiring a CN to meet future demand (Minn. R. 7849.0120(A)(4))

186. Minnesota Rule 7849.0120(A)(4) requires consideration of “the ability of current facilities and planned facilities not requiring certificates of need to meet the future demand.”

187. This sub-factor relates, in part, to Minn. Stat. § 216B.243, subd. 3(6), which requires the Commission, in assessing need, to consider “possible alternatives for satisfying the energy demand or transmission needs including but not limited to potential for increased efficiency and upgrading of existing energy generation and transmission facilities, load-management programs, and distributed generation.”

188. The primary alternatives to the proposed facilities are purchases from renewable facilities outside Minnesota or construction of renewable Minnesota facilities that are small enough not to require certificates of need (less than 50 MW). As an IPP, Big Bend Wind is a producer or seller, rather than purchaser, of electric generation. A renewable facility of less than 50 MW would not contribute as substantial an amount of renewable energy towards the Minnesota RES and would not benefit as much from economies of scale as does the proposed Project. In addition, as an IPP Big Bend Wind has the incentive to site generation in an economically efficient manner inside or outside Minnesota. Further, DOC-DER noted that any party wishing to do so may propose an alternative to the proposed Wind Project, but that one had not been proposed. Therefore, DOC-DER concluded that current and planned facilities not requiring a CN have not been demonstrated to be more reasonable than the proposed Project.³⁰⁰ The record supports DOC-DER’s conclusion.

²⁹⁷ Ex. 805 at Att. 1 (DOC-DER Comments).

²⁹⁸ Ex. 201 at 7 (Order Approving Exemptions to Certain Filing Requirements).

²⁹⁹ Ex. 805 at 15 (DOC-DER Comments).

³⁰⁰ *Id.* at 10.

5. Effect of facility in making efficient use of resources (Minn. R. 7849.0120(A)(5))

189. Minnesota Rule 7849.0120(A)(5) requires consideration of “the effect of the proposed facility, or a suitable modification thereof, in making efficient use of resources.”

190. The area in which the Wind Project is proposed has a strong wind resource. The Project layout has been designed to efficiently utilize this wind resource while minimizing potential human and environmental impacts.³⁰¹ The Project is estimated to have a net capacity factor of approximately 41.5 to 43.5 percent based on its planned design.³⁰²

191. The Transmission Line also meets the criteria in this rule as, if the Transmission Line is not built, the generation from the Wind and Solar Projects has no outlet, and the Projects would not be constructed as proposed.

192. As discussed above, Big Bend Wind has satisfied each of the five sub-factors of Minn. R. 7849.0120(A).

B. A more reasonable and prudent alternative to the facility has not been demonstrated (Minn. R. 7849.0120(B))

193. Minnesota Rule 7849.0120(B) requires that “a more reasonable and prudent alternative to the proposed facility has not been demonstrated by a preponderance of the evidence on the record.”

194. This factor relates to Minn. Stat. § 216B.243, subd. 3(6), which requires the Commission, in assessing need, to consider “possible alternatives for satisfying the energy demand or transmission needs including but not limited to potential for increased efficiency and upgrading of existing energy generation and transmission facilities, load-management programs, and distributed generation.”

195. Consistent with state requirements, Big Bend Wind analyzed multiple alternatives, as did the EA.

196. In the CN Application, Big Bend Wind analyzed, among others, upgrades to existing resources, new transmission, solar power, hydropower, biomass, and emerging technologies.³⁰³ Big Bend Wind concluded that the Wind Project is the best alternative for meeting the renewable energy needs in Minnesota and the region in the near term. All other potential alternatives reviewed by Big Bend Wind fall short in one or more categories. Moreover, as an IPP, Big Bend Wind does not have the right to sell its electricity to anyone. Instead, Big Bend Wind will compete with alternative sources of energy to obtain a purchase agreement. In this manner, the Project will have at least

³⁰¹ Ex. 314 at 9 (BB-CN Application).

³⁰² Ex. 332 at 135 (BB-Amended Site Application).

³⁰³ Ex. 314 at 20-22 (BB-CN Application).

one other comparison to alternatives prior to its construction and operation.³⁰⁴ The CN Application also reflects a consideration of alternatives to the Transmission Line, and the record reflects no more reasonable and prudent alternative to the Transmission Line.³⁰⁵

197. The EA analyzed the Wind Project and Solar Project in various ways, including as a hybrid facility, as proposed; a 335 MW solar facility; a 335 MW wind energy and solar facility hybrid located elsewhere in the state; a 335 MW solar facility with battery storage located elsewhere in the state; and the no-build alternative.³⁰⁶ The EA did not conclude that any of these alternatives were more reasonable and prudent than the Projects as proposed.

1. Size, type, and timing of proposed facility compared to reasonable alternatives (Minn. R. 7849.0120(B)(1))

198. Minnesota Rule 7849.0120(B)(1) requires consideration of “the appropriateness of the size, the type, and the timing of the proposed facility compared to those of reasonable alternatives.” Each of these three categories of alternatives is discussed below.

199. *Size.* Regarding size of the Wind Project (up to 300 MW), DOC-DER noted that, although collective information submitted by the utilities subject to the Minnesota RES indicates that there is sufficient energy in aggregate to meet the RES, this does not consider the potential need for additional renewable resources from individual utilities with insufficient energy to meet RES. Additional renewable energy may also be required as power purchase agreements involving renewable resources expire. Additionally, utilities in neighboring states may have a need for renewable energy. Furthermore, the Wind Project is sized to take advantage of economies of scale while also making efficient use of existing transmission capacity. Thus, DOC-DER concluded that the proposed Project’s size is not excessive and therefore is reasonable, and the record supports this conclusion.³⁰⁷

200. *Type.* The Commission granted Big Bend Wind an exemption to Minn. R. 7849.0250(B)(1)-(3), (5) and a partial exemption to data requirement (4), to the extent that the Rule requires discussion of non-renewable alternatives. The goal of the Wind Project is to provide renewable energy that will help utilities satisfy Minnesota’s RES or SES, information regarding nonrenewable alternatives would be irrelevant. Thus, DOC-DER concluded that the Wind Project’s type is reasonable.³⁰⁸

201. *Timing.* The timing of the Wind Project generally coincides or precedes the anticipated need for wind additions of multiple utilities in their IRPs as discussed in the forecast section above. As DOC-DER noted, current IRPs address resources through

³⁰⁴ *Id.* at 25.

³⁰⁵ *Id.* at 27-28.

³⁰⁶ Ex. 107 at 69-75 (EA).

³⁰⁷ Ex. 805 at 7 (DOC-DER Comments).

³⁰⁸ *Id.* at 7-8.

the year 2034. Thus, the Wind Project is timed to be available to meet the IRP needs. DOC-DER explained that: there will likely not be a one-to-one match between CN applications based on the regional need for renewable generation and Minnesota utilities' RES compliance level; additional renewable resources may be needed for certain Minnesota utilities to meet future RES requirements due to capacity expirations; and capacity additions are typically added in "chunks" due to the benefits of economies of scale. In summary, DOC-DER concluded that the timing of the Wind Project is reasonable, and the record supports this conclusion.³⁰⁹

202. As summarized above, the record reflects that Big Bend Wind has considered the size, type, and timing of the Wind Project compared to those of the reasonable alternatives and found that the Project is appropriate.

2. Cost of the facility and the energy to be supplied compared to reasonable alternatives (Minn. R. 7849.0120(B)(2))

203. Minnesota Rule 7849.0120(B)(2) requires consideration of "the cost of the proposed facility and the cost of energy to be supplied by the proposed facility compared to the costs of reasonable alternatives and the cost of energy that would be supplied by reasonable alternatives."

204. The Commission granted Big Bend Wind an exemption from providing a description of alternatives that could provide electric power at the asserted level of need, requiring only details regarding renewable alternatives. Big Bend Wind intends to sell the power produced from the proposed Project to a potential buyer, one possibly being an investor-owned utility within Minnesota. In the event a PPA is reached with a Minnesota utility, the Commission will have the opportunity to review the terms and costs associated with the PPA in its own proceeding. The Wind CN Application also included a discussion of alternatives to the proposed Project, including, but not limited to hydropower, biomass, solar, and emerging technologies. Big Bend Wind concluded that wind energy resources are cost effective when compared with other renewable resources. DOC-DER concluded that the data provided by Big Bend Wind is reasonable and demonstrates wind energy's cost advantages and disadvantages relative to other new, renewable sources, and the record supports this conclusion.³¹⁰

205. Further, because the Wind Project would not be subject to fluctuations in fuel costs, the Wind Project could help stabilize or lower electricity prices in the state and region. DOC-DER concluded that the cost of the Wind Project and the cost of energy to be supplied by the proposed Project is reasonable compared to the costs of reasonable alternatives and the cost of energy that would be supplied by reasonable alternatives. The record supports this conclusion.³¹¹

206. Thus, Big Bend Wind has satisfied Minn. R. 7849.0120(B)(2).

³⁰⁹ *Id.* at 6, 8.

³¹⁰ *Id.* at 10.

³¹¹ *Id.* at 11.

3. Effects of facility on natural and socioeconomic environments compared to reasonable alternatives (Minn. R. 7849.0120(B)(3))

207. Minnesota Rule 7849.0120(B)(3) requires consideration of “the effects of the proposed facility upon the natural and socioeconomic environments compared to the effects of reasonable alternatives.”

208. The Wind Project will have relatively minor pollution impacts. Only approximately 49.5 acres of agricultural land would be permanently impacted by construction and installation of the proposed Project. As an emission-free fuel, wind does not result in releases of CO₂, NO_x, and similar pollutants. Therefore, the DOC-DER concluded that this sub-criterion has been met.³¹²

209. Likewise, the EA and the Wind CN Application contain analysis concerning the human and environmental effects of the Wind Project and demonstrate that the Wind Project compares favorably with other alternatives in the record with respect to this factor.³¹³

210. Thus, Big Bend Wind has satisfied Minn. R. 7849.0120(B)(3).

4. Reliability of facility compared to reasonable alternatives (Minn. R. 7849.0120(B)(4))

211. Minnesota Rule 7849.0120(B)(4) requires consideration of “the expected reliability of the proposed facility compared to the expected reliability of reasonable alternatives.”

212. This sub-factor relates, in part, to Minn. Stat. § 216B.243, subd. 3(9), which requires consideration of “the benefits of enhanced regional reliability, access, or deliverability to the extent these factors improve the robustness of the transmission system or lower costs for electric consumers in Minnesota.”

213. Big Bend Wind estimated that the Wind Project will have an availability of about 97 percent, which it stated is consistent with industry standards.³¹⁴ In addition, Big Bend Wind estimated a net capacity factor of between approximately 41.5 and 43.5 percent, which is within the National Renewable Energy Laboratory’s Utility-Scale Energy Technology Capacity Factors range.³¹⁵

214. Thus, Big Bend Wind has satisfied Minn. R. 7849.0120(B)(4).

5. Conclusion regarding Minn. R. 7849.0120(B)

215. As discussed above, the Applicant has satisfied each of the four sub-factors of Minn. R. 7849.0120(B).

³¹² *Id.*

³¹³ Ex. 107 at 79 (EA); Ex. 314 at 10-12 (BB-CN Application).

³¹⁴ Ex. 805 at 11 (DOC-DER Comments).

³¹⁵ *Id.* at 12; Ex. 332 at 135 (BB-Amended Site Application).

216. No other party submitted a more reasonable and prudent alternative to the proposed Project that satisfies the requirements of Minn. R. 7849.0110 and 7849.0120.

C. The facility will provide benefits compatible with protecting the natural and socioeconomic environments (Minn. R. 7849.0120(C))

217. Minnesota Rule 7849.0120(C) requires that “by a preponderance of the evidence on the record, the proposed facility, or a suitable modification of the facility, will provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including human health.”

218. Applying the factors set forth in Minn. R. 7849.0120(C), the energy produced by the Project will provide significant, numerous, and varied societal benefits, with minimal negative impacts.³¹⁶

1. Relationship of facility to overall state energy needs (Minn. R. 7849.0120(C)(1))

219. Minnesota Rule 7849.0120(C)(1) requires consideration of “the relationship of the proposed facility, or a suitable modification thereof, to overall state energy needs.”

220. A review of the most recently filed IRPs indicates that Minnesotans are expected to have little change in their electricity requirements. However, all three utilities are proposing retirements of large baseload coal units. As a result, over time these and other utilities are planning on adding wind generating capacity. The Wind Project could help Minnesota meet its energy needs while supporting the state’s renewable energy and GHG reduction goals.³¹⁷ DOC-DER concluded that the Wind Project fits the state’s overall energy needs, and the record supports this conclusion.³¹⁸

221. Further, Minn. Stat. § 216B.243, subd. 3(3), requires that the Commission consider the relationship of the proposed facility to overall state energy needs as described in the most recent state energy policy and conservation report prepared under Minn. Stat. § 216C.18 (2020) (the Quadrennial Report).³¹⁹ The Quadrennial Report discusses not only utility efforts to meet RES requirements, but also voluntary green pricing programs. Green pricing programs provide Minnesota ratepayers the option to voluntarily purchase energy from renewable sources to meet all or a portion of their energy requirements. The Quadrennial Report also describes the GHG reduction goals in Minn. Stat. § 216H.02 and the role renewable energy has and continues to play in driving down the carbon intensity of electricity generated in Minnesota. Thus, as a source of competitively priced, no emission, wind energy, the Wind Project is compatible with Minnesota’s energy needs.³²⁰

³¹⁶ Ex. 314 at 11 (BB-CN Application).

³¹⁷ Ex. 805 at 6 (DOC-DER Comments); see *also* Minn. Stat. §§ 216B.1691, 216H.02.

³¹⁸ Ex. 805 at 6 (DOC-DER Comments).

³¹⁹ See Ex. 314 at 11 (BB-CN Application).

³²⁰ *Id.* at 12.

2. Effect of facility on natural and socioeconomic environments (Minn. R. 7849.0120(C)(2))

222. Minnesota Rule 7849.0120(C)(2) requires consideration of “the effects of the proposed facility, or a suitable modification thereof, upon the natural and socioeconomic environments compared to the effects of not building the facility.”

223. Negative impacts to socioeconomic resources will be relatively minor. Only approximately 49.5 acres of agricultural land will be permanently removed from production, and the areas surrounding each turbine will still be able to be farmed. The Wind Project construction will not negatively impact leading industries, and there is no indication that any minority or low-income population is concentrated in any one area of the Wind Project. The Wind Project will not release carbon dioxide, sulfur dioxide, nitrogen oxides, mercury, or particulate matter. It will not require water for power generation and will not discharge wastewater containing any heat or chemicals during operation. It will produce energy without the extraction, processing, transportation, or combustion of fossil fuels.³²¹

224. The Wind Project will permanently impact less than one percent of the total acreage within the Project’s boundaries and will be sited to minimize environmental impacts. The development of wind energy has been and will continue to be important in diversifying and strengthening the economic base of Cottonwood and Watonwan Counties and the region. Local contractors and suppliers will be used for portions of construction. Wages and salaries paid to contractors and workers in Cottonwood and Watonwan Counties and the region will contribute to the total personal income of the region. At least part of the wages paid to temporary and permanent Project workers will be circulated and recirculated within the county and the state. Expenditures made by Big Bend Wind for equipment, fuel, operating supplies, and other products and services will benefit businesses in the county and the state.³²²

225. Landowners with turbines or other Wind Project facilities on their land will receive annual lease payments anticipated to total approximately \$70 million over the life of the Project, and these payments will diversify and strengthen the local economy. Long-term benefits to the counties’ tax base because of the construction and operation of the Project will contribute to improving the local economy. For example, the Project will pay a Wind Energy Production Tax to the local units of government of \$0.0012 per kWh of electricity produced, potentially resulting in an annual Wind Energy Production Tax of approximately \$35.7 million over the life of the Wind Project. Not building an electrical generation facility would result in no physical impact to the environment in Cottonwood and Watonwan Counties. However, not building the Wind Project would also not provide an additional source of tax revenues to the county, an increase in the income stream to residences and businesses, or an increase in the amount of low-cost, clean, reliable renewable energy available to state or regional utilities and their

³²¹ *Id.*

³²² *Id.*

customers. In sum, the Wind Project will have a minimal impact on the physical environment, while simultaneously providing significant benefits.³²³

3. Effects of facility in inducing future development (Minn. R. 7849.0120C(3))

226. Minnesota Rule 7849.0120(C)(3) requires consideration of “the effects of the proposed facility, or a suitable modification thereof, in inducing future development.”

227. The Wind Project is not expected to directly affect development in Cottonwood or Watonwan Counties. The area is largely rural, with small communities such as Butterfield, Mountain Lake, Bingham Lake, Windom, Jeffers, Comfrey, Darfur, and others. Additional wind energy infrastructure in the Project area, however, may nonetheless provide significant benefits to the local economy and local landowners. As discussed previously, landowners and local governments will experience economic benefits from the Wind Project. In addition, the Wind Project will provide significant income opportunities for local residents not affiliated with Wind Project ownership. The Wind Project is anticipated to generate approximately 316 construction jobs and up to 14 permanent O&M positions. In addition, the development of wind energy in Minnesota reduces dependence on turbulent fossil fuel markets and helps keep energy dollars in Minnesota.³²⁴

4. Socially beneficial uses of facility output (Minn. R. 7849.0120(C)(4))

228. Minnesota Rule 7849.0120(C)(4) requires consideration of “the socially beneficial uses of the output of the proposed facility, or a suitable modification thereof, including its uses to protect or enhance environmental quality.”

229. This sub-factor relates to Minn. Stat. § 216B.243, subd. 3(5), which, in relevant part, requires the Commission to consider the “benefits of this facility, including its uses to protect or enhance environmental quality.”

230. The record demonstrates that energy produced by the Wind Project will provide significant, numerous, and varied societal benefits, as discussed previously, including, providing renewable energy with minimal environmental impact; enhancement of regional and national energy security and reliability; and a supplementary source of income for landowners.³²⁵

231. Thus, Big Bend Wind has satisfied Minn. R. 7849.0120(C)(4).

³²³ *Id.* at 12-13.

³²⁴ *Id.* at 7-8.

³²⁵ *Id.* at 7.

D. Whether the facility will comply with relevant policies, rules, and regulations (Minn. R. 7849.0120(D))

232. Minnesota Rule 7849.0120(D) requires that “the record does not demonstrate that the design, construction, or operation of the proposed facility, or a suitable modification of the facility, will fail to comply with relevant policies, rules, and regulations of other state and federal agencies and local governments.”

233. This factor relates to Minn. Stat. § 216B.243, subd. 3(7), which requires the Commission, in assessing need, to consider “the policies, rules, and regulations of other state and federal agencies and local governments.”

234. The Wind Project would meet or exceed the requirements of all federal, state, and local environmental laws and regulations. Big Bend Wind provided a table listing the potential permits and approvals needed for the Wind Project. DOC-DER indicated that it has no reason to believe that Big Bend Wind will fail to comply with the requirements of the listed federal, state, and local governmental agencies. DOC-DER concluded that the record does not demonstrate that the design, construction, or operation of the Wind Project, or a suitable modification of the facilities, will fail to comply with relevant policies, rules, and regulations of other state and federal agencies and local governments, and the record supports this conclusion.³²⁶

235. Based on the foregoing, Big Bend Wind has satisfied Minn. R. 7849.0120(D).

236. As discussed in detail above, Big Bend Wind has satisfied each of the relevant factors and sub-factors set forth in Minn. R. 7849.0120(A) through (D) necessary to determine that a Certificate of Need must be granted.

III. Other Applicable Statutory Considerations

237. As explained by DOC-DER in its comments, there are two applicable Minnesota statutes which provide a preference for renewable resources in resource planning and acquisition decisions.³²⁷ Minnesota law indicates a clear preference for renewable facilities, and the proposed Project is consistent with that preference.³²⁸

238. Further, Minn. Stat. §§ 216B.2426, .169, subd. 1(c), provide for the consideration of distributed generation. As noted by DOC-DER, no proposals for distributed generation as an alternative to the Wind Project have been filed in this proceeding, and DOC-DER stated that the requirement to consider distributed generation had been met.³²⁹

³²⁶ Ex. 805 at 14 (DOC-DER Comments).

³²⁷ *Id.* at 8-9 (citing Minn. Stat. §§ 216B.243, subd. 3a, .2422, subd. 4).

³²⁸ *Id.*

³²⁹ *Id.* at 12.

Big Bend Wind Site Permit

I. Wind Site Permit Criteria

239. Wind energy projects are governed by Minnesota Statutes, chapter 216F and Minnesota Rules, chapter 7854. Minn. Stat. § 216F.01, subd. 2, defines a “large wind energy conversion system” as a combination of wind energy conversion systems with a combined nameplate capacity of five MW or more. 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.” Similarly, the Commission must determine that an LWECS is “compatible with environmental preservation, sustainable development, and the efficient use of resources.”³³⁰

240. In addition, when deciding whether to issue a site permit for a LWECS, the Commission considers the factors set forth in Minn. Stat. § 216E.03, subd. 7(b), which specifies, in relevant part, that the Commission “shall be guided by, but not limited to, the following considerations:

- (1) 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;
- (2) environmental evaluation of sites . . . proposed for future development and expansion and their relationship to the land, water, air and human resources of the state;
- (3) evaluation of the effects of new electric power generation . . . systems related to power plants designed to minimize adverse environmental effects;
- (4) evaluation of the potential for beneficial uses of waste energy from proposed large electric power generating plants;
- (5) analysis of the direct and indirect economic impact of proposed sites . . . including, but not limited to, productive agricultural land lost or impaired;

³³⁰ Minn. R. 7854.1000, subp. 3.

(6) evaluation of adverse direct and indirect environmental effects that cannot be avoided should the proposed site . . . be accepted;

(7) evaluation of alternatives to the applicant's proposed site . . . ;

. . . .

(9) evaluation of governmental survey lines and other natural division lines of agricultural land so as to minimize interference with agricultural operations;

. . . .

(11) evaluation of irreversible and irretrievable commitments of resources should the proposed site . . . be approved; and

(12) when appropriate, consideration of problems raised by other state and federal agencies and local entities.”³³¹

241. The Commission must also consider whether the applicant has complied with all applicable procedural requirements.³³²

242. The Commission’s rules require the applicant to provide information regarding any potential impacts of the proposed Project, potential mitigation measures, and any adverse environmental effects that cannot be avoided as part of the application process.³³³ No separate environmental review document is required for a LWECS project.³³⁴

II. Application of Wind Site Permit Criteria to the Wind Project

243. DOC-EERA reviewed the possible mitigation measures outlined in Big Bend Wind’s site permit application and site permit conditions for compatibility with environmental preservation, sustainable development, and the efficient use of natural resources.³³⁵

³³¹ Minn. Stat. § 216E.03, subd. 7(b). Considerations (8) and (10) are omitted because they pertain only to proposed routes of high voltage transmission lines.

³³² Minn. R. 7854.1000, subp. 3.

³³³ Minn. R. 7854.0500, subp. 7.

³³⁴ *Id.* (“The analysis of the environmental impacts required by this subpart satisfies the environmental review requirements of chapter 4410, parts 7849.1000 to 7849.2100, and Minnesota Statutes, chapter 116D. No environmental assessment worksheet or environmental impact statement shall be required on a proposed LWECS project.”).

³³⁵ Ex. 107 at 367-81 (EA).

A. Demographics

244. The Wind Project is located in southwestern Minnesota in a rural agricultural region in Cottonwood and Watonwan Counties. These two counties in the Project Area have very small populations compared to the State of Minnesota as a whole, comprising less than one percent of the state's total population.³³⁶

245. The top three industries of employment in the counties and townships within the Project Area vary slightly from the state level, with manufacturing playing a larger role in both Cottonwood and Watonwan Counties (20.0 percent and 22.7 percent, respectively). Employment in the retail trade industry in Cottonwood and Watonwan Counties is similar to the state level.³³⁷

246. The Wind Project and its construction will not displace residents or buildings, and is expected to have minimal, temporary to long-term impact on the demographics of the Project Area.³³⁸ In Watonwan County the percentage of total minority residents is higher than the state level of 20.9 percent at 29.6 percent. There is no indication that the wind turbines will be placed in an area occupied primarily by any minority or low-income population.³³⁹

B. Noise

247. Large electric generation facilities produce sound. Sound has multiple characteristics which determine whether a sound is too loud or otherwise inappropriate. Sound travels in a wave motion and produces a sound pressure level. This sound pressure level is commonly measured in decibels (dB) on a logarithmic scale. It may be made up of a variety of sounds of different magnitudes, across the entire frequency spectrum. The human ear is not equally sensitive to sound at all frequencies and magnitudes. Some frequencies, despite being the same dB level (that is magnitude), seem louder than others. For example, a 500 hertz (Hz) tone at 80 dB will sound louder than a 63 Hz tone at the same level. In addition, the relative loudness of these tones will change with magnitude. For example, the perceived difference in loudness between those two tones is less when both are at 110 dB than when they are at 40 dB.³⁴⁰

248. To account for the difference in the perceived loudness of a sound by frequency and magnitude, acousticians apply frequency weightings to sound levels. The most common weighting scale used in environmental noise analysis is the "A-weighting," which represents the sensitivity of the human ear at low to moderate sound pressure levels. The A-weighting is the most appropriate weighting when overall sound pressure levels are relatively low (up to about 70 dBA). The A-weighting

³³⁶ Ex. 332 at 27 (BB-Amended Site Application).

³³⁷ *Id.* at 28.

³³⁸ *Id.* at 30.

³³⁹ *Id.* at 28-29, 31.

³⁴⁰ *Id.* at 36.

de-emphasizes sounds at lower and very high frequencies, since the human ear is less sensitive to sound at these frequencies at low magnitude.³⁴¹

249. The A-weighting is the most appropriate weighting for wind turbine sound for two reasons. The first is that sound pressure levels due to wind turbine sound are typically in the appropriate range for the A-weighting at typical receiver distances (50 dBA or less). The second is that various studies of wind turbine acoustics have shown that the potential effects of wind turbine noise on people are correlated with A-weighted sound level as well as to the perceived loudness of wind turbine sound.³⁴²

250. Under Minn. Stat. § 116.07, subd. 2(c) (2020), noise standards are promulgated by the MPCA and are designed to ensure public health and minimize citizen exposure to inappropriate sounds. The MPCA's noise standards are found in Minn. R ch. 7030. The MPCA standards require A-weighted noise measurements. Different standards are specified for daytime (7:00 a.m. – 10:00 p.m.) and nighttime (10:00 p.m.– 7:00 a.m.) hours. The noise standards specify the maximum allowable sound levels that may not be exceeded for more than 10 percent of an hour (L10) and 50 percent of an hour (L50), respectively. Household units, including farmhouses, are included in Land Use Noise Area Classification (NAC) 1.³⁴³

251. Big Bend Wind proposes siting turbines at least 1,200 feet from residences plus the distance required to comply with the MPCA limit of a 50 dBA nighttime L50 noise level, if necessary (L50 is the median noise level or the level exceeded 50 percent of the time) (MPCA, 2015). The closest turbine to a non-participant residence is 2,380 feet, and the closest turbine to a participating residence is 1,367 feet.³⁴⁴

252. Big Bend Wind conducted background sound level monitoring throughout the Wind Project Area to quantify the existing sound levels and to identify existing sources of sound.³⁴⁵ Daytime sound levels throughout the Wind Project Area generally ranged from 36 to 40 dBA for 50 percent of the daytime (L50), while nighttime sound levels were generally between 31 and 36 dBA (L50). The average daytime L50 across the Wind Project Area was 38 dBA, and the average nighttime L50 across the Wind Project Area was 33 dBA.³⁴⁶

253. Big Bend Wind incorporated the monitoring data with turbine sound modeling using the Computer Aided Design for Noise Abatement (Cadna-A) software program to determine the sound levels at receptors within one mile of the Wind Project Area.³⁴⁷ The analysis accounted for all noise generating elements associated with the proposed wind turbine models and layout for the Wind Project. All proposed wind

³⁴¹ *Id.*

³⁴² *Id.*

³⁴³ *Id.* at 37.

³⁴⁴ *Id.* at 38.

³⁴⁵ *Id.* at 36.

³⁴⁶ *Id.*

³⁴⁷ *Id.* at 38.

turbines were modeled in Cadna-A and Wind Project-related noise levels were calculated at 970 noise-sensitive receptors within the Wind Project Area and a buffer of approximately one mile.³⁴⁸

254. Maximum calculated sound levels at all residential receptors for all turbine models are below the nighttime L50 noise limit of 50 dBA. The maximum calculated sound level, based on assumptions incorporated into the Cadna-A model and the turbine layout, results in a 47 dBA L50 at the nearest noise-sensitive receptor (maximum Project-related L50 range from 45 to 47 dBA). All turbine models and layouts comply with MPCA noise guidelines at residential receptors.³⁴⁹ Likewise, the Draft Site Permit contains a condition requiring the Project to comply with MPCA noise standards.³⁵⁰

C. Visual impacts

255. The Wind Project will introduce wind turbines and associated facilities to the landscape and have the potential to alter the existing visual resources. Additionally, during construction, visual resources may be interrupted by construction equipment and increased vehicle traffic. Big Bend Wind analyzed potential impacts to visual resources, including public resources, private land, and shadow flicker.³⁵¹

256. Viewsheds in this area are generally broad and uninterrupted, with only small, scattered areas where they are interrupted by trees or topography. The settlements in the vicinity are residences and farm buildings (inhabited and uninhabited farmsteads) scattered along rural county roads. The area is also shaped by a built environment. Vertical elements such as wind turbines are visible from considerable distances and are the tallest and often the most dominant visual feature on the landscape. Additionally, numerous electrical distribution lines parallel some unpaved and paved roads that contribute to the existing visual elements.³⁵²

257. The Project will be located within the viewshed of MNDNR-managed Wildlife Management Areas (WMAs), USFWS Waterfowl Production Areas, lands owned by The Nature Conservancy, and the Jeffers Site, as well as other natural areas and may be visible by people using those areas.³⁵³

258. Visual impacts on public resources during construction will be dependent on the construction activity and proximity to the public resource. For example, site clearing, and grading would be visible from public resources adjacent to the Wind Project Area or within one to two miles of the Project's footprint. Other activities, such as

³⁴⁸ *Id.*

³⁴⁹ *Id.* at 39.

³⁵⁰ Ex. 107 at Appx. B, § 4.3 (EA).

³⁵¹ Ex. 332 at 40 (BB-Amended Site Application).

³⁵² *Id.*

³⁵³ *Id.* at 43.

turbine erection, would be visible from longer distances due to the height of the crane and towers.³⁵⁴

259. During operation, the wind turbines will impact the visual surroundings of the Project Area and vicinity, but the degree of the visual and unavoidable impact on public resources will vary based on the distance from the Project, obstructions such as trees between the public resource and the Project, a viewer's orientation to the Project (i.e., facing towards or away), and the viewer's personal preferences.³⁵⁵

260. Impacts to the Jeffers Site have been mitigated through modifications to the Wind Project's layout, as described in Section II(E) herein. The Commission must consult with the State Historic Preservation Office (SHPO) as required under Minn. Stat. § 138.665 (2020) to determine if appropriate avoidance or mitigation of adverse impacts to the Jeffers Petroglyphs Site has been accomplished through the Settlement Agreement and the amended turbine layout to be permitted.

261. Residences with turbines and associated infrastructure closest to their homes are those that are participating in the Wind Project by signing easements. The closest turbine to a non-participant residence is 2,380, and the closest turbine to a participating residence is 1,367 feet.³⁵⁶

262. As part of the Settlement Agreement, Big Bend Wind agreed to utilize an ADLS for the Wind Project, in coordination with the FAA and in compliance with applicable requirements.³⁵⁷ The use of ADLS lighting will further minimize potential visual impacts from the Wind Project.³⁵⁸

263. The Wind Project Substation may be visible to those residents that live within one mile of this facility. The Wind Project Substation will be lower profile than the wind turbines. Access roads have been designed to provide direct access from the public road to the turbine and minimize impacts to the agricultural fields. Where possible, the access roads follow field edges. To the extent possible, Big Bend Wind has collocated linear facilities (access roads, crane paths, and collection lines) to minimize visual impacts.³⁵⁹

1. Shadow flicker

264. Shadow flicker caused by wind turbines is defined as alternating changes in light intensity at a given stationary location (or receptor), such as the window of a home. In order for shadow flicker to occur, three conditions must be met: (1) the sun must be shining with no clouds to obscure it; (2) the rotor blades must be spinning and must be located between the receptor and the sun; and (3) the receptor must be sufficiently close to the turbine to be able to distinguish a shadow created by it

³⁵⁴ *Id.*

³⁵⁵ *Id.*

³⁵⁶ *Id.* at 44.

³⁵⁷ Ex. 331 at 4 (Settlement Agreement).

³⁵⁸ Ex. 332 at 44-45 (BB-Amended Site Application).

³⁵⁹ *Id.* at 44.

(generally 1500 feet because the shadow, at this distance, is sufficiently diffused that it is not seen as a solid obstruction).³⁶⁰

265. Currently, shadow flicker impacts are not regulated by state and federal law.³⁶¹

266. Shadow flicker frequency calculations for the Wind Project were modeled for 970 residences (receptors) with WindPRO based on all turbines in each layout. These receptors are those within the Wind Project Area and one-mile buffer that could receive shadow flicker.³⁶²

267. All non-participating residences are expected to experience below 30 hours per year of shadow flicker.³⁶³ 20 participating residences are anticipated to experience more than 30 hours per year of shadow flicker, and Big Bend Wind has conducted outreach to these landowners to obtain shadow flicker agreements. Big Bend Wind has obtained 15 agreements and is continuing to coordinate with the remaining five landowners.³⁶⁴

268. Based on the results of the Wind Project's shadow flicker modeling, no specific mitigation is currently proposed. To the extent that a residence experiences inordinately more flicker than anticipated by modeling during Wind Project operation, mitigation would be addressed at that time.³⁶⁵

D. Public service and infrastructure

269. The Wind Project is located in a sparsely populated and predominantly rural and agricultural area in south-central Minnesota. Public services in the area include emergency services; utilities; roads and railroads; communication systems, television service; cell towers; and broadband services.³⁶⁶

270. *Emergency services.* Construction and operation of the Wind Project is not expected to impact the availability of emergency services. Big Bend Wind will coordinate with emergency services providers to determine appropriate safety precautions and standards and develop measures to address these precautions and standards.³⁶⁷

271. *Utility infrastructure.* The Wind Project is sited to avoid impacts to existing utility infrastructure. All turbines are sited at least 1.1 times the turbine tip height from

³⁶⁰ *Id.* at 45.

³⁶¹ *Id.* at 46.

³⁶² *Id.*

³⁶³ *Id.*

³⁶⁴ Ex. 337 at 2 (Ikkala Surrebuttal).

³⁶⁵ Ex. 332 at 49 (BB-Amended Site Application).

³⁶⁶ *Id.*

³⁶⁷ Ex. 107 at 281 (EA).

existing utilities and public infrastructure to avoid potential impacts to existing infrastructure.³⁶⁸

272. *Roads and railroads.* An established network of county and township roads exists in the Wind Project Area. Construction activities will increase the amount of traffic using local roadways, and may temporarily affect traffic numbers in the area, but such use is not anticipated to result in adverse traffic impacts. Big Bend Wind is currently coordinating with Cottonwood and Watonwan Counties and the townships within the Wind Project Area on the development and execution of a single, cooperative Development, Road Use, and Drainage Agreement to minimize and mitigate impacts on existing roadways.³⁶⁹

273. *Communication systems.* Because of their height, modern wind turbines have the potential to interfere with existing communications systems licensed to operate in the United States. The required separation distance based on the characteristics of the communication systems varies depending on the type of communication antennas that are installed on the tower. Wind Project turbines are sited at least 535 meters (1,755 feet) from a communication tower. With this distance, impacts to communication systems are not anticipated.³⁷⁰ Specifically, Big Bend Wind has determined that there are no impacts, or sufficient mitigation, as to the following:

- AM and FM radio;
- Microwave beam paths;
- Telephone service;
- GPS; and
- Wireless broadband internet.³⁷¹

274. Big Bend Wind will address any post-construction television interference concerns on a case-by-case basis.³⁷² Further, Section 5.3.17 of the Draft Site Permit provides that a project may not be operated

so as to cause microwave, television, radio, telecommunications, or navigation interference in violation of Federal Communications Commission (FCC) regulations or other law. In the event the project or its operations cause such interference, the Permittee shall take timely measures necessary to correct the problem.³⁷³

³⁶⁸ *Id.* at 317-18; Ex 332 at 50 (BB-Amended Site Application).

³⁶⁹ Ex. 332 at 51-53 (BB-Amended Site Application).

³⁷⁰ *Id.* at 54.

³⁷¹ *Id.* at 54, 56.

³⁷² *Id.* at 55.

³⁷³ Ex. 107 at Appx. B, § 5.3.17 (EA).

E. Cultural and archaeological resources

1. Jeffers Site

275. The Wind Project layout also considers the input the Tribes and MNHS provided during early and ongoing consultation and includes a buffer of at least 6.5-miles between the Jeffers Site and the nearest turbine.³⁷⁴

276. The Jeffers Site is a historic location within Minnesota's statutorily defined Historic Site Network that is managed by MNHS and is listed in the National Register of Historic Places. The Jeffers Site is home to about 5,000 sacred rock carvings, also called petroglyphs, made by the ancestors of today's Native Americans approximately 7,000 years ago. The 160-acre Jeffers Site is characterized by rock outcrops on which the petroglyphs are located, surrounded by native prairie. Surrounding the Jeffers Site is the Red Rock Ridge, which is a discontinuous ridge of Sioux quartzite outcrops.³⁷⁵ The Jeffers Site is an important space for spiritual and cultural practices for Tribes in Minnesota and beyond.³⁷⁶

277. Specifically, based on feedback received during initial consultation with SHPO, Big Bend Wind conducted additional voluntary coordination with the MNHS, interested Tribes, and other stakeholders concerning the proximity of the Wind Project to the Jeffers Site. Over the course of years, Big Bend Wind modified the design and layout of the Wind Project trying to resolve concerns about potential impacts on the Jeffers Site. A detailed history of this coordination is provided in Section 8.7.2 of the Amended Site Permit Application. At the time the initial applications were filed, there remained disagreement and concern regarding potential impacts to the Jeffers Site, particularly from MNHS, Upper Sioux, and Lower Sioux.³⁷⁷

278. On August 10, 2021, Big Bend Wind representatives were invited to meet with representatives of Intervenor MNHS, the Upper Sioux, and Lower Sioux at the Jeffers Site to discuss modifications to the Wind Project layout that would address concerns regarding potential impacts to the Jeffers Site. The outcome of this consultation was a Settlement Agreement under which Big Bend Wind revised the permit application layout, removing the eight turbines located in the zone between 5 and 6.5 miles from the Jeffers Site and replacing some of the lost generation by siting six alternatives at new locations within the Wind Project Area that are farther than 7 miles from viewpoints on the Jeffers Site (Alternative Locations). Additionally, Big Bend Wind shall remove Turbines T19 and T20 located in the zone between 6.5 and 7 miles from the Jeffers Site, if the Commission approves Alternative Locations to replace them.³⁷⁸ To clarify the revised layout, the Settlement Agreement sets out three hypotheticals:

³⁷⁴ Ex. 332 at 65 (BB-Amended Site Application).

³⁷⁵ *Id.* at 8-9.

³⁷⁶ Ex. 603 at 2 (Larsen Direct).

³⁷⁷ Ex. 332 at 59-63 (BB-Amended Site Application).

³⁷⁸ *Id.* at 10, 63.

i. If the Commission grants a LWECS Site Permit authorizing construction of only one of the Alternative Locations identified ..., Big Bend will construct the wind turbine shown ... as T19 but not construct T20 and may construct a wind turbine on the authorized Alternative Location.

ii. If the Commission grants a LWECS Site Permit authorizing construction of only two of the Alternative Locations identified ... Big Bend will not construct either of the wind turbines shown ... as T19 and T20 and may construct wind turbines on the two authorized Alternative Locations.

iii. If the Commission grants a LWECS Site Permit authorizing construction of three or more of the Alternative Locations identified ... Big Bend will not construct either of the wind turbines shown ... as T19 and T20 and may construct wind turbines on all three or more of the authorized Alternative Locations.³⁷⁹

279. The Settlement Agreement further provides that if either or both of the turbines shown as T19 and T20 must be constructed, then Bid Bend Wind will use good faith efforts to minimize impact to the viewshed from the Jeffers Site.³⁸⁰ Big Bend Wind also agreed to use good faith efforts to position turbines shown as T24 and T25 within their respective buildable areas to minimize impact to the viewshed from the Jeffers Site.³⁸¹

280. The Parties each filed written testimony in support of the Settlement Agreement, explaining that the revised layout reflected in the Settlement Agreement “significantly reduces the impact to the viewshed” from the Jeffers Site.³⁸²

281. Thus, Big Bend Wind has mitigated long-term visual impacts on the Jeffers Site through reducing the numbers of turbines from 64 to 52, increasing the buffer between Wind Project turbines and the Jeffers Site from approximately 2.4 miles to at least 6.5 miles, and proposing the use of ADLS to reduce visual impacts on the night sky. In addition, in response to comments received through early coordination, Big Bend Wind has eliminated potential shadow flicker, noise, and vibration impacts to the Jeffers Site.³⁸³

2. Other cultural and archaeological resources

282. In addition to analysis and coordination regarding the Jeffers Site, Big Bend Wind undertook further analysis and survey concerning archaeological and

³⁷⁹ Ex. 331 at 2-3 (Settlement Agreement).

³⁸⁰ *Id.* at 3.

³⁸¹ *Id.*

³⁸² Ex. 603 at 5 (Larsen Direct); *see also* Ex. 700 (Savariego Direct); Ex. 500 (Maijala Direct).

³⁸³ Ex. 332 at 67 (BB-Amended Site Application).

historic resources. A Phase 1a literature review was conducted, and a Phase I survey was later conducted in coordination with SHPO and interested Tribes.³⁸⁴

283. During the literature review, one previously recorded archaeological site, eight previously recorded historic architectural resources, and one historic railroad were identified within the Wind Project Area. Of the eight previously recorded historic architectural resources within the Wind Project Area, seven are bridges and one is a farmstead. Six of the seven historic bridges have undergone National Register of Historic Places (NRHP) evaluation and were determined to be not eligible for listing. The remaining bridge and the previously recorded farmstead have not been evaluated for listing in the NRHP. The historic railroad is the St. Paul & North Pacific Railroad; this railroad is listed in the NRHP. The archaeological site has not been evaluated for listing on the NRHP.³⁸⁵

284. The background literature review also identified 91 previously recorded historic architectural resources and three archaeological sites within 1.5 miles of the Wind Project Area. These include 21 farmsteads, 44 residences, two banks, one bandshell, two bridges, five churches, seven commercial buildings, one gazebo, one grain elevator, one highway, one hotel, two municipal buildings, two schools, and Heritage Village. Most of the historic architectural resources are within the cities of Mountain Lake and Delft.³⁸⁶

285. Field surveys were conducted in 2019, with additional surveys conducted in 2020 and 2021 for the Wind Project layout identified in the Amended Application.³⁸⁷

286. Information regarding the location of previously documented cultural resources sites was taken into consideration during initial Wind Project design. Big Bend Wind has designed the Wind Project to avoid directly impacting all previously recorded NRHP listed, eligible, or unevaluated archaeological and historic architectural resources either by Project alteration or structure placement. Therefore, no direct impacts on previously documented archaeological or historic architectural resources would occur as a result of the Project.³⁸⁸

287. In addition, Section 5.3.16 of the Draft Site Permit requires Big Bend Wind to “make every effort to avoid impacts to identified archaeological and historic resources.”³⁸⁹ Big Bend Wind also developed an Unanticipated Discoveries Plan in coordination with interested Tribes.³⁹⁰

³⁸⁴ *Id.* at 58, 60.

³⁸⁵ *Id.* at 58-59.

³⁸⁶ *Id.* at 59.

³⁸⁷ *Id.* at 61-63.

³⁸⁸ *Id.* at 65.

³⁸⁹ Ex. 107 at Appx. B, § 5.3.16 (EA).

³⁹⁰ Ex. 332 at 62 (BB-Amended Site Application).

F. Recreational resources

288. Recreational opportunities near the Wind Project Area include hiking, biking, boating, fishing, camping, swimming, snowmobiling, hunting, golfing, and nature viewing.³⁹¹

289. There are no National Wildlife Refuges or state parks within 10 miles of the Wind Project Area.³⁹²

290. While there are several recreation lands within 10 miles of the Wind Project Area, only the Long Lake AMA is within the Wind Project Area and the access road to the Mountain Lake WMA is partially within the Wind Project Area. Big Bend Wind has sited turbines at least three RD by five RD from the AMA and WMA. The nearest turbine to the AMA is approximately 0.9 miles to the west; therefore, no impacts on public use of the AMA would occur. A collection line and crane path would cross the access road to the Mountain Lake WMA, just south of County Road 9. Temporary interruptions to public access to the WMA may occur during the period of active construction; however, such interruptions would be temporary and would resolve after construction is complete.³⁹³

291. There are three public water access sites within the Wind Project Area: two associated with Butterfield Lake and one associated with Eagle Lake.³⁹⁴ There are no state trails within 10 miles of the Wind Project Area.³⁹⁵

292. There are two snowmobile trails within the Wind Project Area: The Cottonwood and Jackson County Snowmobile Trail, and the Riverside Trail.³⁹⁶

293. The Mountain Lake Golf Course is immediately adjacent to the southern Wind Project boundary, on the southwest side of Mountain Lake.³⁹⁷

294. Construction and operation of the Wind Project is not anticipated to affect public access to or enjoyment of nearby recreational opportunities. Impacts to recreation would mostly be related to Wind Project construction, which will be minimal, temporary, and isolated to specific areas throughout the Wind Project Area.³⁹⁸

³⁹¹ *Id.* at 68.

³⁹² *Id.*

³⁹³ *Id.* at 71-72.

³⁹⁴ *Id.* at 71.

³⁹⁵ *Id.*

³⁹⁶ *Id.*

³⁹⁷ *Id.*

³⁹⁸ *Id.*

G. Public health and safety

1. Air traffic

295. There is one public airport and one private heliport within 10 miles of the Wind Project Area. The nearest airport is the Windom Municipal Airport, located approximately 4.6 miles southwest of the Wind Project. The St. James Medical Center, located approximately 7.8 miles east of the Wind Project Area, has a private heliport for patient transport. Air traffic may also be present near the Wind Project Area for crop dusting of agricultural fields. Crop dusting is typically carried out during the day by highly maneuverable airplanes or helicopters. In addition to public and private airports and crop dusting, air space is also used by the military. Big Bend Wind coordinated with the Air National Guard and U.S. Air Force on the presence of military training routes in the Project vicinity.³⁹⁹

296. Turbines have been sited to avoid any impacts to restricted airspace. Big Bend Wind will also notify local airports about the Wind Project including locations of new towers in the area to minimize impacts and reduce potential risks to crop dusters.⁴⁰⁰

297. In a written comment, Elvin Thiessen identified a private airstrip outside of the Wind Project boundary in section 19 of Butterfield Township. Big Bend Wind stated that it has coordinated with Mr. Thiessen regarding his airstrip, and the location of the airstrip informed the siting of turbines in the vicinity. Big Bend Wind has had additional coordination with Mr. Thiessen to identify specific turbine locations in relation to his airstrip to confirm that the turbine locations with respect to the orientation of the airstrip will allow for its continued use.⁴⁰¹

298. Turbines over 500 feet tall have a lengthier review timeline, but regardless of turbine height, the FAA approval is a “Determination of No Hazard.” Further, Big Bend Wind will appropriately mark and light the turbines to comply with FAA requirements and is coordinating with the FAA on implementing an ADLS. The permanent and performance testing meteorological towers will be freestanding with no guy wires. The existing temporary meteorological towers have supporting guy wires which are marked with alternating red and white paint at the top and colored marking balls on guy wires for increased visibility.⁴⁰²

299. In 2020, the Air National Guard Readiness Center initially identified an issue with turbine A06 because of a military training route. However, in October 2021, after further inquiry, and in coordination with the Lower Sioux, Big Bend Wind was informed that the military training route had been deleted in 2015.⁴⁰³

³⁹⁹ *Id.* at 75.

⁴⁰⁰ *Id.* at 75-76.

⁴⁰¹ Ex. 329 at 4 (Scoping Reply Comments).

⁴⁰² Ex. 332 at 76 (BB-Amended Site Application).

⁴⁰³ Ex. 337 at 2 (Ikkala Surrebuttal).

2. Electromagnetic fields

300. The term electromagnetic field (EMF) refers to electric and magnetic fields that are present around any electrical device. Electric fields arise from the voltage or electrical charges, and magnetic fields arise from the flow of electricity or current that travels along transmission lines, within the nacelle of operating wind turbines, power collection (feeder) lines, substation transformers, house wiring, and electrical appliances.⁴⁰⁴

301. Levels of EMF from the Wind Project will be considerably below accepted guidelines. No impacts due to EMF or stray voltage are anticipated and no mitigation is proposed.⁴⁰⁵

3. Security and traffic

302. During the construction phase, temporary impacts are anticipated on some public roads within the Wind Project Area. Roads will be affected by the transportation of equipment to and from the Wind Project Area between Wind Project facilities. Some roads may also be expanded along specific routes as necessary to facilitate the movement of equipment.⁴⁰⁶

303. Big Bend Wind is currently coordinating with Cottonwood and Watonwan Counties and the townships within the Wind Project Area on the development and execution of a single, cooperative Development, Road Use, and Drainage Agreement to minimize and mitigate impacts on existing roadways. Big Bend Wind will ensure that the general contractor communicates with the road authorities throughout the construction process, particularly regarding the movement of equipment on roads and the terms of the development agreement. If roadways are impacted by the use of heavy construction equipment (e.g., potholes, rutting), they will be restored per the Development, Road Use, and Drainage Agreement. Additional operating permits will be obtained for oversized truck movements. Further, Big Bend Wind has mitigated impacts to existing roadways from operation of the Project by siting wind turbines with a setback of at least 1.1 times the total turbine height from all public roads, which exceeds the Commission standard of a 250-foot setback.⁴⁰⁷

H. Hazardous materials

304. The Wind Project was designed to avoid known contaminated sites and will therefore not impact them during construction. To avoid spill-related impacts during construction, Big Bend Wind will develop a Spill Prevention, Control, and Countermeasures Plan that will outline measures to be implemented to prevent

⁴⁰⁴ Ex. 332 at 73 (BB-Amended Site Application).

⁴⁰⁵ *Id.* at 73, 75.

⁴⁰⁶ *Id.* at 52.

⁴⁰⁷ *Id.* at 53.

accidental releases of fuels and other hazardous substances and describe the required response, containment, and cleanup procedures to be used in the event of a spill.⁴⁰⁸

I. Land-based economics

305. Big Bend Wind has also analyzed the potential for the Wind Project to affect land-based economies of agriculture, forestry, and mining operations.⁴⁰⁹

1. Agriculture

306. The majority of the Wind Project Area is in agricultural use. Cultivated land comprises approximately 40,235.2 acres (approximately 92.5 percent) of the Project Area. Pasture/hay lands comprise approximately 435.6 acres (one percent) of the Project Area.⁴¹⁰

307. Agricultural land will be taken out of production where the turbines and access roads are sited (approximately 0.5 to 1 acre per turbine). Additionally, land will also be removed from agricultural production for the collector substations and O&M facility, which together will cover approximately 8.3 acres. Landowners may continue to plant crops near and up to the turbine pads and access roads. In some instances, agricultural practices will be impacted by requiring new maneuvering routes around the turbine structures for agricultural equipment. The collector substations and O&M facility will be fenced, but agricultural production will be allowed to continue beyond the fenced area. Agricultural land taken out of production for access roads will be a permanent loss and agricultural production will not be allowed to continue within the footprint of access roads. Access roads are designed so that they do not unnecessarily impede agricultural production beyond the footprint of the access road.⁴¹¹

308. Less than one percent of the Wind Project Area will be converted to non-agricultural land use (i.e., wind turbines, access roads, collector substations, and O&M facility). This represents an unavoidable impact to agricultural land in the Wind Project Area boundary but will not significantly alter agricultural production in the Wind Project Area.⁴¹²

309. The Draft Site Permit includes multiple provisions related to agriculture. First, Section 5.3.5 requires Big Bend Wind to implement measures to protect and segregate topsoil from subsoil on all lands unless otherwise negotiated with landowners. Second, Section 5.3.18 requires Big Bend Wind to take precautions to protect livestock during all phases of the Project's life. Third, Section 5.3.20 requires Big Bend Wind to take into account, avoid, and promptly repair or replace all drainage tiles

⁴⁰⁸ *Id.* at 77.

⁴⁰⁹ *Id.* at 78.

⁴¹⁰ *Id.*

⁴¹¹ *Id.* at 79-80.

⁴¹² *Id.* at 80.

broken or damaged during all phases of the Project's life unless otherwise negotiated with affected landowners.⁴¹³

310. The presence of the Wind Project will not significantly impact the agricultural land use or general character of the area. As demonstrated by other wind energy projects in the Midwest, agricultural practices continue during construction and operations.⁴¹⁴

2. Forestry

311. No impacts to forestry resources would occur from construction or operation of the Wind Project.⁴¹⁵

3. Mining

312. There are no mining operations within the Wind Project Area and, as such, impacts to these resources would not occur.⁴¹⁶

J. Tourism and community benefits

313. Tourism in the Wind Project Area centers around various festivals and activities hosted by the cities, such as Butterfield and Mountain Lake, which are near the Wind Project Area.⁴¹⁷

314. The Jeffers Site is another tourist attraction in this area of southwestern Minnesota. About 5,000 prehistoric rock carvings are found at this site and visitors can choose between guided or solo tours; field trips for school groups are also available. In addition, 1.2 miles of maintained trails run through the site and are available for public use. The Visitor Center has interpretive displays and a short video presentation that provides information about Native American culture and prairie ecology, as well as a museum store.⁴¹⁸

315. Construction and operation of the Project will have minimal impact to tourism opportunities in the Wind Project vicinity. Construction impacts would mostly be related to increased traffic due to construction activities that may be perceptible to persons traveling through the Wind Project Area to visit tourist destinations in Mountain Lake or nearby recreation lands. These impacts will be minimal, temporary, and isolated to specific areas throughout the Wind Project Area.⁴¹⁹

316. Big Bend Wind has mitigated potential Wind Project effects on tourism opportunities in Cottonwood and Watonwan Counties by siting Wind Project facilities to

⁴¹³ Ex. 107 at Appx. B, §§ 5.3.5, 5.3.18, 5.3.20 (EA).

⁴¹⁴ Ex. 332 at 79 (BB-Amended Site Application).

⁴¹⁵ *Id.* at 81.

⁴¹⁶ *Id.* at 82.

⁴¹⁷ *Id.*

⁴¹⁸ *Id.* at 83.

⁴¹⁹ *Id.*

avoid recreation areas and municipalities where tourism opportunities are available. Additionally, with the Settlement Agreement, Big Bend Wind has revised the layout to remove turbines within at least 6.5 miles of the Jeffers Site.⁴²⁰

317. Further, as indicated in the record and supported by most of the comments from the local community, the Wind Project will positively impact the region by adding infrastructure, creating temporary and permanent jobs, increasing the counties' tax base, and providing lease payments to Wind Project participants.⁴²¹ Approximately 316 construction personnel will be required for construction and approximately 14 permanent personnel will be needed for operation and maintenance of the Wind Project.⁴²²

K. Topography

318. Impacts to topography will be minimal because the Wind Project Area has gently rolling terrain that is currently used for agricultural activities, including large machinery similar to those which will be used for construction. Wind turbines and access roads will not require significant excavation or fill beyond that which will be required for turbine foundations or road bases.⁴²³

L. Soils

319. Construction activities such as clearing, grading, foundation excavation, and backfilling, as well as the movement of construction equipment within the construction workspace, may result in impacts to soil resources. Potential impacts to soil resources include soil erosion, soil compaction, reduction of soil fertility, and changes to other soil characteristics. Grading and equipment traffic may compact soil, reducing porosity and percolation rates, which could result in increased runoff potential. These impacts will be temporary and localized to the footprint of facilities.⁴²⁴

320. The Wind Project layout would impact 47.7 acres of prime farmland, which is less than one percent of the prime farmland in the Project Area.⁴²⁵

321. Big Bend Wind will obtain a NPDES permit to discharge stormwater from construction facilities from the MPCA. Under this permit, Big Bend Wind will use best management practices (BMPs) during construction of the Project to protect topsoil and adjacent resources and to minimize soil erosion.⁴²⁶

⁴²⁰ *Id.*

⁴²¹ *Id.*

⁴²² *Id.* at 84.

⁴²³ *Id.* at 86.

⁴²⁴ *Id.* at 88.

⁴²⁵ *Id.*

⁴²⁶ *Id.* at 89.

322. Once construction is complete, Big Bend Wind will backfill graded and excavated areas with the stored native material and reestablish the original grade and drainage pattern of the construction workspace to the extent practicable.⁴²⁷

323. The Draft Site Permit contains several conditions requiring a permittee to avoid, minimize, and restore potential soil impacts.⁴²⁸

M. Geological and groundwater resources

324. Big Bend Wind does not anticipate any impacts to bedrock during construction or operation of the Wind Project as bedrock within the Wind Project Area is at depths greater than proposed foundation depths of four-to-six feet deep. Similarly, Big Bend Wind does not expect any impacts to groundwater resources as the aquifers are also at depths deeper than the excavation for the turbine foundations and permanent Wind Project facilities are not located near previously identified wells.⁴²⁹

325. One temporary batch plant may be needed to supply concrete for construction of the Project. The batch plant may be able to use rural water service but is more likely to require well water. The water source will be determined prior to construction when a contractor is selected to construct the Wind Project.⁴³⁰

326. The O&M facility will likely require a new private well water supply. The Wind Project will not require the appropriation of surface water or permanent dewatering. Temporary dewatering may be required during construction for specific turbine foundations and/or electrical trenches.⁴³¹

327. There is one turbine within the Mountain Lake Wellhead Protection Area. Construction and operation of the wind turbine within the Wellhead Protection Area will not introduce contaminants because excavation depth is four to six feet, well above the depth to the aquifer (100-400 feet). As such, no impacts to the Mountain Lake Wellhead Protection Area are anticipated.⁴³²

N. Surface waters and floodplain resources

328. Named streams within the Wind Project Area include Watonwan River and Butterfield Creek.⁴³³

329. There are no trout streams within the Wind Project Area. Similarly, none of the waterbodies within the Wind Project Area are identified as Outstanding Resource Value Waters under Minn. R. 7050.0335, subp. 3.⁴³⁴

⁴²⁷ *Id.* at 90.

⁴²⁸ Ex. 107 at Appx. B, §§ 5.3.5, 5.3.6, 5.3.7 (EA).

⁴²⁹ Ex. 332 at 91 (BB-Amended Site Application).

⁴³⁰ *Id.* at 92.

⁴³¹ *Id.*

⁴³² *Id.*

⁴³³ *Id.*

330. There are 16 Public Water Inventory (PWI) watercourses and five PWI basins in the Wind Project Area that are listed as MNDNR PWI public waters. There are no PWI wetlands in the Wind Project Area.⁴³⁵

331. According to the 2018 Impaired Waters List, there are eight section 303(d) impaired waters within the Wind Project Area, three basins and five watercourses.⁴³⁶

332. There are approximately 1,578 acres of 100-year floodplains within the Wind Project Area in Cottonwood County that are associated with the Watonwan River and an Unnamed Tributary to the Watonwan River. In Watonwan County, there are approximately 73 acres of 100-year floodplains within the Wind Project Area that are associated with Butterfield Creek.⁴³⁷

333. The Wind Project will have minor, mostly short-term effects on surface water resources. Wind Project facilities have been designed to avoid impacts on surface water resources to the extent practicable. Wind turbines will be built on uplands to avoid surface water resources in the lower elevations. Access roads have been designed to avoid crossing streams and other surface waters. Some collection lines and crane paths will cross streams during construction of the Wind Project.⁴³⁸

334. The Wind Project layout, which includes turbines, access roads, met towers, the Wind Project Substation, and the O&M facility, will not permanently impact floodplain areas.⁴³⁹

O. Wetlands

335. Wetlands within the Wind Project Area were identified using Minnesota's update to the National Wetlands Inventory (NWI). Some of the wetlands are associated with creeks and unnamed intermittent streams within the site and some of the wetlands are isolated basins.⁴⁴⁰

336. There are approximately 1,137.5 acres of NWI-mapped wetlands in the Wind Project Area, which constitute less than one percent of the Wind Project Area. Additionally, there are a total of 283 acres of PWI basins that are located within the Wind Project Area, which may overlap with NWI. There are no known calcareous fens, a rare and unique wetland type, within the Wind Project Area.⁴⁴¹

337. Turbines and meteorological towers will be constructed on higher ground within the Wind Project Area to maximize the wind resource, and as such, will not permanently impact wetlands. Based on preliminary design, access roads, the O&M

⁴³⁴ *Id.*

⁴³⁵ *Id.* at 93.

⁴³⁶ *Id.* at 93-94.

⁴³⁷ *Id.* at 95.

⁴³⁸ *Id.*

⁴³⁹ *Id.*

⁴⁴⁰ *Id.* at 96.

⁴⁴¹ *Id.* at 97.

facility, and the Wind Project Substation are also designed to avoid permanent impacts on wetlands. Based on review of the NWI data, temporary impacts on wetlands may occur from the use of access roads and crane paths, installation of collection lines, and workspaces used during turbine construction. None of the wetlands that would be temporarily impacted during construction are MNDNR-designated PWI wetlands.⁴⁴²

338. Big Bend Wind will minimize impacts to wetlands during construction by protecting topsoil, reducing soil erosion, and protecting adjacent wetland resources. Practices may include containing excavated material, using silt fences, protecting exposed soil, stabilizing restored material, and revegetating disturbed areas with non-invasive species.⁴⁴³

P. Vegetation

339. Most of the land within the Wind Project Area is cultivated cropland (approximately 92.5 percent) and developed areas (approximately 3.6 percent).⁴⁴⁴

340. Forested areas in the Wind Project Area are primarily surrounding residences as windbreaks and riparian areas along the Watonwan River and associated tributaries. Hay/Pasture and herbaceous lands are present primarily in areas near the margin of waterbodies in the Wind Project Area. The hay/pasture and herbaceous areas at the site may contain potential remnant native prairie areas.⁴⁴⁵

341. The primary impact from construction of the Wind Project would be the cutting, clearing, and removal of existing vegetation within the construction workspace. Vegetation will be permanently removed and replaced by wind turbines, access roads, and substation and O&M Facility components. The turbines and access roads are sited to avoid forests and groves to maximize turbine output and avoid tree removal. Less than one percent of the Wind Project Area will be permanently converted to sites for wind turbines, access roads, and facilities.⁴⁴⁶

342. Temporary vegetation impacts will be associated with crane walkways, the installation of underground collection lines, workspace around turbines, wider access roads, and contractor staging and laydown areas. Big Bend Wind will restore areas of disturbed soil in non-cropped areas using weed-free native grasses, forbs, and shrubs. In cropped areas, a temporary cover crop may be planted to stabilize soils depending on the timing of construction completion and the next growing season.⁴⁴⁷

343. The Draft Site Permit also contains conditions to avoid and minimize impacts from noxious weeds and invasive species.⁴⁴⁸

⁴⁴² *Id.*

⁴⁴³ *Id.* at 98.

⁴⁴⁴ *Id.*

⁴⁴⁵ *Id.* at 99.

⁴⁴⁶ *Id.*

⁴⁴⁷ *Id.* at 99-100.

⁴⁴⁸ Ex. 107 at Appx. B, §§ 5.3.11, 5.3.12 (EA).

Q. Wildlife

344. Wildlife in the Wind Project Area consists of birds, mammals, fish, reptiles, amphibians, and insects, both resident and migratory, which use Wind Project Area habitat for forage, breeding, or shelter. The resident species are representative of Minnesota game and non-game fauna that are associated with upland grass, farmlands, and wetland and forested areas. The majority of the migratory wildlife species are birds, including waterfowl, raptors, and songbirds.⁴⁴⁹

345. Development of the Wind Project, including the construction and operation, is expected to produce a minimal impact to wildlife. Based on studies of existing wind power projects in the United States and Europe, the impact to wildlife would primarily occur to avian and bat populations. It can be expected that, similar to other wind developments, there is a high likelihood that individual bird and bat fatalities will occur at the Wind Project. It is unlikely, however, that Big Bend Wind will affect species at the population level. Wind Project survey results indicate that development of the Wind Project Area is unlikely to adversely impact small or large bird populations, including diurnal raptors or species of concern. Most species observed are prevalent and abundant, and their populations are therefore at low risk of adverse impacts from the Wind Project.⁴⁵⁰

346. Big Bend Wind has committed to implementing a number of measures to the extent practicable to minimize and/or avoid potential impacts to wildlife in the Project Area during Wind Project design, construction, and operation, and these measures are identified in the Amended Wind Site Permit Application.⁴⁵¹

347. Further, consistent with MNDNR and DOC-EERA recommendations, Big Bend Wind has agreed to a minimum of two years of post-construction avian fatality monitoring for the Wind Project, and this is reflected in Wind Project's updated Bird and Bat Conservation Strategy (BBCS).⁴⁵² Related requirements are reflected in Sections 7.5.1 and 7.5.2 of the Draft Site Permit.⁴⁵³

R. Rare and unique natural resources

348. Big Bend Wind reviewed the United States Fish and Wildlife Service's (USFWS) Information for Planning and Conservation website for federally listed species, candidate species, and designated or proposed critical habitat that may be present within the proposed Wind Project Area. Big Bend Wind also reviewed the MNDNR's Natural Heritage Information System (NHIS) for documented occurrences of federally listed species, state listed species, and state species of concern within one mile of the Wind Project Area.⁴⁵⁴

⁴⁴⁹ Ex. 332 at 101-11 (BB-Amended Site Application).

⁴⁵⁰ *Id.* at 107.

⁴⁵¹ *Id.* at 110-11.

⁴⁵² Ex. 337 at 6 (Ikkala Surrebuttal).

⁴⁵³ Ex. 107 at Appx. B, §§ 7.5.1, 7.5.2 (EA).

⁴⁵⁴ Ex. 332 at 113 (BB-Amended Site Application).

349. Further, acoustic surveys to evaluate bat species group composition were conducted in the Wind Project Area during April to October 2018. The results indicated a lack of northern long-eared bat (NLEB) presence. Thus, NLEB is considered not likely to occur within the Project Area or be impacted by the Project.⁴⁵⁵

350. Big Bend Wind will implement best management practices recommended by USFWS and MNDNR to minimize take for all bat species including siting turbines more than 1,000 ft (305 m) from suitable habitat, minimizing tree removal to the greatest extent possible and focusing any necessary tree removal to winter, and locking or feathering blades up to manufacturer's cut-in speed from April 1 to October 31 for the life of the Wind Project.⁴⁵⁶

351. One federally listed species has been documented within the Wind Project Area, a 1974 record of the Poweshiek skipperling. This species is also state endangered. Based on the age of the record and the absence of the Poweshiek skipperling on the USFWS species list for the Wind Project Area, the Poweshiek skipperling is not likely to occur in the Wind Project Area.⁴⁵⁷ Big Bend Wind has, however, designed the Project to avoid any impacts to MNDNR-mapped native prairie, Native Plant Communities (NPCs), and Minnesota Biological Survey (MBS) Site of Biological Significance (SOBS), which may provide suitable habitat for this species.⁴⁵⁸

352. One state listed endangered bird, Henslow's sparrow, was observed during Wind Project-specific avian surveys. This species is grassland-dependent. Wind Project design avoids permanent impacts to areas classified as herbaceous and has 0.2 acre of temporary impact to herbaceous areas. As such, impacts to this species are not anticipated.⁴⁵⁹

353. In addition, there are records of one state listed special status mammal (plains pocket mouse) and one state listed special status insect (abbreviated underwing) historically occurring within the Wind Project Area. Additionally, there is one state-threatened insect (a caddisfly), two state-threatened plants (Sullivan's milkweed and hair-like beak rush) and one state listed special status plant (buffalo grass) within one mile of the Wind Project Area.⁴⁶⁰

354. Big Bend Wind has committed to implementing measures, to the extent practicable, to avoid potential impacts to federal and state-listed species and rare and sensitive habitat in the Wind Project Area, which are described in the Amended Wind Site Permit Application.⁴⁶¹

355. Bald eagles were observed during the Wind Project's avian use surveys. Overall bald eagle use was not concentrated in a specific portion of the current Wind

⁴⁵⁵ *Id.* at 114.

⁴⁵⁶ *Id.* at 115.

⁴⁵⁷ *Id.* at 114.

⁴⁵⁸ *Id.* at 115.

⁴⁵⁹ *Id.*

⁴⁶⁰ *Id.* at 114-15.

⁴⁶¹ *Id.* at 116.

Project area, although higher use was generally associated with areas near rivers and lakes. A bald eagle nest was discovered within the Wind Project Area during 2020 aerial nest surveys. This bald eagle nest is located 0.6-mile from the nearest turbine.⁴⁶² In 2021, this bald eagle nest was inactive, and therefore, no additional monitoring was conducted. No golden eagles were observed during site-specific surveys. Golden eagles may occur at the Wind Project occasionally; however, the Wind Project is expected to be low risk to golden eagles as described in the Eagle Conservation Plan Guidance (ECPG).⁴⁶³

356. Big Bend Wind has prepared an Eagle Management Plan to proactively address potential eagle impacts resulting from construction and operation of the Project. In addition, Big Bend Wind has prepared a BBCS, which includes standards for minimizing avian and bat impacts during construction and operation of the Wind Project. The BBCS was developed consistent with USFWS guidelines and includes additional avoidance and minimization measures that may be implemented in consultation with USFWS or MNDNR if avian and bat mortalities exceed an acceptable level.⁴⁶⁴

357. MNDNR also maps rare and unique plant communities that may include relatively rare habitats (e.g., prairie) or higher quality or good examples of more common plant communities (e.g., wet meadow). Big Bend Wind has sited all turbines in cultivated cropland, and the layout avoids permanent and temporary impacts from all Wind Project components (e.g., turbines, access roads, permanent met towers, Wind Project Substation, O&M facility, collection lines, and crane paths) on MNDNR-mapped native prairie.⁴⁶⁵ Big Bend Wind will prepare a Native Prairie Protection Plan. The plan will be submitted to the DOC-EERA and MNDNR after issuance of the site permit and prior to construction.⁴⁶⁶ This requirement is also reflected in the Draft Site Permit.⁴⁶⁷

358. In the EA, DOC-EERA stated that “[a]ny tree removal should avoid the active season (April 1-September 30) for the Northern long-eared bat. Ensuring construction and operation are consistent with USFWS guidance would minimize impacts to species.”⁴⁶⁸ In response, Big Bend Wind stated that it did not agree to DOC-EERA’s proposed conditions because it is not consistent with current USFWS guidance or recent Commission permits, which provide that “tree clearing shall occur between August 1 and May 31.” Big Bend Wind further noted that DOC-EERA had not identified a reason to depart from USFWS guidance or recent Commission permits here.⁴⁶⁹

359. In the EA, DOC-EERA noted that MNDNR recommended that Big Bend Wind “complete the necessary field review of all wetlands within 500 feet of construction

⁴⁶² *Id.* at 105.

⁴⁶³ *Id.* at 106.

⁴⁶⁴ *Id.* at 111.

⁴⁶⁵ *Id.* at 116.

⁴⁶⁶ *Id.* at 117.

⁴⁶⁷ Ex. 107 at Appx. B, § 4.7 (EA).

⁴⁶⁸ *Id.* at 379.

⁴⁶⁹ Ex. 337 at 5 (Ikkala Surrebuttal).

activities to determine if any of the wetlands are calcareous fens. If any calcareous fens are identified within 500 feet of any proposed construction activities a Calcareous Fen Management Plan will need to be developed in consultation with the MN DNR.”⁴⁷⁰ Big Bend Wind has agreed to this recommendation, and it is reflected in Section 5.3.8.1 of the Draft Site Permit.⁴⁷¹

S. Land Use and zoning

1. Land use

360. For a discussion of land use within the Wind Project Area, see Sections II(F) and (I) above.

2. Zoning

361. A site permit issued by the Commission “supersedes and preempts all zoning, building, or land use rules, regulations or ordinances adopted by regional, county, local, and special purpose governments.”⁴⁷² Therefore, Big Bend Wind is not required to apply to county zoning authorities for additional permits or approvals for the Wind Project. However, “[t]he commission, in considering a permit application for LWECS in a county that has adopted more stringent standards, shall consider and apply those more stringent standards, unless the commission finds good cause not to apply the standards.”⁴⁷³

362. Cottonwood and Watonwan Counties are predominately rural with sparsely scattered rural residences, farmsteads, commercial livestock operations, agricultural support facilities, and commercial business throughout. The Wind Project Area was developed to avoid municipalities to the extent possible.⁴⁷⁴

363. The majority of the Wind Project Area falls within the Agricultural Districts in Cottonwood and Watonwan Counties, and consistent with the purpose of that zoning district, agricultural use of the Wind Project Area will continue after construction of the Project is complete.⁴⁷⁵

364. Additionally, the Project is not expected to affect the future land use planning goals of the counties in the Wind Project Area. Renewable energy development is one of the stated future goals of Cottonwood County.⁴⁷⁶

⁴⁷⁰ Ex. 107 at 25 (EA).

⁴⁷¹ *Id.* at Appx. B. § 5.3.8.1.

⁴⁷² Minn. Stat. § 216F.07

⁴⁷³ Minn. Stat. § 216F.081.

⁴⁷⁴ Ex. 332 at 31 (BB-Amended Site Application).

⁴⁷⁵ *Id.* at 34.

⁴⁷⁶ *Id.* at 32, 34.

3. Conservation easements

365. There are several parcels of agriculture land in the Wind Project Area that are enrolled in the Conservation Reserve Enhancement Program (CREP). The CREP is an offshoot of the Conservation Reserve Program, which is a federal land conservation program that pays farmers a yearly rental fee for agreeing to take environmentally sensitive land out of agricultural production in an effort to improve environmental health and quality. Minnesota implemented the CREP to target state-identified, high-priority conservation resources by offering payments to farmers and agricultural landowners to retire environmentally sensitive land using the Reinvest in Minnesota (RIM) Reserve Program. Both conservation programs are administered by the Minnesota Board of Water and Soil Resources (BWSR).⁴⁷⁷ Additionally, in 2019, a Permanent Wetland Preserve (PWP) easement program was adopted into Minn. Stat. § 103F.516.⁴⁷⁸

366. Enrollment in the CREP is voluntary. Based on publicly available data, there are approximately 526 Acres (approximately one percent) of the Wind Project Area currently enrolled in CREP, RIM, and PWP easements.⁴⁷⁹

367. Big Bend Wind has designed the Project to avoid most conservation easements identified through review of publicly available data. If additional conservation easements are identified during the title search or in consultation with the NRCS, BWSR, or MNDNR, and impacts to these conservation easements are unavoidable, Big Bend Wind will work with easement holders to obtain all necessary consents to construct and operate the Project. In temporarily disturbed areas, Big Bend Wind will reseed with an appropriate native seed mix free of invasive species; identification and management of invasive species will be detailed in the Invasive Species Management Plan preconstruction filing.⁴⁸⁰

368. A member of the public expressed concern regarding the Wind Project's impact on local conservation efforts, particularly the potential restoration of a wetland area. The EA discusses this property, which is an old lakebed currently in active agricultural production. The owner of the lakebed noted that previous surveys determined that restoration of the old lakebed would possibly lead to the back-up of the City of Mountain Lake's drainage resulting in the need for installation and operation of a lift station for the City of Mountain Lake. More generally, Applicants have obtained voluntary easements from landowners who wish to participate in the Projects, and Applicants stated that no participating landowners have expressed concerns about conservation easements.⁴⁸¹

⁴⁷⁷ *Id.* at 35.

⁴⁷⁸ *Id.*

⁴⁷⁹ *Id.*

⁴⁸⁰ *Id.* at 35-36.

⁴⁸¹ See Ex. 107 at 38-39 (EA); Applicants' Post-Hearing Brief at 11-12 (Mar. 18, 2022) (eDocket No. 20223-183968-06).

T. Decommissioning and restoration

369. The anticipated Wind Project life is approximately 30 years beyond the date of first commercial operation.⁴⁸²

370. Big Bend Wind prepared a Project decommissioning and restoration plan in accordance with the requirements of Minn. R. 7854.0500, subp. 13. The plan also incorporates the considerations of Cottonwood County Zoning Ordinance Section 25, and Watonwan County Zoning Ordinance Section 12-M.⁴⁸³

371. The estimated decommissioning cost in current dollars is expected to be \$189,631 per turbine, excluding salvage value. Including resale and salvage values, the estimated decommissioning cost in current dollars is expected to be around \$106,317 per turbine after salvage value, including associated facilities.⁴⁸⁴

372. The Wind Project decommissioning cost will be reassessed every five years and an updated Decommissioning Plan will be eFiled with the Commission. In year ten following the Wind Project's commercial operation date, Big Bend Wind will establish a financial surety in the form of escrow, bond, letter of credit, or similar to ensure that decommissioning funds are available at the time of decommissioning. Cottonwood and Watonwan Counties will be the beneficiaries of the financial surety.⁴⁸⁵

373. At the end of commercial operation, Big Bend Wind will be responsible for removing wind facilities and removing the turbine foundations to a depth of four feet below grade.⁴⁸⁶ Big Bend Wind will restore and reclaim the site to its pre-Wind Project topography and topsoil quality using BMPs consistent with those outlined by 2012 USFWS Land-Based Wind Energy Guidelines. In non-cropland areas, the goal of decommissioning will be to restore natural hydrology and plant communities to the greatest extent practical while minimizing new disturbance and removal of native vegetation.⁴⁸⁷

III. Wind Site Permit Conditions

374. The Draft Site Permit includes proposed permit conditions that apply to site preparation, construction, clean-up, restoration, operation, maintenance, abandonment, decommissioning, and other aspects of the Wind Project. Many of the conditions contained in the Draft Site Permit were established as part of the site permit proceedings of other wind turbine projects permitted by the Commission.

⁴⁸² Ex. 332 at 136 (BB-Amended Site Application).

⁴⁸³ *Id.*; see also Ex. 107 at Appx. B, § 11.1 (EA).

⁴⁸⁴ Ex. 332 at 138 (BB-Amended Site Application).

⁴⁸⁵ *Id.*

⁴⁸⁶ *Id.* at 136.

⁴⁸⁷ *Id.* at 137.

375. Big Bend Wind filed testimony concerning revisions to certain provisions and conditions in the Draft Site Permit, as well as issues identified in the EA.⁴⁸⁸

376. Consistent with the Amended Site Permit Application, Settlement Agreement, and related testimony, Big Bend Wind recommended a change to Section 4.1 of the Draft Site Permit to state: “The Commission authorizes a variance of the wind access buffer setback for the following turbine locations: A01 and A02.”⁴⁸⁹ Big Bend Wind explained that a waiver of the wind access buffer setback was warranted in this case because it aided the Parties in effectuating the Settlement Agreement and did not result in significant incremental impacts on the applicable non-participating landowners. Other parties to this proceeding also support a waiver of the wind access buffer setback.⁴⁹⁰ DOC-EERA opposed the waiver, expressing concerns about the wind rights of non-participating landowners and turbine efficiency.⁴⁹¹ Big Bend Wind responded to these concerns, and, under the unique circumstances of this case, the record supports a waiver of the wind access buffer setback for turbine locations A01 and A02.⁴⁹²

377. In addition, Big Bend Wind did not object to DOC-EERA’s recommendation that a condition regarding an independent agency monitor be included in the Site Permit. Big Bend Wind proposed the following language, with which DOC-EERA agreed:

Section 6.2 Independent Monitor: Prior to any construction, the Permittee shall propose a scope of work and identify one independent third party agency monitor on behalf of the Department of Commerce. The scope of work shall be developed in consultation with and approved by the Department of Commerce. This third-party monitor will report directly to and will be under the control of the Department of Commerce with costs borne by the Permittee. The Permittee shall file with the Commission the scope of work 30 days prior to commencing construction and the name, address, email, phone number, and emergency phone number of the third-party monitor 14 days prior to commencing any construction and upon any change that may occur during the construction of the project and restoration.⁴⁹³

378. Although not identified in the Draft Site Permit, in the EA, DOC-EERA recommended a condition regarding tree removal timetables that would require any tree clearing to be conducted between October 1 and March 30 to mitigate impacts to northern long-eared bats. Big Bend Wind did not agree to this condition as proposed by

⁴⁸⁸ Ex. 337 (Ikkala Surrebuttal).

⁴⁸⁹ *Id.* at Sch. F.

⁴⁹⁰ See Applicants’ Post-Hearing Brief § I (Mar. 18, 2022) (eDocket No. 20223-183968-06).

⁴⁹¹ DOC-EERA Public Hearing Comments at 1-2 (Feb. 22, 2022) (eDocket No. 20222-183059-01).

⁴⁹² See Applicants’ Post-Hearing Brief § I (Mar. 18, 2022) (eDocket No. 20223-183968-06).

⁴⁹³ Ex. 337 at Sched. F (Ikkala Surrebuttal); DOC-EERA Public Hearing Comments at 2 (Feb. 22, 2022) (eDocket No. 20222-183059-01). DOC-EERA noted a minor error in the proposed language (the reference to “right-of-way”), which is corrected in the language identified above and with respect to the Solar Project.

DOC-EERA because it is not consistent with current USFWS guidance or recent Commission permits, which instead provides that “tree clearing shall occur between August 1 and May 31.”⁴⁹⁴ Because the record does not support a departure from USFWS guidance or recent Commission permits, to the extent a condition is included in the Wind Site Permit related to tree removal timetables, the record supports the condition as identified by Big Bend Wind.

Route Permit

I. Route Permit Criteria

379. The Power Plant Siting Act (PPSA), Minnesota Statutes, chapter 216E, requires that route permit determinations “be guided by the state’s goals to conserve resources, minimize environmental impacts, minimize human settlement and other land use conflicts, and ensure the state’s electric energy security through efficient, cost-effective power supply and electric transmission infrastructure.”⁴⁹⁵

380. Under the PPSA, the Commission and the ALJ must be guided by the following responsibilities, procedures, and considerations:

- (1) 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;
- (2) environmental evaluation of sites and routes proposed for future development and expansion and their relationship to the land, water, air and human resources of the state;
- (3) evaluation of the effects of new electric power generation and transmission technologies and systems related to power plants designed to minimize adverse environmental effects;

⁴⁹⁴ Ex. 337 at 5 (Ikkala Surrebuttal).

⁴⁹⁵ Minn. Stat. § 216E.03, subd. 7.

- (4) evaluation of the potential for beneficial uses of waste energy from proposed large electric power generating plants;⁴⁹⁶
- (5) analysis of the direct and indirect economic impact of proposed sites and routes including, but not limited to, productive agricultural land lost or impaired;
- (6) evaluation of adverse direct and indirect environmental effects that cannot be avoided should the proposed site and route be accepted;
- (7) evaluation of alternatives to the applicant's proposed site or route proposed pursuant to subdivisions 1 and 2;
- (8) evaluation of potential routes that would use or parallel existing railroad and highway rights-of-way;
- (9) evaluation of governmental survey lines and other natural division lines of agricultural land so as to minimize interference with agricultural operations;
- (10) evaluation of the future needs for additional high-voltage transmission lines in the same general area as any proposed route, and the advisability of ordering the construction of structures capable of expansion in transmission capacity through multiple circuiting or design modifications;
- (11) evaluation of irreversible and irretrievable commitments of resources should the proposed site or route be approved; and
- (12) when appropriate, consideration of problems raised by other state and federal agencies and local entities.⁴⁹⁷

381. Also, the statute further provides that the Commission "must make specific findings that it has considered locating a route for a high-voltage transmission line on an existing high-voltage transmission route and the use of parallel existing highway right-of-way and, to the extent those are not used for the route, the commission must state the reasons."⁴⁹⁸

⁴⁹⁶ Factor 4 is inapplicable because Applicants are not proposing to site a large electric generating plant in this docket.

⁴⁹⁷ Minn. Stat. § 216E.03, subd. 7.

⁴⁹⁸ *Id.*, subd. 7(e).

382. In addition to the PPSA, the Commission and the ALJ are governed by Minn. R. 7850.4100, which mandates consideration of the following factors when determining whether to issue a route permit for a high-voltage transmission line:

- A. effects on human settlement, including, but not limited to, displacement, noise, aesthetics, cultural values, recreation, and public services;
- B. effects on public health and safety;
- C. effects on land-based economies, including, but not limited to, agriculture, forestry, tourism, and mining;
- D. effects on archaeological and historic resources;
- E. effects on the natural environment, including effects on air and water quality resources and flora and fauna;
- F. effects on rare and unique natural resources;
- G. application of design options that maximize energy efficiencies, mitigate adverse environmental effects, and could accommodate expansion of transmission or generating capacity;
- H. use or paralleling of existing rights-of-way, survey lines, natural division lines, and agricultural field boundaries;
- I. use of existing large electric power generating plant sites;⁴⁹⁹
- J. use of existing transportation, pipeline, and electrical transmission systems or rights-of-way;
- K. electrical system reliability;
- L. costs of constructing, operating, and maintaining the facility which are dependent on design and route;
- M. adverse human and natural environmental effects which cannot be avoided; and
- N. irreversible and irretrievable commitments of resources.⁵⁰⁰

⁴⁹⁹ This factor is not applicable because it applies only to power plant siting.

⁵⁰⁰ Minn. R. 7850.4100.

383. There is sufficient evidence on the record for the Administrative Law Judge to assess the routes on the record using the criteria and factors set out above.

II. Application of Route Permit Criteria to the Proposed Transmission Line

A. Effects on human settlement

384. Minnesota law requires consideration of the Transmission Line's (or, for the purposes of this section discussing the Route Permit, the Project) effects on human settlement, including displacement of residences and businesses, noise created during construction and by operation of the Project, and impacts to aesthetics, cultural values, recreation, and public services.⁵⁰¹

1. Displacement.

385. No displacement is expected to occur because of the Transmission Line.⁵⁰²

2. Noise.

386. Section 5.3.5 of the sample route requires that "construction and maintenance activities shall be limited to daytime working hours to the extent practicable to ensure nighttime noise level standards will not be exceeded." During operations, Big Bend Wind is required to adhere to noise standards, and no additional mitigation was proposed in the EA because significant impacts are not anticipated.⁵⁰³

3. Aesthetics

387. There are no scenic overlooks or scenic byways in the vicinity of the Transmission Line, nor are there schools or churches in the local vicinity.⁵⁰⁴ There are several wind farms that are visible to residences along the Proposed Route.⁵⁰⁵

388. The Project's Transmission Line structures and conductors would create aesthetic impacts that are anticipated to be minimal to moderate. The degree of impact would be minimal for the Proposed Route. The Project will result in an alteration of the current landscape through construction of wood poles of 70 to 120 feet.⁵⁰⁶ Construction of the Step-up Substation in an existing agricultural field will present a new visual impact. Down-shielded lighting will minimize any lighting impacts.⁵⁰⁷

389. Big Bend Wind has minimized aesthetic impacts by choosing routes where a transmission line is most harmonious with the landscape, such as along roads and

⁵⁰¹ Minn. Stat. § 216E.03, subd. 7(b)(1); Minn. R. 7850.4100, subp. A.

⁵⁰² Ex. 107 at 290 (EA).

⁵⁰³ *Id.* at 300-01.

⁵⁰⁴ *Id.* at 284.

⁵⁰⁵ Ex. 316 at 31 (Route Permit Application).

⁵⁰⁶ *Id.*

⁵⁰⁷ *Id.* at 32.

field edges.⁵⁰⁸ The EA notes that there is currently a significant presence of existing transmission lines and operating wind projects in all three counties crossed by the Proposed Route, such that the current aesthetics of the area has structures that will be similar to those constructed for the Transmission Line.⁵⁰⁹

4. Cultural values

390. The communities in the Project Study Area primarily have cultural values tied to agricultural production, light industry, and recreational activities such as hunting and fishing.⁵¹⁰ In addition, the Jeffers Site, which is about 11 miles northwest of the Transmission Line, is a culturally important site for several Tribes in the United States, including Tribes in Minnesota.⁵¹¹

391. The EA concluded the Transmission Line is not anticipated to be visible to individual users at the Jeffers Petroglyphs site, so no impacts to cultural values are expected.⁵¹²

5. Recreation

392. Recreation in the vicinity of the Transmission Line consists primarily of outdoor recreational opportunities, such as hiking, fishing, camping, and snowmobiling. Recreational opportunities at public lands include MNDNR-managed WMAs, snowmobile trails, and county and city parks.⁵¹³

393. There are no other DNR classified lands, such as State Forests, Parks, Trails, or SNAs within 1,000 feet of any routing option. There are no federal parks, forests, or refuges; or county parks, other than Mountain County Park, within the local vicinity.⁵¹⁴

394. Impacts to recreation areas would mostly be related to Transmission Line construction, and will be minimal, temporary, and isolated to specific areas throughout the Proposed Route.⁵¹⁵

6. Public services and infrastructure

395. Transmission line projects have the potential to impact public services during both construction and operation.⁵¹⁶

⁵⁰⁸ *Id.* at 31; Ex. 107 at 288 (EA).

⁵⁰⁹ Ex. 107 at 289 (EA).

⁵¹⁰ Ex. 316 at 35 (Route Permit Application).

⁵¹¹ *Id.*; Ex. 107 at 289 (EA).

⁵¹² Ex. 316 at 36 (Route Permit Application); Ex. 107 at 289 (EA).

⁵¹³ Ex. 316 at 36 (Route Permit Application); Ex. 107 at 304 (EA).

⁵¹⁴ Ex. 107 at 304 (EA).

⁵¹⁵ *Id.* at 304-06; Ex. 316 at 39 (Route Permit Application).

⁵¹⁶ Ex. 316 at 44 (Route Permit Application).

396. Based on review of the National Pipeline Mapping System, the Proposed Route does not cross natural gas pipelines.⁵¹⁷

397. The Proposed Route crosses an existing Xcel Energy 345 kV transmission line twice before reaching the Project Step-up Substation in northwest Martin County. At the request of Xcel Energy, Big Bend Wind will construct the proposed Transmission Line to cross over the top of the existing 345 kV transmission line at each location.⁵¹⁸

398. Impacts with radio, television, cellular phones, or GPS units are not expected from construction or operation of the Proposed Route.⁵¹⁹

399. The nearest public airport is located approximately 11 miles west of the Proposed Route in Windom, Minnesota.⁵²⁰ There is a private landing strip located along County Road 128 in Watonwan County. The Anticipated Alignment is located on the opposite side of County Road 128 from the landing strip, and the Anticipated Alignment turns east and crosses County Road 128 and the southern end of the private landing strip. Big Bend Wind has agreed to bury approximately 0.4 miles of the HVTL, beginning on the west side of County Road 128, crossing the road and landing strip, and continuing southeast to CSAH 7. There will be no impacts to public airports and the private landing strip, as sufficient mitigation efforts are being completed by Big Bend Wind.⁵²¹

400. Big Bend Wind will coordinate with utility providers and authorities, including emergency services, to determine the locations of facilities, appropriate safety precautions and standards, and measures to address these precautions and standards.⁵²²

401. Prior to construction, Big Bend Wind will locate and mark underground utilities using the Gopher State One-Call system. If Big Bend Wind needs to cross an underground utility or other underground infrastructure with heavy equipment, they will employ BMPs to protect the infrastructure, such as construction matting.⁵²³

402. Overall, the EA concluded that impacts of the Transmission Line on public services and infrastructure are anticipated to be negligible.⁵²⁴ Likewise, Section 5.3.3 of the Sample Route Permit requires a permittee to minimize disruptions to public services and public utilities.⁵²⁵

⁵¹⁷ *Id.* at 46.

⁵¹⁸ *Id.*

⁵¹⁹ *Id.* at 47; Ex. 107 at 280-81 (EA).

⁵²⁰ Ex. 316 at 49 (Route Permit Application).

⁵²¹ Ex. 107 at 280 (EA).

⁵²² Ex. 316 at 46 (Route Permit Application).

⁵²³ *Id.*

⁵²⁴ Ex. 107 at 280 (EA).

⁵²⁵ *Id.* at Appx. D § 5.3.3 (EA).

7. Socioeconomics and property values

403. Construction of the Transmission Line would take approximately five months and the construction work force would be approximately 45 workers. The influx of additional construction personnel will have a small positive impact on the local economy from construction crew expenditures in the local community (e.g., lodging, fuel, food). Construction materials (e.g., lumber, concrete, aggregate) may be purchased from local vendors when feasible.⁵²⁶ Adverse socioeconomic impacts arising from the Transmission Line are not anticipated.⁵²⁷

404. Impacts to property values could occur; however, specific changes to a property's value are difficult to predict. Property value impacts fall off rapidly with distance; therefore, impacts are anticipated to be localized. On whole, impacts are anticipated to be minimal and dissipate quickly at distances greater than 400 feet from the Transmission Line. All routing options could have minimal to moderate impacts on local property values, but any impacts will be highly variable to individual properties and will depend on individual property location, distance from the selected routing option, and existing infrastructure currently present around or on a given property.⁵²⁸

8. Land use and zoning

405. Land cover types within the Proposed Route are approximately 82.5 percent cultivated croplands, 15.8 percent developed areas (low density, medium density, and open space), 0.6 percent herbaceous lands, 0.6 percent emergent herbaceous wetlands, and 0.5 percent hay/pastureland.⁵²⁹

406. A route permit from the Commission supersedes and preempts all zoning, building or land use rules, regulations, and ordinances promulgated by regional, county, and local governments.⁵³⁰ The majority of the Proposed Route within Cottonwood County is located in the Agricultural District, with the Route crossing a few parcels zoned as Residential-Single Unit. These Residential-Single Unit parcels are farmsteads within the rural landscape and are not the same as residential areas in an urban or municipal setting. The majority of the Proposed Route in Watonwan County is located within the Agricultural District and a smaller portion of the Route travels through the Flood Plain Overlay District and the Shoreland Overlay District. The majority of the Proposed Route in Martin County is located within the Agricultural District and smaller portions of the Route travel through the Shoreland District. Where the Proposed Route crosses Cedar Creek, Martin County has specifically identified lands adjacent to Cedar Creek as a Special Protection District.⁵³¹

⁵²⁶ Ex. 316 at 35 (Route Permit Application).

⁵²⁷ Ex. 107 at 309 (EA).

⁵²⁸ *Id.* at 302-03.

⁵²⁹ *Id.* at 294; Ex. 316 at 39-40 (Route Permit Application).

⁵³⁰ Minn. Stat. § 216E.10, subd. 1.

⁵³¹ Ex. 107 at 295 (EA).

407. The Transmission Line is not expected to change the underlying land use; the Step-Up Substation will change the underlying land use from agricultural to industrial.⁵³²

408. The Anticipated Alignment, within the Proposed Route, has been sited outside of the residential areas in Cottonwood County. The Transmission Line will also span all shoreland districts. Big Bend Wind will avoid placing pole structures within floodplain districts to the greatest extent practicable, and when pole structures must be placed in the floodplain districts the poles will be placed in a manner that is consistent with the floodplain districts requirements and ordinances.⁵³³

9. Environmental justice

409. The EA concluded that the Transmission Line is not anticipated to create any environmental justice concerns.⁵³⁴

B. Effects on public health and safety

410. The Transmission Line will meet local, state, and NESC safety standards and will be equipped with protective devices to prevent damage from transmission line or pole falls or other potential accidents. In addition, the Step-up Substation will be fenced and accessible only by authorized personnel. Signage around the Project will warn the public of the safety risks associated with the energized equipment.⁵³⁵

411. There is no federal standard for transmission line electric fields. The Commission, however, has imposed a maximum electric field limit of 8.0 kV/m measured at one meter (3.28 feet) above the ground. The standard was designed to prevent serious hazards from shocks when touching large objects parked under alternating current transmission lines of 500 kV or greater.⁵³⁶

412. Big Bend Wind anticipates that the proposed 161 kV will have an electrical field of 1.0 kV/m directly below the line and will dissipate to 0.5 kV/m at 50 feet from the HVTL alignment. These field strengths are well below the Commission permit standard of 8.0 kV/m.⁵³⁷

413. No health impacts due to EMF are anticipated for any of the possible routing options; therefore, no mitigation is proposed. The Transmission Line will be constructed to maintain proper safety clearances. The Step-up Substation site will not

⁵³² *Id.*

⁵³³ *Id.* at 296-97.

⁵³⁴ *Id.* at 294.

⁵³⁵ Ex. 316 at 25 (Route Permit Application).

⁵³⁶ *Id.* at 26.

⁵³⁷ Ex. 107 at 312 (EA).

be accessible to the public.⁵³⁸ Likewise, impacts to implantable medical devices are not expected.⁵³⁹

414. Potential impacts to residences or farming operations from neutral-to-earth stray voltage are not anticipated. HVTLs do not produce this type of stray voltage because HVTLs do not directly connect to businesses, residences, or farms.⁵⁴⁰

415. In summary, the record demonstrates that the construction and operation of the Project are not expected to impact emergency services or have a negative impact on public health or safety.⁵⁴¹ Further, the Sample Route Permit contains conditions related to the protection of public safety.⁵⁴²

C. Effects on land-based economies

1. Agriculture

416. Agriculture is the primary land-based economic resource in the Project Area.⁵⁴³

417. Construction of the Transmission Line could cause minimal, temporary impacts to farmland from soil compaction and rutting, accelerated soil erosion, crop damage, temporary disruption to normal farming activities, and introduction of noxious weeds to the soil surface.⁵⁴⁴

418. Big Bend Wind will implement measures to reduce compaction, soil erosion, and the introduction of noxious weeds. Construction impacts to farmland would be short term and minimal in nature and would be mitigated through the proper use and installation of BMPs, such as minimizing the number of vehicles and providing protection and maintenance of topsoil during right-of-way clearing and generation-tie-line construction.⁵⁴⁵

419. No CREP or RIM parcels have been identified within the Proposed Route.⁵⁴⁶

2. Forestry

420. There are no forestry operations along the Proposed Route.⁵⁴⁷ The Proposed Route minimizes tree clearing and impacts to forestry are anticipated to be negligible.⁵⁴⁸

⁵³⁸ *Id.* at 313.

⁵³⁹ *Id.* at 314.

⁵⁴⁰ *Id.* at 318-19.

⁵⁴¹ *See id.* at 281; Ex. 316 at 25-26 (Route Permit Application).

⁵⁴² Ex. 107 at Appx. D, § 5.5.1 (EA).

⁵⁴³ Ex. 316 at 51, 64 (Route Permit Application).

⁵⁴⁴ *Id.* at 54.

⁵⁴⁵ *Id.* at 55.

⁵⁴⁶ *Id.* at 54.

3. Tourism

421. Big Bend Wind has minimized impacts to tourism opportunities by siting the Proposed Route to avoid recreation areas and municipalities where tourism opportunities are available.⁵⁴⁹

422. Construction and operation of the Transmission Line would not preclude future tourist activities in the vicinity of the Projects.⁵⁵⁰

4. Mining

423. The closest mapped mining resources to the Project are an inactive gravel pit that is 4.7 miles east of the Proposed Route in Watonwan County, just south of the Town of Butterfield, and an inactive gravel pit near Cedar Lake in Martin County that is 4.1 miles southeast of the Proposed Route.⁵⁵¹ As such, impacts to mining resources are not anticipated.⁵⁵²

D. Effects on archaeological and historic resources

424. No previously recorded archaeological sites, and one previously recorded historic architectural resource were identified being crossed by the Proposed Route Application Alignment. The previously recorded historic architectural resource is the St. Paul & Pacific Railroad; this railroad is recommended as eligible for listing in the NRHP.⁵⁵³

425. No impacts to any recorded archaeological or architectural resources are anticipated to result from the Transmission Line, including the Step-up Substation.⁵⁵⁴

426. Further, Section 5.3.14 of the Sample Route Permit requires a permittee to make every effort to avoid impacts to identified archaeological and historic resources during construction.⁵⁵⁵

427. Big Bend Wind has prepared an Unanticipated Discovery Plan in coordination with Tribes, which has been filed in this record and governs the discovery of unanticipated archaeological resources during construction of the Transmission Line.⁵⁵⁶

⁵⁴⁷ *Id.* at 55.

⁵⁴⁸ Ex. 107 at 281 (EA).

⁵⁴⁹ Ex. 316 at 57 (Route Permit Application).

⁵⁵⁰ Ea. 107 at 283 (EA).

⁵⁵¹ Ex. 316 at 58 (Route Permit Application).

⁵⁵² Ea. 107 at 282 (EA).

⁵⁵³ Ex. 316 at 59 (Route Permit Application).

⁵⁵⁴ Ex. 107 at 327 (EA).

⁵⁵⁵ *Id.* at Appx. D. § 5.3.14.

⁵⁵⁶ See Ex. 316 at 60 (Route Permit Application).

E. Effects on the natural environment

1. Air quality and climate change

428. Potential air quality impacts associated with the Transmission Line come from two primary sources: short-term emissions from construction vehicles and ozone and nitrogen oxide emissions from operating the facility.⁵⁵⁷

429. Air emissions during construction would primarily consist of emissions from construction equipment and would include carbon dioxide, NOX, and particulate matter; dust generated from earth disturbing activities would also give rise to particulate matter. Emissions would be dependent on weather conditions, the amount of equipment at any given location, and the period of operation required for construction at that location. Any emissions from construction would be like those from agricultural activities common in the Project Area and would only occur for short periods of time in localized areas.⁵⁵⁸

430. During operation of the line, air emissions would be minimal. An insignificant amount of ozone is created due to corona from the operation of transmission lines.⁵⁵⁹ The emission of ozone from the operation of a transmission line of the voltages proposed for the Project is not anticipated to have a significant impact on air quality and no mitigation is proposed.⁵⁶⁰

2. Water quality and resources

(1) Groundwater

431. There are no private wells within the right-of-way for any of the proposed routing options.⁵⁶¹ Indirect impacts to groundwater, if any, can be mitigated by avoiding or minimizing impacts to surface waters. Should dewatering be used, it should be directed away from wetlands and done in a manner to prevent erosion; that is, an appropriately sized, carefully-monitored dewatering containment system should be employed if dewatering becomes necessary.⁵⁶²

432. Overall, potential impacts to groundwater are anticipated to be minimal.⁵⁶³

(2) Surface Waters

433. The Proposed Route right-of-way has six stream and river crossings, and four of the water courses are identified on the PWI. The Crandall Alternate Route right-of-way has ten stream and river crossings, and nine of those water courses are

⁵⁵⁷ *Id.* at 61.

⁵⁵⁸ *Id.*

⁵⁵⁹ *Id.*

⁵⁶⁰ *Id.* at 62.

⁵⁶¹ Ex. 107 at 335 (EA).

⁵⁶² *Id.*

⁵⁶³ *Id.* at 334.

identified on the PWI. The Peaking Plant Alternate Route right-of-way will cross six streams and rivers, and five of the water courses are on the PWI. The Alternate Red Route Segment has one stream and river crossing, which is identified on the PWI. The Alternate Yellow Route Segment has two stream and river crossings; both of those crossings are on the same water course that is identified on the PWI. The Alternate Purple Route Segment and the Peaking Plant Alternate Route–Alternate Route Segment do not cross any PWI streams or rivers.⁵⁶⁴

434. Impaired waters are found throughout the Project Area, and the Proposed Route crosses five impaired waters, the Crandall Alternate Route crosses nine impaired waters, and the Peaking Plant Alternate Route crosses five impaired waters. The Alternate Yellow Route Segment has two crossings of an impaired water. The Alternate Red Alternate Route Segment, Alternate Purple Alternate Route Segment and the Peaking Plant Alternate Route–Alternate Route segment do not cross any impaired waters.⁵⁶⁵

435. Potential impacts along all routing options are anticipated to be minimal to moderate and can be mitigated. All waterbodies and watercourses will be spanned. Because no structures or equipment will enter the water, no direct impacts to surface waters are anticipated. However, construction activities near surface waters could cause riparian vegetation disturbance and surface erosion.⁵⁶⁶

(3) *Wetlands*

436. There are 3.4 acres of NWI-mapped wetlands within the Proposed Route right-of-way. None of the wetlands crossed by the Proposed Route are PWI wetlands. Based on minimum pole spacing and NWI wetlands, two structures would be placed in wetlands.⁵⁶⁷

437. Based on the NLCD land cover data, there are approximately 0.6 acre of emergent herbaceous wetland in the five-acre Step-up Substation. However, based on wetland-specific desktop data (NWI), there are no mapped wetlands within the Step-up Substation area.⁵⁶⁸ The Step-Up Substation location next to the Lakefield Peaking Plant Substation does not have any wetlands present within the area.⁵⁶⁹

438. Commission route permits require permittees to avoid and minimize wetland impacts. Wetland impact avoidance measures that will be implemented during design and construction of the Transmission Line include spacing and placing the power poles at variable distances to span and avoid wetlands, where possible. When it is not possible to span the wetland, several measures will be utilized to minimize impacts during construction. In addition, the mitigation measures to which Big Bend Wind has

⁵⁶⁴ *Id.* at 343-44.

⁵⁶⁵ *Id.* at 344.

⁵⁶⁶ *Id.* at 343.

⁵⁶⁷ Ex. 316 at 73 (Route Permit Application).

⁵⁶⁸ *Id.*

⁵⁶⁹ Ex. 107 at 351 (EA).

committed to avoid and minimize wetland impacts are described in Section 5.5.5.1 of the Route Permit Application.⁵⁷⁰

(4) *Floodplains*

439. The Proposed Route crosses floodplain and shoreland districts (or overlay districts). Based on preliminary engineering design, the Proposed Route would place 20 pole structures in FEMA designated 100-year floodplains along the anticipated alignment. The Crandall Alternate Route would place 25 pole structures in the FEMA designated 100-year floodplain, and the Peaking Plant Alternate Route would place 20 pole structures in the FEMA designated 100-year floodplain. Any pole structures placed within a floodplain or shoreland area for any routing option will be placed in a manner that is consistent with all applicable zoning ordinances.⁵⁷¹

440. Approximately, 0.9 acres of the Step-Up Substation location adjacent to the Crandall Substation is within the 100-year floodplain associated with Cedar Creek.⁵⁷² Facility structures will not be placed in the portion of the area within the 100-year floodplain.⁵⁷³

3. **Vegetation**

441. Impacts on vegetation from the Transmission Line will be associated primarily with cultivated crop areas. Other impacts to flora may be related to wind breaks, woodlots, fence rows, and other landscape features.⁵⁷⁴

442. Construction of the Transmission Line will result in short-term adverse impacts on existing vegetation, including localized physical disturbance and soil compaction. Construction activities, such as site preparation and installation of structures, are anticipated to impact approximately 0.1 to 0.5 acres of vegetation per structure.⁵⁷⁵

443. Construction will also result in long-term impacts on vegetation by permanently removing vegetation at each structure and within portions of the right-of-way that are currently dominated by forest or other woody vegetation. Big Bend Wind would permanently convert forested areas and shrub lands to low-stature vegetation by clearing woody vegetation throughout the entire right-of-way where it occurs.⁵⁷⁶

444. Vegetation management is necessary for the safe operation of the Transmission Line as tree branches can cause stress on transmission lines and increase the risk of outages, especially in areas with a strong wind resource, which is typical of this area of the state. Big Bend Wind will minimize the need for trimming and

⁵⁷⁰ *Id.* at 352-53.

⁵⁷¹ *Id.* at 331.

⁵⁷² *Id.* at 332.

⁵⁷³ *Id.* at 334.

⁵⁷⁴ Ex. 316 at 74 (Route Permit Application).

⁵⁷⁵ *Id.*

⁵⁷⁶ *Id.*

removal of trees during construction and operation of the Transmission Line. Where trimming of trees is necessary, it will be performed with best practices for tree trimming so as to minimize stress on the tree.⁵⁷⁷

445. The primary means of mitigating impacts to flora is to avoid vegetation, particularly trees, through prudent routing. Mitigation can be achieved, in part, by using existing infrastructure rights-of-way (e.g., roadway, transmission line) such that tree removal is minimized. Mitigation can also be accomplished by spanning plant communities. Wooded areas along the Proposed Route consist of isolated rows of trees that are used as shelter belts or wind breaks along the edges of agricultural fields or surrounding farmsteads and in riparian areas along waterbodies. Big Bend Wind developed a Route and Application Alignment that minimizes tree clearing.⁵⁷⁸

446. Further, Sections 5.3.11 and 5.3.12 of the Sample Route Permit requires a permittee to employ BMPs to avoid the introduction and spread of invasive species and noxious weeds.⁵⁷⁹

4. Wildlife and habitat

447. Wildlife using the right-of-way are expected to be displaced during construction due to increased human activity. Most wildlife would return to the area after construction.⁵⁸⁰

448. Impacts to terrestrial species will be intermittent, temporary, and localized during construction. While direct significant impacts might occur to individuals, population level impacts are not anticipated. These short-term, localized impacts can be minimized. Operational impacts are expected from continued maintenance of the right-of-way. These intermittent but long-term impacts will be of a small size.⁵⁸¹

449. There are no DNR WMAs, SNAs, or Migratory Waterfowl Feeding and Resting Areas or National Audubon Society Important Bird Areas within the local vicinity of any routing option. There are also no WPAs or National Wildlife Refuge lands within the local vicinity of any of the routing options.⁵⁸²

450. Impacts to habitat are primarily associated with widening existing corridors. These long-term impacts are unavoidable. The Proposed Route crosses the MBS SOBS (Cedar 2-3), which has moderate quality habitat and portions of the Site are native prairie areas. These types of areas provide higher quality habitat than what is typically available on the primarily agricultural landscape in the Project Area. Additionally, this type of habitat is much more limited in availability. The Cedar 2-3 Site attracts more specialized wildlife species, including species that do not tolerate human disturbance as well as generalist wildlife species more commonly found in agricultural

⁵⁷⁷ *Id.* at 56.

⁵⁷⁸ *Id.* at 74.

⁵⁷⁹ Ex. 107 at Appx. D, §§ 5.3.11, 5.3.12 (EA).

⁵⁸⁰ *Id.* at 353.

⁵⁸¹ *Id.*

⁵⁸² *Id.* at 354-55.

dominated landscapes. Potential impacts to the wildlife utilizing the Cedar 2-3 Site are expected to be minimal and temporary, and these impacts can be avoided or minimized. Big Bend Wind is not going to place any pole structures within the Cedar 2-3 Site, and the area will be spanned by the HVTL. Equipment and machinery will access the Site only if necessary, and disturbance to vegetation and the soil surface will be minimized to the greatest extent practicable.⁵⁸³

451. Overall, potential impacts to wildlife and habitat are expected to be minimal for all routing options, as the primary land cover type being impacted by the Transmission Line is cultivated cropland. Direct impacts to avian species, caused by direct line strikes and electrocutions, are more likely to occur where HVTLs are placed adjacent to larger tracts of habitat, water-bodies, and water-courses, or if the HVTL divides an avian resting area and a feeding area. Bird diverters installed near these areas will help minimize the potential for strike. Potential impacts will be short- and long-term. These localized impacts can be minimized in part and are unavoidable in part.⁵⁸⁴

452. Further, Section 5.3.15 of the Sample Route Permit requires a permittee to cooperate with MNDNR to identify areas where bird flight diverters will be incorporated prevent large avian collisions.⁵⁸⁵

5. Soils

453. Soil compaction and rutting will occur from movement of construction vehicles along the right-of-way and near the Step-Up Substation.⁵⁸⁶ Construction of the Step-Up Substation will result in a small area of new impervious surface. Potential impacts to soils can be mitigated by using BMPs and standard construction practices. A variety of methods can be used to minimize soil erosion.⁵⁸⁷ Further, Section 5.3.7 of the Sample Route Permit requires a permittee to implement soil erosion and sediment control practices.⁵⁸⁸

F. Rare and unique natural resources

454. The Northern long-eared bat, prairie bush clover, abbreviated underwing, great plains toad, phlox moth, Poweshiek Skipperling, and Sullivant's milkweed are state listed species potentially present within one mile of the routing options, but no records of these species were identified within any of the routing option rights-of-way.⁵⁸⁹

455. The Proposed Route crosses one SOBS ranked as moderate, Cedar 2-3, which indicates that the site has been characterized as having records of rare species, NPCs that are moderately disturbed, or strong potential for recovery of NPCs or

⁵⁸³ *Id.* at 353-54.

⁵⁸⁴ *Id.* at 354.

⁵⁸⁵ *Id.* at Appx. D § 5.3.15.

⁵⁸⁶ *Id.* at 341.

⁵⁸⁷ *Id.* at 342.

⁵⁸⁸ *Id.* at Appx. D § 5.3.7.

⁵⁸⁹ *Id.* at 336.

ecological processes.⁵⁹⁰ This site will be spanned, and pole structure placement within this site will be avoided. Implementing these mitigation measures will also avoid impacts to the NPC, Dry Hill Prairie (southern) type areas within the Cedar 2-3 Site. This will also avoid potential impacts to prairie bush clover, Poweshiek Skipperling, abbreviated underwing, and phlox moth, if they were present within the site.⁵⁹¹

456. In the EA, DOC-EERA stated that “[a]ny tree removal should avoid the active season (April 1 - September 30) for the Northern long-eared bat. Ensuring construction and operation are consistent with USFWS guidance would minimize impacts to species.”⁵⁹² In response, Big Bend Wind stated that it did not agree to DOC-EERA’s proposed conditions because it is not consistent with current USFWS guidance or recent Commission permits, which provide that “tree clearing shall occur between August 1 and May 31.” Big Bend Wind further noted that DOC-EERA had not identified a reason to depart from USFWS guidance or recent Commission permits here.⁵⁹³

G. Application of various design considerations

457. The Transmission Line is designed to meet current and projected needs. While the Wind Project and Solar Project will together generate up to 335 MW of renewable energy, the proposed transmission line would be designed, constructed, and operated to be capable of supporting and transmitting up to 374 MW of electricity. The capacity provided by the Transmission Line allows for potential future additional generation in southern Minnesota to be interconnected to the electric grid.⁵⁹⁴

H. Use and paralleling of existing rights-of-way

458. Sharing right-of-way with existing infrastructure or paralleling existing rights-of-way minimizes fragmentation of the landscape and can minimize human and environmental impacts. The Commission considers the use and parallel of existing rights-of-way in determining the most appropriate route for the project. To minimize impacts on the environment and affected landowners, Big Bend Wind looked for routing opportunities that will share existing rights-of-way along road and railroad rights-of-way and field and section lines.⁵⁹⁵

459. *Proposed Route.* The Proposed Route parallels existing road rights-of-way for the majority of its length.⁵⁹⁶

460. *Crandall Alternate Route.* The Crandall Alternate Route is approximately 14.5 miles long and parallels existing infrastructure for the majority of its length.⁵⁹⁷

⁵⁹⁰ Ex. 316 at 81 (Route Permit Application).

⁵⁹¹ Ex. 107 at 341 (EA).

⁵⁹² *Id.* at 379.

⁵⁹³ Ex. 337 at 5 (Ikkala Surrebuttal).

⁵⁹⁴ Ex. 316 at 8 (Route Permit Application).

⁵⁹⁵ Ex. 107 at 287-88 (EA); *see also* Ex. 316 at 9-10 (Route Permit Application).

⁵⁹⁶ Ex. 107 at 287 (EA).

461. *Peaking Plant Alternate Route.* The Peaking Plant Alternate Route is approximately 18 miles long and parallels existing infrastructure for the majority of its length.⁵⁹⁸

462. *Red Segment.* The Alternate Red Segment would have more of its length collocated with roads and is routed further from the Watonwan River.⁵⁹⁹

463. *Yellow Segment.* The Alternate Yellow Segment follows the township road for 0.35 miles before turning and following a parcel line/field edge for 0.5 miles to the Proposed Route.⁶⁰⁰

464. *Purple Segment.* The Alternate Purple Segment begins at the intersection of 420th Street and County Road 128 and follows the south side of 420th east for one mile before turning south along a township minimum maintenance road for one mile and rejoining the Proposed Route. The Alternate Purple Segment would eliminate the need to bury approximately 0.4 Miles of the Proposed Route due to an existing landing strip located on the east side of County Road 128, north of the Watonwan River and south of the farmstead driveway.⁶⁰¹

465. *Blue Segment.* The Alternate Blue Route Segment is essentially the same length as the corresponding segment of the Peaking Plant Alternate Route, but the Peaking Plant Alternate Route would place pole structures in approximately a half mile of agricultural crop field where no fence lines or other right-of-ways currently exist.⁶⁰²

I. Electrical system reliability

466. The NESC are mandatory standards when constructing new facilities or upgrading existing facilities. These NESC ensure that the collection system, the transmission lines, and all associated structures are built from high-quality materials that will withstand the operational stresses placed upon them over the expected lifespan of the equipment, provided routine maintenance is performed.⁶⁰³

467. North American Reliability Corporation (NERC) has established standards to define the reliability requirements for planning and operating electrical transmission in North America.⁶⁰⁴

468. The Transmission Line will be designed and constructed in accordance with applicable reliability standards.⁶⁰⁵ Further, should Big Bend Wind receive a generation interconnection agreement from MISO, electrical reliability will be met.⁶⁰⁶

⁵⁹⁷ See Ex. 316 at 14 (Route Permit Application); Ex. 107 at 287 (EA).

⁵⁹⁸ See Ex. 316 at 12 (Route Permit Application); Ex. 107 at 287 (EA).

⁵⁹⁹ Ex. 316 at 13 (Route Permit Application).

⁶⁰⁰ *Id.*

⁶⁰¹ *Id.* at 13-14.

⁶⁰² Ex. 107 at 266 (EA).

⁶⁰³ *Id.* at 49.

⁶⁰⁴ *Id.*

J. Costs of constructing, operating, and maintaining the facility

469. The total estimated cost of the Transmission Line along the Proposed Route is approximately \$12-14 million. This estimate is an engineering estimate and expected to reflect actual Project costs within 20 percent. Final costs are dependent on a variety of factors, including the approved route, timing of construction, cost of materials, and labor.⁶⁰⁷

470. The anticipated annual operating and maintenance costs for the Transmission Line is approximately \$1,500 per mile.⁶⁰⁸

K. Adverse human and natural environmental effects that cannot be avoided

471. Transmission lines are infrastructure projects that have unavoidable adverse human and environmental impacts. Even with mitigation strategies, certain impacts cannot be avoided.⁶⁰⁹

472. The Transmission Line will have permanent aesthetic impacts, temporary construction-related impacts, permanent impacts on agriculture, and permanent impacts on the natural environment.⁶¹⁰ The Proposed Route, however, has been sited to minimize adverse human and environmental impacts.⁶¹¹

L. Unavoidable, irreversible, and irretrievable commitments of resources

473. Resource commitments are irreversible when it is impossible or very difficult to redirect that resource to a different future use; an irretrievable commitment of resources means the resource is not recoverable for later use by future generations.⁶¹²

474. Irreversible impacts include the land required to construct the Transmission Line. While it is possible that the structures, conductors, and substation could be removed and the right-of-way restored to previous conditions, this is unlikely to happen in the foreseeable future (approximately 50 years). Certain land uses within the right-of-way will no longer be able to occur, especially at the Step-Up Substation.⁶¹³

475. Irreversible and irretrievable commitments are anticipated to occur for all segment alternatives and not to vary significantly among alternatives.⁶¹⁴

⁶⁰⁵ Ex. 316 at 6 (Route Permit Application).

⁶⁰⁶ Ex. 107 at 367 (EA).

⁶⁰⁷ Ex. 316 at 7 (Route Permit Application).

⁶⁰⁸ *Id.*

⁶⁰⁹ Ex. 107 at 362 (EA).

⁶¹⁰ *Id.*

⁶¹¹ Ex. 316 at 9 (Route Permit Application).

⁶¹² Ex. 107 at 363 (EA).

⁶¹³ *Id.*

⁶¹⁴ *See. id.* at 362-63.

M. Summary of factors analysis

476. As set forth in the EA, the applicable routing factors are similar across all routing alternatives in this record, with the Peaking Plant Alternate Route having greater impacts on agriculture and the Proposed Route having potentially greater impacts on rare and unique habitats (with respect to a moderate ranked MBS Site of Biodiversity Significance). However, as discussed above and in the EA, Big Bend Wind has committed to construction and pole structure placement to avoid impacts to the site identified in the EA along the Proposed Route and, as such, impacts across all routing alternatives are similar.⁶¹⁵ These factors, together with the fact that the Proposed Route terminates at Big Bend Wind's identified POI, support selection of the Proposed Route for the Transmission Line.

III. Route Permit Conditions

477. The Sample Route Permit includes proposed permit conditions that apply to right-of-way preparation, construction, clean-up, restoration, operation, maintenance, abandonment, decommission, and other aspects of the Transmission Line. Many of the conditions contained in the Sample Route Permit were established as part of the route permit proceedings of other transmission lines permitted by the Commission.

478. Big Bend Wind did not object to DOC-EERA's recommendation that a condition regarding an independent agency monitor be included in the Route Permit. Big Bend Wind proposed the following language, with which DOC-EERA agreed:

Section 6.2 Independent Monitor: Prior to any construction, the Permittee shall propose a scope of work and identify one independent third party agency monitor on behalf of the Department of Commerce. The scope of work shall be developed in consultation with and approved by the Department of Commerce. This third-party monitor will report directly to and will be under the control of the Department of Commerce with costs borne by the Permittee. The Permittee shall file with the Commission the scope of work 30 days prior to commencing construction and the name, address, email, phone number, and emergency phone number of the third-party monitor 14 days prior to commencing any construction or right-of-way preparation and upon any change that may occur during the construction of the project and restoration of the right-of-way.⁶¹⁶

479. Although not identified in the Sample Route Permit, in the EA, DOC-EERA recommended a condition regarding tree removal timetables that would require any tree clearing to be conducted between October 1 and March 30 to mitigate impacts to

⁶¹⁵ *Id.* at 379-80; Ex. 337 at 5 (Ikkala Surrebuttal).

⁶¹⁶ Ex. 337 at Sched. H (Ikkala Surrebuttal); DOC-EERA Public Hearing Comments at 2 (Feb. 22, 2022) (eDocket No. 20222-183059-01).

Northern long-eared bats.⁶¹⁷ Big Bend Wind did not agree to this condition as proposed by DOC-EERA because it is not consistent with current USFWS guidance or recent Commission permits, which instead provides that “tree clearing shall occur between August 1 and May 31.”⁶¹⁸ Because the record does not support a departure from USFWS guidance or recent Commission permits, to the extent a condition is included in the route permit related to tree removal timetables, the record supports the condition as identified by Big Bend Wind.

Red Rock Solar Certificate of Need

I. Certificate of Need Criteria

480. A “large energy facility” is “any electric power generating plant or combination of plants at a single site with a combined capacity of 50,000 kilowatts or more and transmission lines directly associated with the plant that are necessary to interconnect the plant to the transmission system.”⁶¹⁹

481. A Certificate of Need is required for all large energy facilities.⁶²⁰ Because Red Rock Solar proposes to build a project generating up to 60 MW, it must obtain a Certificate of Need from the Commission for this Project.⁶²¹

482. As noted above, Minn. Stat. § 216B.243 and Minn. R. ch. 7849 set forth the criteria for issuance of a certificate of need.

II. Application of Certificate of Need Criteria to the Solar Project

A. Probable result of denial (Minn. R. 7849.0120(A))

483. Under Minn. R. 7849.0120(A), the Commission must examine whether “the probable result of denial would be an adverse effect upon the future adequacy, reliability, or efficiency of energy supply to the applicant, to the applicant’s customers, or to the people of Minnesota and neighboring states.” The Commission considers multiple factors, including the forecasted need, available energy resources, and the advantages and disadvantages of utilizing alternative resources.⁶²²

484. The Solar Project will provide up to 60 MW of nameplate capacity to meet the electricity needs of Minnesota and the region. Denial of the CN Application would result in the loss of a significant amount of electricity needed to satisfy state and regional demand and would deny utilities and other customers the opportunity to

⁶¹⁷ Ex. 107 at 379 (EA).

⁶¹⁸ Ex. 337 at 5 (Ikkala Surrebuttal).

⁶¹⁹ Minn. Stat. § 216B.2421, subd. 2(1).

⁶²⁰ Minn. Stat. § 216B.243, subd. 2.

⁶²¹ See *id.*

⁶²² *Northern States Power Co.*, 2010 WL 4608342, at *4-5; see also *Great River Energy*, 2010 WL 2266138, at *3-4 (affirming grant of certificate, even when evidence showed general decreases in energy needs over the next decade because, among other things, “forecasts were only one of the factors the MPUC considered in its decision to grant the certificates of need”).

purchase clean, low-cost energy that will count toward satisfying renewable energy standards and goals. There is a significant body of state legislative policy requiring utilities to obtain a certain percentage of their total energy resources from renewable energy, which supports the need for reliable, efficient renewable resources, like the solar energy produced by the Solar Project. Likewise, the generation fleet in the MISO region is in transition, and MISO is engaged in active analysis and planning to enable the transition to lower carbon resources. The Solar Project is only one part of the transition to less carbon intensive energy, and this shift to new generation technology will continue, even absent the Project.⁶²³ The Solar Project layout has been designed to efficiently utilize this solar resource while minimizing potential human and environmental impacts.

1. Accuracy of the Applicant's forecast of demand (Minn. R. 7849.0120(A)(1))

485. Minnesota Rule 7849.0120(A)(1) requires consideration of “the accuracy of the applicant’s forecast of demand for the type of energy that would be supplied by the proposed facility” when determining if denial of a CN application would have an adverse effect.

486. Red Rock Solar was granted an exemption to Minn. R. 7849.0270, which requires an applicant to provide information concerning its system peak demand and annual energy consumption. Instead, Red Rock Solar was required to provide information about regional demand, consumption, and capacity.⁶²⁴

487. Analyzing this requirement, DOC-DER concluded that Red Rock Solar has met this factor. Relying on the Commission’s Plum Creek Order, DOC-DER explained that the Commission previously found that there is no requirement that an applicant

present a PPA, IRP, biennial transmission project report, or any other specific data to demonstrate demand. The Legislature contemplated that independent power producers would construct such projects and did not require them to enter into power purchase agreements before obtaining a certificate of need. Rather, the Commission may evaluate demand using any data it finds persuasive, on a case-by-case basis.⁶²⁵

In the Plum Creek Order, the Commission concluded that the applicant had

showed that utilities and commercial and industrial customers have reported strong clean energy goals above and beyond RES requirements, and additional renewable energy sources will be needed to meet that demand. Furthermore, utilities plan to retire coal-based generating units across the region in the coming years,

⁶²³ Ex. 317 at 9-10 (RR-CN Application).

⁶²⁴ Ex. 806 at 5 (DOC-DER Comments).

⁶²⁵ *Id.* at 4.

and renewable energy sources are expected to fill some of the resulting capacity needs. These established goals and plans are strong evidence of a utility's intention for future energy development and can be used to demonstrate demand, especially when consistent with stated public policy goals.⁶²⁶

488. DOC-DER noted that, as in the Plum Creek Order, Red Rock Solar cited several sources that create a need for the Solar Project. First, Red Rock Solar cited the integrated resource plans, renewable energy goals, and carbon dioxide emissions reduction goals of Xcel Energy, Otter Tail Power Company, Minnesota Power, and Southern Minnesota Municipal Power Agency. Second, Red Rock Solar cited to Minn. Stat. §§ 216C.055, 216H.026 as supporting the need for renewable energy. Third, Red Rock Solar cited corporations turning to renewable energy to save money and meet sustainability goals. Commercial and industrial customers either purchase renewable energy directly or obtain renewable benefits and cost savings through financially settled contracts (also known as virtual power purchase agreements). Fourth, Red Rock Solar stated that retirements of coal-based generating units are expected across the MISO region, and renewable generation resources are expected to fill the resulting capacity needs. Therefore, DOC-DER concluded that Red Rock Solar's forecast of the need for the renewable energy expected to be produced by the Solar Project is reasonable.⁶²⁷

489. Given the undisputed accuracy of the demand data provided, Red Rock Solar has satisfied Minn. R. 7849.0120(A)(1).

2. Effects of Applicant's conservation programs (Minn. R. 7849.0120(A)(2))

490. Minnesota Rule 7849.0120(A)(2) requires consideration of "the effects of the applicant's existing or expected conservation programs and state and federal conservation programs."

491. The Commission granted Red Rock Solar an exemption from this requirement, and DOC-DER concluded that it is unlikely that the regional needs for solar energy at the scale indicated by Red Rock Solar could be met through conservation programs.⁶²⁸

3. Promotional practices (Minn. R. 7849.0120(A)(3))

492. Minn. R. 7849.0120(A)(3) requires consideration of the effects of promotional practices of the applicant that may have given rise to the increase in the energy demand, particularly promotional practices which have occurred since 1974.

⁶²⁶ *Id.* at 4-5.

⁶²⁷ *Id.* at 5.

⁶²⁸ *Id.* at Att. 1.

493. This subfactor correlates to Minn. Stat. § 216B.243, subd. 3(4), which requires the Commission, in assessing need, to consider “promotional activities that may have given rise to the demand for this facility.”

494. The Commission granted Red Rock Solar an exemption from this requirement. because Red Rock Solar does not have captive retail customers to consider. Further, Red Rock Solar stated that it has not engaged in promotional activities that could have given rise to the need for the electricity to be generated by the proposed Project.⁶²⁹

4. Ability of facilities not requiring a CN to meet future demand (Minn. R. 7849.0120(A)(4))

495. Minn. R. 7849.0120(A)(4) requires consideration of “the ability of current facilities and planned facilities not requiring certificates of need to meet the future demand.” Alternatives not requiring a Certificate of Need can be either generation or transmission facilities.

496. This subfactor correlates, in part, to Minn. Stat. § 216B.243, subd. 3(6), which requires the Commission to consider “possible alternatives for satisfying the energy demand or transmission needs including but not limited to potential for increased efficiency and upgrading of existing energy generation and transmission facilities, load-management programs, and distributed generation.”

497. The primary alternatives to the proposed facilities are purchases from renewable facilities outside Minnesota or construction of renewable Minnesota facilities that are small enough not to require certificates of need (less than 50 MW). As an IPP, Red Rock Solar is a producer or seller, rather than purchaser, of electric generation. A renewable facility of less than 50 MW would not contribute as substantial an amount of renewable energy towards the Minnesota RES or towards a utility’s need for additional solar resources and would not benefit as much from economies of scale as the proposed Project. In addition, as an IPP Red Rock Solar has the incentive to site generation in an economically efficient manner inside or outside Minnesota. Further, DOC-DER noted that any party wishing to do so may propose an alternative to the proposed Solar Project, and that no party had done so. DOC-DER concluded that current and planned facilities not requiring a CN have not been demonstrated to be more reasonable than the proposed Solar Project, and the record supports this conclusion.⁶³⁰

5. Effect of facility in making efficient use of resources (Minn. R. 7849.0120(A)(5))

498. Minn. R. 7849.0120(A)(5) requires consideration of “the effect of the proposed facility, or a suitable modification thereof, in making efficient use of resources.”

⁶²⁹ *Id.* at 15.

⁶³⁰ *Id.* at 10.

499. The Solar Project offers an opportunity to maximize the economic attributes that benefit the local community and deliver an overall cost-competitive energy project. The Solar Project's strong solar resource, proximity to existing electrical and transportation infrastructure, and ability to create a construction-efficient layout are some of the major benefits of the Solar Project. Further, the Solar Project's status as part of the state's first hybrid wind/solar project presents a unique opportunity to add complementary renewable generation in a cost-efficient manner.⁶³¹

500. In summary, the record demonstrates that Red Rock Solar has satisfied each of the five sub-factors of Minn. R. 7849.0120(A).

B. A more reasonable and prudent alternative to the facility has not been demonstrated (Minn. R. 7849.0120(B))

501. To grant a Certificate of Need, Minn. R. 7849.0120(B) requires that "a more reasonable and prudent alternative to the proposed facility has not been demonstrated by a preponderance of the evidence on the record." This factor relates to Minn. Stat. § 216B.243, subd. 3(6), which requires the Commission to consider "possible alternatives for satisfying the energy demand or transmission needs including but not limited to potential for increased efficiency and upgrading of existing energy generation and transmission facilities, load-management programs, and distributed generation."

502. Consistent with state requirements, Red Rock Solar analyzed multiple alternatives, as did the EA. In its CN Application, Red Rock Solar discussed, among other things, new transmission, wind power, hydropower, biomass, and emerging technologies. It concluded that the Solar Project is the best alternative for meeting the capacity and renewable energy needs in Minnesota and the region in the near term. All other potential alternatives reviewed by Red Rock Solar fall short in one or more categories. Red Rock Solar's analysis demonstrated that the Project is a cost-effective energy resource; the Project uses commercially proven and reliable generating technology for the electrical generation output needed; and the Project is the energy source appropriate for the site selected for the Project.⁶³²

503. The EA analyzed the hybrid Wind and Solar Projects as proposed, a 335 MW solar facility, a 335 MW wind energy and solar facility hybrid located elsewhere in the state, a 335 MW solar facility with battery storage located elsewhere in the state, and the no-build alternative.⁶³³ The EA did not conclude that any of these alternatives were more reasonable and prudent than the Projects as proposed.

⁶³¹ Ex. 317 at 7 (RR-CN Application).

⁶³² *Id.* at 26.

⁶³³ Ex. 107 at 69-75 (EA).

1. Size, type, and timing of proposed facility compared to reasonable alternatives (Minn. R. 7849.0120(B)(1))

504. Minn. R. 7849.0120(B)(1) requires consideration of “the appropriateness of the size, the type, and the timing of the proposed facility compared to those of reasonable alternatives.” Each of these three categories of alternatives is discussed below.

505. *Size.* Regarding size, although collective information submitted by the utilities subject to the Minnesota RES indicates that there is sufficient energy in aggregate to meet the RES and SES, this does not consider the potential need for additional renewable resources from individual utilities with insufficient energy to meet RES. Additional renewable energy may also be required as power purchase agreements involving renewable resources expire. Additionally, utilities in neighboring states may have a need for renewable energy. Further, the Solar Project is sized to take advantage of economies of scale while also making efficient use of existing transmission capacity. Thus, DOC-DER concluded that the proposed Project’s size is not excessive and therefore is reasonable, and the record supports this conclusion.⁶³⁴

506. *Type.* The Commission granted Red Rock Solar an exemption to Minn. R. 7849.0250(B)(1)-(3), (5) and a partial exemption to data requirement (4), to the extent that the Rule requires discussion of non-renewable alternatives. The goal of the Solar Project is to provide renewable energy that will help utilities satisfy Minnesota’s RES or SES. Given these factors, along with the preference for renewable resources in Minnesota Statutes, DOC-DER concluded that the proposed Project’s type is reasonable, and the record supports this conclusion.⁶³⁵

507. *Timing.* The timing of the Solar Project generally coincides or precedes the anticipated need for solar additions of multiple utilities in their IRPs as discussed in the forecast section above. As DOC-DER noted, current IRPs address anticipated needs through the year 2034. Thus, the proposed Project is timed to be available to meet the IRP needs. DOC-DER explained that: there will likely not be a one-to-one match between CN applications based on the regional need for renewable generation and Minnesota utilities’ RES compliance level; additional renewable resources may be needed for certain Minnesota utilities to meet future RES requirements due to capacity expirations; and capacity additions are typically added in “chunks” due to the benefits of economies of scale. In summary, DOC-DER concluded that the timing of the Solar Project is reasonable, and the record supports this conclusion.⁶³⁶

508. As summarized above, the record reflects that Red Rock Solar has considered the size, type, and timing of the Solar Project compared to those of the reasonable alternatives and found that the Project is appropriate. Thus, the Applicant has satisfied Minn. R. 7849.0120(B)(1).

⁶³⁴ Ex. 806 at 7 (DOC-DER Comments).

⁶³⁵ *Id.* at 8.

⁶³⁶ *Id.* at 6, 8.

2. Cost of the facility and the energy to be supplied compared to reasonable alternatives (Minn. R. 7849.0120(B)(2))

509. Minn. R. 7849.0120(B)(2) requires consideration of “the cost of the proposed facility and the cost of energy to be supplied by the proposed facility compared to the costs of reasonable alternatives and the cost of energy that would be supplied by reasonable alternatives.”

510. The Commission granted Red Rock Solar an exemption to Minn. R. 7849.0250(C), which requires an applicant to provide a description of alternatives that could provide electric power at the asserted level of need. Only details regarding renewable alternatives need be provided, including an estimate of the proposed Project’s effect on wholesale rates in Minnesota or the region.⁶³⁷

511. Red Rock Solar intends to sell the power produced from the proposed Project to a potential buyer, one possibly being an investor-owned utility within Minnesota. In the event a PPA is reached with a Minnesota utility, the Commission will have the opportunity to review the terms and costs associated with the PPA in its own proceeding. The Solar CN Application also included a discussion of alternatives to the proposed Solar Project, including, but not limited to hydropower, biomass, wind, and emerging technologies. Red Rock Solar concluded that solar energy resources are cost effective when compared with other renewable resources. DOC-DER concluded that the data provided by Red Rock Solar is reasonable and demonstrates solar energy’s cost advantages and disadvantages relative to other new, renewable sources, and the record supports this conclusion.⁶³⁸

512. Further, because the Solar Project would not be subject to fluctuations in fuel costs, the Solar Project could help stabilize or lower electricity prices in the state and region. DOC-DER concluded that the cost of the Solar Project and the cost of energy to be supplied by the proposed Project is reasonable compared to the costs of reasonable alternatives and the cost of energy that would be supplied by reasonable alternatives, and the record supports this conclusion.⁶³⁹

513. Thus, Red Rock Solar has satisfied Minn. R. 7849.0120(B)(2).

3. Effects of facility on natural and socioeconomic environments compared to reasonable alternatives (Minn. R. 7849.0120(B)(3))

514. Minn. R. 7849.0120(B)(3) requires consideration of “the effects of the proposed facility upon the natural and socioeconomic environments compared to the effects of reasonable alternatives.”

⁶³⁷ *Id.* at 10.

⁶³⁸ *Id.* at 11.

⁶³⁹ *Id.*

515. The Solar Project will have relatively minor pollution impacts. Approximately 451.8 acres of predominately agricultural land would be permanently impacted by construction and installation of the proposed Solar Project. As an emission-free fuel, solar does not result in releases of CO₂, NO_x, and similar pollutants. Therefore, consideration of the effects on the natural and socioeconomic environments using the Commission-approved externality values would not impact the overall cost analysis against the proposed Project. Therefore, DOC-DER concluded this sub-criterion had been met, and the record supports this conclusion.⁶⁴⁰

516. Likewise, the EA and Solar CN Application contain analysis concerning the human and environmental effects of the Solar Project and demonstrate that the Solar Project compares favorably with other alternatives in the record with respect to this factor.⁶⁴¹

517. Thus, Red Rock Solar has satisfied Minn. R. 7849.0120(B)(3).

4. Reliability of facility compared to reasonable alternatives (Minn. R. 7849.0120(B)(4))

518. Minn. R. 7849.0120(B)(4) requires consideration of “the expected reliability of the proposed facility compared to the expected reliability of reasonable alternatives.”

519. This subfactor correlates, in part, to Minn. Stat. § 216B.243, subd. 3(9), which requires consideration of “the benefits of enhanced regional reliability, access, or deliverability to the extent these factors improve the robustness of the transmission system or lower costs for electric consumers in Minnesota.”

520. Red Rock Solar estimated that the Solar Project will have an availability of about 99 percent, which it stated is consistent with industry standards. In addition, Red Rock Solar estimated a net capacity factor of between approximately 24 and 27percent, which is within the National Renewable Energy Laboratory’s Utility-Scale Energy Technology Capacity Factors range.⁶⁴²

521. Thus, the record demonstrates that Red Rock Solar has satisfied Minn. R. 7849.0120(B)(4).

5. Conclusion regarding Minn. R. 7849.0120(B)

522. As discussed above, Red Rock Solar has satisfied each of the four sub-factors of Minn. R. 7849.0120(B).

523. No other party submitted a more reasonable and prudent alternative to the proposed Project that satisfies the requirements of Minn. R. 7849.0110, .0120.

⁶⁴⁰ *Id.*

⁶⁴¹ Ex. 107 at 76-254 (EA).

⁶⁴² Ex. 806 at 12 (DOC-DER Comments).

C. The facility will provide benefits compatible with protecting the natural and socioeconomic environments

524. Minn. R. 7849.0120(C) requires that “by a preponderance of evidence on the record, the proposed facility, or a suitable modification of the facility, will provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including human health.”

525. Applying the factors set forth in Minn. R. 7849.0120(C), the energy produced by the Solar Project will provide significant, numerous, and varied societal benefits, with minimal negative impacts.⁶⁴³

1. Relationship of facility to overall state energy needs (Minn. R. 7849.0120(C)(1))

526. Minnesota Rule 7849.0120(C)(1) requires consideration of “the relationship of the proposed facility, or a suitable modification thereof, to overall state energy needs.”

527. A review of the most recently filed IRPs indicates that Minnesotans are expected to have little change in their electricity requirements. All three utilities, however, are proposing retirements of large baseload coal units. As a result, over time these and other utilities are planning on adding wind and solar generating capacity. The Solar Project could help Minnesota meet its energy needs while supporting the state’s renewable energy and GHG reduction goals.⁶⁴⁴ DOC-DER concluded that the Solar Project fits the state’s overall energy needs, and the record supports this conclusion.⁶⁴⁵

528. Further, Minn. Stat. § 216B.243, subd. 3(3) requires that the Commission consider the relationship of the proposed facility to other state energy needs as described in the most recent Quadrennial Report prepared under Minn. Stat. § 216C.18.⁶⁴⁶ The Quadrennial Report discusses not only utility efforts to meet RES requirements, but also voluntary green pricing programs. Green pricing programs provide Minnesota ratepayers the option to voluntarily purchase energy from renewable sources to meet all or a portion of their energy requirements. The Quadrennial Report also describes the GHG reduction goals in Minn. Stat. § 216H.02 and the role renewable energy continues to play in driving down the carbon intensity of electricity generated in Minnesota. Thus, as a source of competitively priced, no emission, solar energy, the Solar Project is compatible with Minnesota’s energy needs.⁶⁴⁷

⁶⁴³ Ex. 317 at 12 (RR-CN Application).

⁶⁴⁴ Ex. 806 at 6 (DOC-DER Comments); see *also* Minn. Stat. §§ 216B.1691, 216H.02.

⁶⁴⁵ Ex. 806 at 6 (DOC-DER Comments).

⁶⁴⁶ See Ex. 314 at 11 (BB-CN Application).

⁶⁴⁷ *Id.* at 12.

2. Effects of facility on natural and socioeconomic environments (Minn. R. 7849.0120(C)(2))

529. Minnesota Rule 7849.0120(C)(2) requires consideration of “the effects of the proposed facility, or a suitable modification thereof, upon the natural and socioeconomic environments compared to the effects of not building the facility.”

530. In general, the socioeconomic impacts associated with the Solar Project will be positive. Wages will be paid, and expenditures will be made to local businesses and landowners during the Project’s construction and operation. The construction and operation of the Project will increase Cottonwood County’s tax base. In addition, lease and purchase payments to landowners will offset potential financial losses associated with removing a portion of their land from agricultural production. Agricultural production would be allowed to continue in the area outside of the fence line of the solar facility during construction and operation of the Project. In addition, Red Rock Solar has voluntarily developed an AIMP detailing methods to minimize soil compaction, preserve topsoil, and establish and maintain appropriate vegetation. This will help to ensure the Project is designed, constructed, operated, and ultimately decommissioned and then restored in a manner allowing the land to be returned to its original agricultural use in the future. Moreover, conversion of the Project Footprint to non-row-crop uses for the life of the Project may also have beneficial environmental impacts such as soil building, erosion control, habitat for wildlife, and protection of groundwater and surface water resources from nitrogen pollution.⁶⁴⁸

531. Long-term benefits to Cottonwood County’s tax base because of the construction and operation of the Project will contribute to improving the local economy. For example, the Project will provide production tax payments to Cottonwood County of approximately \$208,000 annually over 30 years for a total of approximately \$6.2 million. Additionally, Midway Township will receive approximately \$52,000 annually over 30 years for a total of approximately \$1.6 million. Not building an electrical generation facility would result in no physical impact to the environment in Cottonwood County. However, not building the Project would also not provide an additional source of tax revenues to the county, an increase in the income stream to residences and businesses, or an increase in the amount of low-cost, clean, reliable renewable energy available to state or regional utilities and their customers. The Project will have a minimal impact on the physical environment, while simultaneously providing significant benefits.⁶⁴⁹

3. Effects of facility in inducing future development (Minn. R. 7849.0120C(3))

532. Minnesota Rule 7849.0120(C)(3) requires consideration of “the effects of the proposed facility, or a suitable modification thereof, in inducing future development.”

⁶⁴⁸ Ex. 317 at 13 (RR-CN Application).

⁶⁴⁹ *Id.* at 14.

533. Although the Solar Project is not expected to directly affect development in Cottonwood County, the Solar Project will provide significant benefits to the local economy and local landowners. Landowners in the Solar Project area will benefit from the lease and purchase payments, and installation of solar energy infrastructure will increase the local tax base in the county and township in which the Project is sited. The Solar Project will also provide significant income opportunities for local residents through the creation of temporary construction positions.⁶⁵⁰

4. Socially beneficial uses of facility output (Minn. R. 7849.0120(C)(4))

534. Minnesota Rule 7849.0120(C)(4) requires consideration of “the socially beneficial uses of the output of the proposed facility, or a suitable modification thereof, including its uses to protect or enhance environmental quality.”

535. This sub-factor relates to Minn. Stat. § 216B.243, subd. 3(5), which, in relevant part, requires the Commission to consider “the benefits of this facility, including its uses to protect or enhance environmental quality.”

536. The Project will produce affordable, clean, renewable energy that will help meet energy demands for the RES, the SES, and other clean energy and carbon reduction standards. In addition, the local economy will benefit from the landowner lease and purchase payments from the Project, production taxes, job creation, and local spending. It will also provide carbon-free energy that will assist in meeting Minnesota’s carbon and greenhouse gas reduction goals.⁶⁵¹

537. Thus, in summary the record demonstrates that Red Rock Solar has satisfied Minn. R. 7849.0120(C), in that the record demonstrates that the Solar Project will provide benefits compatible with protecting the human and natural environments.

D. Whether the facility will comply with relevant policies, rules, and regulations (Minn. R. 7849.0120(D))

538. Minnesota Rule 7849.0120(D) requires that “the record does not demonstrate that the design, construction, or operation of the proposed facility, or a suitable modification of the facility, will fail to comply with relevant policies, rules, and regulations of other state and federal agencies and local governments.”

539. This factor relates to Minn. Stat. § 216B.243, subd. 3(7), which requires the Commission, in assessing need, to consider “the policies, rules, and regulations of other state and federal agencies and local governments.”

540. The Solar Project would meet or exceed the requirements of all federal, state, and local environmental laws and regulations. Red Rock Solar provided a table listing the potential permits and approvals needed for the Solar Project. DOC-DER

⁶⁵⁰ *Id.*

⁶⁵¹ *Id.* at 15.

indicated that it has no reason to believe that Red Rock Solar will fail to comply with the requirements of the listed federal, state, and local governmental agencies. DOC-DER concluded that the record does not demonstrate that the design, construction, or operation of the Solar Project, or a suitable modification of the facilities, will fail to comply with relevant policies, rules, and regulations of other state and federal agencies and local governments, and the record supports this conclusion.⁶⁵²

541. Based on the foregoing, the Applicant has satisfied Minn. R. 7849.0120(D).

542. As discussed in detail above, Red Rock Solar has satisfied each of the relevant factors and sub-factors set forth in Minn. R. 7849.0120(A) through (D) necessary to determine that a Certificate of Need must be granted for the Solar Project.

III. Other applicable statutory considerations

543. As explained by DOC-DER in its comments, there are two applicable Minnesota statutes which provide a preference for renewable resources in resource planning and acquisition decisions.⁶⁵³ Minnesota law indicates a clear preference for renewable facilities, and the proposed Project is consistent with that preference.⁶⁵⁴

544. Further, Minn. Stat. §§ 216B.2426, .169 provide for the consideration of distributed generation. As noted by DOC-DER, no proposals for distributed generation as an alternative to the Solar Project have been filed in this proceeding, and DOC-DER stated that the requirement to consider distributed generation had been met.⁶⁵⁵

Red Rock Solar Site Permit

I. Site Permit Criteria

545. Large electric power generating plants (LEPGP) are governed by Minnesota Statutes, chapter 216E and Minnesota Rules, chapter 7850. Minn. Stat. § 216E.01, subd. 5, defines a “large electric power generating plant” as “electric power generating equipment and associated facilities designed for or capable of operation at a capacity of 50,000 kilowatts or more.”

546. On June 29, 2020, Red Rock Solar submitted information to the Minnesota Department of Commerce in response to the latter’s request for a size determination for the Solar Project. On July 21, 2020, DOC-EERA informed Red Rock Solar that, based on the information provided, the Solar Project is subject to the Commission’s siting authority under Minn. Stat. ch. 216E. Therefore, a site permit is required prior to construction of the Solar Project.

⁶⁵² Ex. 806 at 15 (DOC-DER Comments).

⁶⁵³ *Id.* at 9 (citing Minn. Stat. §§ 216B.243, subd. 3a, .2422, subd. 4).

⁶⁵⁴ *Id.*

⁶⁵⁵ *Id.* at 12-13.

547. An LEPGP powered by solar energy is eligible for the alternative permitting process authorized by Minn. Stat. § 216E.04.⁶⁵⁶ Red Rock Solar filed the Red Rock Site Permit Application under the process established by the Commission in Minn. R. 7850.2800-.3900.

548. Under Minn. Stat. § 216E.04, for an LEPGP permitted under the alternative permitting process, DOC-EERA prepares for the Commission an environmental assessment containing information on the human and environmental impacts of the proposed project and addresses mitigating measures. The environmental assessment is the only state environmental review document required to be prepared on the Solar Project.⁶⁵⁷

II. Application of Site Permit Criteria to the Solar Project

A. Human settlement

1. Displacement

549. Construction of the Solar Project will not displace residents or buildings.⁶⁵⁸

2. Noise

550. Construction of the Solar Project is anticipated to generate noise with the heavy equipment and increased vehicle traffic associated with the transport of construction materials and personnel to and from the work areas.⁶⁵⁹

551. During operation of the Solar Project, the primary source of noise will be from the inverters, and to a lesser extent from the transformers and rotation of tracking systems. The anticipated inverter noise is predicted to be 63.3 dBA at 50 feet from the source and is modelled to dissipate to 50 dBA within 233 feet from the inverter. The tracking equipment is predicted to be 64.3 dBA at 50 feet and noise dissipation to 50 dBA is anticipated to occur within 130 feet of the trackers. The proposed solar portion of the hybrid project has been designed so the inverters will be located 1,122 feet from the nearest residence. Noise from the Red Rock Solar portion of the hybrid project's electric collection system would not be expected to be perceptible. During operations noise impacts for the Red Rock Solar Project are anticipated to be negligible.⁶⁶⁰ In addition, the Sample Site Permit requires a permittee to comply with applicable noise standards.⁶⁶¹

⁶⁵⁶ Minn. Stat. § 216E.04, subd. 2(8).

⁶⁵⁷ Minn. R. 7850.3700, subp. 8.

⁶⁵⁸ Ex. 107 at 96 (EA).

⁶⁵⁹ *Id.* at 107.

⁶⁶⁰ *Id.* at 111.

⁶⁶¹ *Id.* at Appx. C § 4.3.6.

3. Aesthetic impacts

552. Solar energy facilities may create visual impacts; however, being visible is not necessarily the same as being intrusive. Due to their relatively low profile, PV solar facilities will not be visible from great distance; the viewshed and aesthetic impacts will be experienced primarily by nearby residents and people using the roads adjacent to the facilities.⁶⁶²

553. Because of the materials used, glare and reflection should be minimal; today's panels reflect as little as two percent of the incoming sunlight depending on the angle of the sun and assuming use of anti-reflective coatings. Perimeter fencing for solar farms in Minnesota is typically eight-foot wood pole and woven wire fence (i.e., deer fence or an agricultural fence) that shield or minimize the visual impacts.⁶⁶³

554. Red Rock Solar will use down lit security lighting at the Project entrance, and down lit, switch controlled, lights at each inverter to facilitate maintenance activities. With mitigation measures, impacts to light sensitive land uses and the aesthetics of the area will be negligible.⁶⁶⁴

4. Cultural values

555. While negative impacts will occur to specific resource elements, for example, aesthetics, the construction and operation of the Solar Project is not anticipated to impact or alter the work and leisure pursuits of residents in the Red Rock Solar Project Area, or land use in such a way as to impact the underlying culture of the area. There is currently a significant presence of existing transmission lines and operating wind projects in the vicinity of the proposed Solar Project, so the current aesthetics of the Solar Project Area has structures that will be similar to those constructed for this solar project.⁶⁶⁵

5. Recreation

556. The impacts of the Red Rock Solar Project on recreation are anticipated to be minimal, and with mitigation the impacts will be short-term and negligible. There are no public recreational lands within the local vicinity. Depending on the timing of construction of the Solar Project, there could be some additional truck traffic on local roads that may be noticeable to users of the snowmobile trails close to the Solar Project, but general trail and road use regulations should minimize those interactions. Truck traffic during construction could result in indirect impacts to recreation on private lands near the Solar Project area. Operation of the Solar Project will have no long-term impacts to recreational activities.⁶⁶⁶

⁶⁶² *Id.* at 80.

⁶⁶³ *Id.* at 81.

⁶⁶⁴ *Id.* at 93.

⁶⁶⁵ *Id.* at 94.

⁶⁶⁶ *Id.* at 117.

6. Public service and infrastructure

557. With respect to potential road impacts, Red Rock Solar estimates that there will be 15 large truck trips per day, tractor-trailer trips per day will be highly variable, and up to 200 small-vehicle (pickups and automobiles) trips per day in the area during peak construction periods. Since many of the area roadways have annual average daily traffic (AADT) totals that are currently well below capacity, the addition of 766 vehicle trips during peak construction for the wind portion of the proposed hybrid project and the additional 215 vehicle trips during peak construction for the solar portion of the proposed hybrid project would be perceptible, but similar to seasonal variations such as spring planting or autumn harvest.⁶⁶⁷

558. Together with Big Bend Wind, Red Rock Solar is currently coordinating with local jurisdictions to execute a single, cooperative Development, Road Use, and Drainage Agreement to minimize and mitigate impacts to existing roadways. The Development Agreement will address items such as communication with the various road authorities during construction, restoring impacted roadways, and planning the movement of large construction equipment. Red Rock Solar has committed to obtaining all necessary county permits to allow their proposed access roads to intersect with county and township roads.⁶⁶⁸

559. Impacts to local electric, natural gas, telephone, fiber optic cables, and cable television utilities could occur during the construction of the Solar Project. These impacts would only occur if an overhead distribution line or buried utility line was disturbed or damaged during construction activities. With planned mitigation these types of impacts are anticipated to be short-term, isolated, and minimal.⁶⁶⁹

560. Because the Solar Project does not propose the construction of any significant vertical structures, no impacts to any communication systems are anticipated to result from the construction and operation of the Solar Project.⁶⁷⁰

561. The Solar Project is not anticipated to cause any electrical interference impacts.⁶⁷¹

562. Impacts of the Solar Project on the use of emergency services are anticipated to be negligible and will be mitigated if impacts are later identified.⁶⁷²

563. Red Rock Solar does not anticipate any impacts to occur to any FAA registered airports as a result of the construction and operation of the Red Solar portion of the hybrid project.⁶⁷³

⁶⁶⁷ *Id.* at 162-63.

⁶⁶⁸ *Id.* at 164.

⁶⁶⁹ *Id.* at 157.

⁶⁷⁰ *Id.* at 158.

⁶⁷¹ *Id.* at 97.

⁶⁷² *Id.* at 146.

⁶⁷³ *Id.* at 136.

7. Socioeconomics and property values

564. Large electric generation facilities have the potential to impact property values, but the type and extent of impacts, if any, depend upon the location of the facilities and existing land uses in the area.⁶⁷⁴

565. The EA explained that comparable sales data related to the Aurora Distributed Solar and North Star Projects (both utility-scale PV facilities in Minnesota) is becoming available, and very initial results show no property value impacts.⁶⁷⁵

566. The EA concluded that impacts to property values because of the Solar Project are anticipated to be negligible.⁶⁷⁶

567. Utility scale wind and solar development provide economic benefits across all phases of development and across industries, such as manufacturing, construction, operation, and maintenance. Because utility scale wind and solar developments are usually located in rural areas, they can provide noticeable economic impacts on the smaller, rural communities that host them.

568. The Solar Project will increase the local demand for specialized construction labor and increase demand for contractors and material suppliers such as concrete, gravel, fuel, and fill material. The Solar Project is anticipated to require up to 200 people during construction. Some of the workers will be local, and some will likely come from outside the region. It is anticipated that most of the wages earned by local workers will circulate through the local economy. Non-local workers will also inject money into the local economy for food, lodging, fuel, and incidental expenditures. Local contractors and suppliers will be used for portions of the construction. Additional income will be generated for the county and state economy through the circulation and recirculation of dollars paid out by the developer for business expenditures and for state and local taxes. Payments for equipment, fuel, operating supplies, and other products and services benefit local and regional businesses.⁶⁷⁷

569. Once operational, the Solar Project will need one permanent operations and maintenance staff person.⁶⁷⁸ During operations, Red Rock Solar will make lease payments to local landowners, as well as production tax credits to the local government.⁶⁷⁹ The Red Rock Solar Project will pay local landowners \$965,000 annually, a total of \$29,000,000 over the 30-year Project life span, for land lease and purchase payments. The Red Rock Solar Project will provide approximately \$208,000 annually, \$6,200,000 over the life of the Project, in production tax payments to

⁶⁷⁴ *Id.* at 113.

⁶⁷⁵ *Id.* at 114.

⁶⁷⁶ *Id.* at 115.

⁶⁷⁷ *Id.* at 127.

⁶⁷⁸ *Id.*

⁶⁷⁹ *Id.*

Cottonwood County. An additional production tax payment of \$52,000 annually, \$1,600,000 over the life of the Project, will be paid to Midway Township.⁶⁸⁰

570. The EA concludes that the Solar Project is likely to have a short-term positive impact on local labor opportunities, and a short-term (private businesses) and long-term (local governments and lease holders) impact on local economies.⁶⁸¹

8. Zoning and land use

571. The Solar Project is located within Cottonwood County's Agricultural District, and solar energy development is a conditionally permitted use in that district. As such, the Solar Project will not conflict with local zoning ordinances.⁶⁸²

572. There are no lands enrolled in any conservation easements within the Red Rock Solar portion of the Project Area, so no impacts to lands under conservation easements will occur due to the construction and operation of the Red Rock Solar Project.⁶⁸³

573. The Solar Project Area is predominantly rural with sparsely scattered rural residences, farmsteads, commercial livestock operations, agricultural support facilities, and cultivated cropland throughout. The majority of land use in the Solar Project boundary is cultivated cropland, approximately 479.4 acres (99.2 percent); followed by developed (all categories), approximately 3.7 acres (0.8 percent), and deciduous forest comprise, approximately 0.1 acres (< 0.1 percent). Constructing the Solar Project will change land use from agricultural to solar energy production for at least 30 years. The area could then be restored to agricultural use or other planned land uses by implementing appropriate restoration activities.⁶⁸⁴

9. Environmental justice

574. Environmental justice concerns are not anticipated as a result of the Solar Project.⁶⁸⁵

B. Public health and safety

575. The primary source of EMF from the Solar Project will be the PV panel arrays, inverters, collector lines, and the transformer. EMF levels produced at the array and the inverters are anticipated to dissipate to background levels before reaching the nearest residence. The AC collection line connecting transformers to the Solar Substation will also create EMF, but with the collection line being buried at a minimum depth of four feet, EMF levels will dissipate rapidly in the soil and impacts will be

⁶⁸⁰ *Id.* at 128.

⁶⁸¹ *Id.*

⁶⁸² *Id.* at 103.

⁶⁸³ *Id.* at 170.

⁶⁸⁴ *Id.* at 181.

⁶⁸⁵ *Id.* at 100.

negligible. No health impacts from EMF generated by the Solar Project are anticipated.⁶⁸⁶

576. All Project components will be designed and constructed in compliance with applicable electric codes. Electrical inspections will ensure proper installation of all components, and the Project will undergo routine inspection. Construction is subject to federal and state Occupational Safety and Health Administration requirements for worker safety, and must comply with local, state, and federal regulations regarding installation of the facilities.⁶⁸⁷

577. Solar Project workers will handle and store potential hazardous materials appropriately. Leaks or spills will be mitigated using appropriate clean up techniques. The decommissioning plan for the Solar Project addresses PV panel end-of-life issues.⁶⁸⁸

C. Land-based economies

1. Agriculture

578. The construction and operation of the Solar Project will remove all cultivated cropland within the fenced portions of the Project (solar arrays, access roads, and the Solar Project Substation). This will be a long-term and significant impact to the lands within the Solar Project boundary. However, when considered in the full context of Cottonwood County, which has significant acres of cultivated cropland, the 483.3 acres of land removed from crop production will have negligible impacts on local agricultural production.⁶⁸⁹

579. There is a poultry farm located within the Solar Project Area, but the poultry farm is outside of the planned construction footprint of the solar facility. All electrical components of the solar facility will be adequately grounded to meet electrical codes, so no stray voltage impacts to the poultry farm are anticipated.⁶⁹⁰

580. Impacts to agriculture associated with the Solar Project are unavoidable, but economic losses will be mitigated with the payment of land leasing options. Section 4.3.18 of the Sample Permit requires permittees fairly restore or compensate landowners for damages to crops, fences, drain tile, etc. during construction. Other sections address impacts to soils, such as erosion, compaction, and similar concerns. No additional mitigation is proposed.⁶⁹¹

581. Additionally, Red Rock Solar has committed to developing a Vegetation Management Plan (VMP) and AIMP to adequately address short- and long-term

⁶⁸⁶ *Id.* at 140.

⁶⁸⁷ *Id.* at 152.

⁶⁸⁸ *Id.*

⁶⁸⁹ *Id.* at 170.

⁶⁹⁰ *Id.* at 172.

⁶⁹¹ *Id.* at 175.

vegetation management methods and goals and to minimize impacts to agricultural lands being impacted by the Solar Project.⁶⁹²

(1) Prime farmland

582. Minnesota Rule 7850.4400, subpart 4, states that no large electric power generating plant site (including a solar energy generating system) can include more than one-half acres of prime farmland per MW of net generating capacity. This prime farmland exclusion can be waived if “no feasible and prudent alternative” is available or if the Commission varies its rules. Here, the Solar Project would be constructed on more than 0.5 acres of prime farmland per MW of net generating capacity.

583. Red Rock Solar conducted a screening analysis to assess whether the Solar Project meets the “feasible and prudent alternative” threshold. The analysis looked at factors such as high solar resource areas, interconnect locations, and efforts to investigate developable sites, focusing on the southwestern portion of the state. Additionally, Red Rock Solar considered the fact that the Solar Project was being developed as a hybrid project with the Wind Project, so wind resource and land availability to develop the wind portion of the hybrid project were factors to consider. Within this area, Red Rock Solar screened for substations and transmission lines with available capacity, leading to a relatively narrow subset of possible points of interconnection. A potential development location was identified approximately 15 miles from a POI. The Solar Project site was selected due to its proximity to the POI, supportive landowners, and available land currently not under lease with other potential renewable energy project in the area.⁶⁹³

584. Red Rock Solar has incorporated design options to minimize impacts on soil and prime farmland. In addition, Red Rock Solar has developed an AIMP and VMP as mitigation measures. Further, the Solar Project may reduce nitrogen pollution and avoid impacts to sensitive groundwater resources.⁶⁹⁴

585. The record demonstrates that Red Rock Solar evaluated a variety of factors, including cost and non-cost factors, but was unable to locate a feasible and prudent alternative for the site. On this record, there is no feasible and prudent alternative within a reasonable geographic area available to construct the Solar Project and not impact prime farmland. This conclusion is based in part on the consideration of non-economic factors including but not limited to the quality of the solar resource, proximity to existing transmission infrastructure, positive environmental impacts, and furtherance of the State’s renewable energy goals.

⁶⁹² *Id.*

⁶⁹³ *Id.* at 203.

⁶⁹⁴ Ex. 318 at 11-12 (RR-Site Application).

2. Forestry

586. There are no commercial timber companies or other forestry operations within the Solar Project Area and impacts to forestry are anticipated to be negligible.⁶⁹⁵

3. Mining

587. There are no active mining operations within the Solar Project Area, so impacts from the Solar Project are not anticipated.⁶⁹⁶

4. Tourism

588. The Solar Project will be located away from municipalities, county parks, and other public areas typically utilized by visitors to the area. As such, impacts to tourism are not anticipated.⁶⁹⁷

D. Archaeological and historic resources

589. No previously recorded archaeological or historic sites will be directly impacted by the Solar Project. A Phase I archaeological survey of the Solar Project boundary was completed in May of 2020, and no archaeological or historic sites, or historic architectural sites were identified.⁶⁹⁸

590. Further, Red Rock Solar has prepared an Unanticipated Discovery Plan in coordination with Tribes, which has been filed in this record, and Section 4.3.13 of the Sample Site Permit requires a permittee to make every effort to avoid impacts to identified archaeological and historic resources during construction.⁶⁹⁹

E. Natural environment

1. Wildlife

591. The Solar Project is highly fragmented, and 99.6 percent of the land is utilized for agricultural production. Only small areas of forested land and lawn area exist around residences and commercial livestock facilities within the Solar Project Area.⁷⁰⁰

592. The Solar Project will be enclosed by a fence, limiting movement of animals in and out of the facility. Solar facilities permitted by the Commission typically have fences designed to allow small animals to enter the property. Although a variety of birds, small mammals, reptiles, and amphibians are likely to still be able to gain access

⁶⁹⁵ Ex. 107 at 172 (EA).

⁶⁹⁶ *Id.* at 167.

⁶⁹⁷ *Id.* at 168.

⁶⁹⁸ *Id.* at 177.

⁶⁹⁹ *Id.* at Appx. C § 4.3.13.

⁷⁰⁰ *Id.* at 233.

to the property to use the habitats under and around the solar arrays, access will be limited for larger wildlife.⁷⁰¹

593. The potential for habitat fragmentation impacts as a result of the Solar Project is low because the Project Area is sited in a highly agricultural landscape and much of the remaining habitat is disturbed or associated with rural residences and farm sites.⁷⁰²

594. There are no DNR WMAs, SNAs, or Migratory Waterfowl Feeding and Resting Areas or National Audubon Society Important Bird Areas within the Red Rock Solar Project Area, nor are there WPAs or National Wildlife Refuge lands.⁷⁰³

595. In the EA, DOC-EERA recommended that “[f]ield surveys to identify any known wildlife movement corridors within, or through, the Red Rock Solar portion of the hybrid project . . . be considered.”⁷⁰⁴ In response, Red Rock Solar explained that Applicants have undertaken multiple years of wildlife and other environmental studies and analyses related to the Projects.⁷⁰⁵ The EA does not identify any deficiency in the analyses, and the work already undertaken by Applicants is sufficient to address this recommendation, particularly in light of the fact that the Solar Project is proposed on agricultural land (not current wildlife habitat).⁷⁰⁶

2. Vegetation

596. The Solar Project will convert currently cultivated cropland, within the fence-line, to open herbaceous cover under and around the PV panels. The Solar Project Substation, inverter skids, and access roads will be converted to developed land and impervious surfaces.⁷⁰⁷

597. Red Rock Solar has developed a VMP, and they will adopt and follow all measures in the VMP through construction and operation of the Solar Project. The VMP details long-term management of the vegetation established under and around the solar arrays. Red Rock Solar has designed the Solar Project to avoid any tree clearing.⁷⁰⁸

598. In the EA, DOC-EERA noted that MNDNR provided comments on the Solar Project VMP and recommended that Red Rock Solar “use a diverse native prairie species seed mix as indicated” in Minn. Stat. § 216B.1642, subd. 1.⁷⁰⁹ That statutory provision provides that the owner of a ground-mounted solar site “may follow management practices that . . . provide native perennial vegetation and foraging habitat. . . . To the extent practicable, when establishing perennial vegetation and beneficial

⁷⁰¹ *Id.* at 233-34.

⁷⁰² *Id.* at 236.

⁷⁰³ *Id.* at 241-42.

⁷⁰⁴ *Id.* at 245-46.

⁷⁰⁵ Many of these surveys and analyses are listed in the EA. See *id.* at 236.

⁷⁰⁶ Ex. 337 at 8 (Ikkala Surrebuttal).

⁷⁰⁷ Ex. 107 at 208 (EA).

⁷⁰⁸ *Id.* at 210.

⁷⁰⁹ *Id.* at 26.

foraging habitat, a solar site owner shall use native plant species and seed mixes. . . .⁷¹⁰ In response, Red Rock Solar explained that it has already prepared and provided a comprehensive VMP for the Solar Project. The VMP and the Site Application explain the benefits of the seed mixes proposed by Red Rock Solar for the Project. The EA does not identify any deficiencies in the existing VMP or the seed mixes proposed by Red Rock Solar for the Solar Project.⁷¹¹ Red Rock Solar states that it will coordinate additional changes, if any, to the VMP with MNDNR prior to construction.⁷¹² In the Solar Draft Site Permit, submitted by Red Rock Solar, condition 4.3.15 states that the VMP will implement site restoration that provides native perennial vegetation beneficial to gamebirds, song birds, and pollinators.⁷¹³

599. The EA further noted that MNDNR recommends that the existing VMP be updated to include certain additional maps, and Red Rock Solar agreed to provide said maps.⁷¹⁴

3. Soils, geologic, and groundwater resources

600. Red Rock Solar will employ numerous BMPs and mitigation measures to avoid and minimize soil impacts, as described in the EA.⁷¹⁵ Red Rock Solar developed and is committed to an AIMP that details methods to minimize soil compaction, preserve topsoil, and establish and maintain appropriate vegetation to ensure the Project is designed, constructed, operated, and ultimately restored in a manner that would allow the land to be returned to agricultural use.⁷¹⁶

601. Grading, trenching, and pile driving activities associated with the Solar Project are not anticipated to extend to bedrock depth and blasting or excavation of bedrock is extremely unlikely. No impacts to the site geology and bedrock are anticipated for the Solar Project. Impacts to topography for the Solar Project are anticipated to be minimal.⁷¹⁷

602. Homes and farms in the Project Area typically use private wells and septic systems for their household needs. According to the Minnesota Department of Health's Minnesota Well Index online database, there are three wells identified within the Solar Project.⁷¹⁸ The closest well to the Solar Project is 320 feet away, and any necessary dewatering activities completed during construction will be discharged to the ground surface near the location of dewatering, allowing for infiltration and minimization of

⁷¹⁰ Minn. Stat. § 216B.1642, subd. 1.

⁷¹¹ Ex. 337 at 6-7 (Ikkala Surrebuttal).

⁷¹² Applicants' Post-Hearing Brief at 9 (Mar. 18, 2022) (eDocket No. 20223-183968-06).

⁷¹³ Ex. 337 at Sch. G, § 4.3.15 (Ikkala Surrebuttal).

⁷¹⁴ *Id.* at 7.

⁷¹⁵ Ex. 107 at 205 (EA).

⁷¹⁶ *Id.* at 206.

⁷¹⁷ *Id.* at 190.

⁷¹⁸ *Id.* at 214.

potential impacts. No impacts to groundwater resources are anticipated to result from construction or operation of the solar portion of the proposed hybrid project.⁷¹⁹

4. Surface water and wetlands

603. There are two unnamed intermittent streams within the main portion of the Solar Project construction area, and there are three unnamed watercourses crossed by the AC collection line corridor.⁷²⁰

604. The Solar Project will not directly impact any identified PWI watercourses, PWI waterbodies, impaired waters, designated wildlife lakes, Migratory Waterfowl Feeding and Resting Areas, designated trout streams, or Outstanding Resource Value Waters. The Solar Project will not impact any designated floodplains.⁷²¹

605. Protection of surface waters from construction and operation of the Solar Project is implemented through the NPDES permit and the associated SWPPP. BMPs such as silt fencing, management of exposed soils and revegetation plans to prevent erosion will be included in the SWPPPs. In areas where a surface water body is identified as impaired, the SWPPP would provide detailed mitigation to prevent or reduce impacts to impaired water bodies.⁷²²

606. The Solar Project is currently designed to construct 10 stormwater basins to help control runoff within the solar facility during rain events.⁷²³

607. Wetlands within the Solar Project Area will be delineated. If wetland impacts will occur due to the Solar Project, a wetland permit may be required, which will identify necessary measures to minimize impacts or provide replacement for impacted wetlands.⁷²⁴

5. Air and water emissions

608. Impacts from the construction of the Solar Project will be short-term and minimal as a result of the emissions from vehicles, large construction equipment, and haul trucks.⁷²⁵

609. Emissions from construction of the Solar Project will occur and will have a short-term negligible impact on climate change. The Solar Project, however, will have a net positive impact by offsetting carbon and helping Minnesota meet its renewable energy goals. During the operational phase, the facility components will not generate any criteria pollutants, GHGs, HAPs, VOCs, or ozone. Short-term and minimal

⁷¹⁹ *Id.* at 215.

⁷²⁰ *Id.* at 219.

⁷²¹ *Id.* at 224.

⁷²² *Id.* at 225.

⁷²³ *Id.* at 226.

⁷²⁴ *Id.* at 232.

⁷²⁵ *Id.* at 186.

quantities of criteria pollutants, GHGs, HAPs, VOCs, or ozone will be generated by trucks used by staff when accessing the site to complete maintenance activities.⁷²⁶

6. Solid and hazardous wastes

610. Potential impacts of hazardous materials being generated or released as a result of the Solar Project are minimal, and negligible with proper materials handling and disposal mitigation measures in place.⁷²⁷

F. Rare and unique natural resources

611. There are no mapped native prairie areas, mapped NPCs, or mapped SOBs within the Solar Project Area.⁷²⁸ Accordingly, no impacts to these resources are anticipated.⁷²⁹

612. There are no records of any federal or state listed endangered, threatened, or special concern species within the Red Rock Solar portion of the hybrid project area, so no impacts to federal or state listed species are anticipated to occur.⁷³⁰

613. In the EA, DOC-EERA stated that “[a]ny tree removal should avoid the active season (April 1 - September 30) for the Northern long-eared bat. Ensuring construction and operation are consistent with USFWS guidance would minimize impacts to species.”⁷³¹ In response, Red Rock Solar stated that it did not agree to DOC-EERA’s proposed conditions because it is not consistent with current USFWS guidance or recent Commission permits, which provide that “tree clearing shall occur between August 1 and May 31.” Red Rock Solar noted that DOC-EERA had not identified a reason to depart from USFWS guidance or recent Commission permits here.⁷³²

G. Future development and expansion

614. Red Rock Solar does not have any plans for future expansion.⁷³³

III. Solar Site Permit Conditions

615. The Sample Site Permit includes proposed permit conditions that apply to preparation, construction, clean-up, restoration, operation, maintenance, abandonment, decommission, and other aspects of the Solar Project. Many of the conditions contained in the Sample Site Permit were established as part of the site permit proceedings of other solar facilities permitted by the Commission.

⁷²⁶ *Id.* at 187.

⁷²⁷ *Id.* at 149.

⁷²⁸ *Id.* at 193-94.

⁷²⁹ *Id.* at 196.

⁷³⁰ *Id.* at 195.

⁷³¹ *Id.* at 379.

⁷³² Ex. 337 at 5 (Ikkala Surrebuttal).

⁷³³ Ex. 318 at 13 (RR-Site Application).

616. The Sample Site Permit included a condition regarding tree removal timetables that would require any tree clearing to be conducted between October 1 and March 30 to mitigate impacts to Northern long-eared bats.⁷³⁴ Red Rock Solar did not agree to this condition as proposed by DOC-EERA because it is not consistent with current USFWS guidance or recent Commission permits, which instead provides that “tree clearing shall occur between August 1 and May 31.”⁷³⁵ Because the record does not support a departure from USFWS guidance or recent Commission permits, it would be appropriate to modify Condition 5.2 in the Sample Site Permit as proposed by Red Rock Solar.

617. Red Rock Solar did not object to DOC-EERA’s recommendation that a condition regarding an independent agency monitor be included in the Site Permit. Red Rock Solar proposed the following language, with which DOC-EERA agreed:

Section 5.3 Independent Monitor: Prior to any construction, the Permittee shall propose a scope of work and identify one independent third party agency monitor on behalf of the Department of Commerce. The scope of work shall be developed in consultation with and approved by the Department of Commerce. This third-party monitor will report directly to and will be under the control of the Department of Commerce with costs borne by the Permittee. The Permittee shall file with the Commission the scope of work 30 days prior to commencing construction and the name, address, email, phone number, and emergency phone number of the third-party monitor 14 days prior to commencing any construction and upon any change that may occur during the construction of the project and restoration.⁷³⁶

NOTICE

618. Minnesota statutes and rules require an applicant to provide certain notice to the public and local governments before and during the certificate of need, site permit, and route permit process.⁷³⁷ Applicants provided notice to the public and local governments in satisfaction of Minnesota statutory and rule requirements.⁷³⁸

619. Minnesota statutes and rules also require DOC-EERA and the Commission to provide certain notice to the public throughout the Route Permit

⁷³⁴ Ex. 107 at Appx. C, § 5 (EA).

⁷³⁵ Ex. 337 at 5 (Ikkala Surrebuttal).

⁷³⁶ *Id.* at Sch. G, § 5.3.

⁷³⁷ Minn. Stat. § 216E.03, subds. 3a, 4; Minn. R. 7850.2100, subps. 2, 4.

⁷³⁸ See Ex. 311 (RR-Site Notice of Intent to Submit a Site Permit Application under Alternative Permitting Process); Ex. 313 (BB-Route Notice of Intent to Submit a Route Permit Application under Alternative Permitting Process); Ex. 320 (Notice of Filing a Route Permit Application); Ex. 310 (Compliance Filing – Notice Plan), Ex. 312 (Compliance Filing – Notice Plan – Supplemental Filing); Ex. 321 (Compliance Filing – Notice of Filing Applications); Ex. 323 (RR Notice of Comment Period/Completeness); Ex. 324 (Corrected Compliance Filing – Notice of Filing Applications); Ex. 322 (BB Notice of Notice of Comment Period/Completeness).

process.⁷³⁹ DOC-EERA and the Commission provided the notice in satisfaction of Minnesota statutes and rules.⁷⁴⁰

ENVIRONMENTAL ASSESSMENT

620. Before the Commission issues a certificate of need for a HVTL or large energy facility, the DOC-EERA must prepare an environmental report (ER) containing information on the human and environmental impacts of the proposed project, project alternative, and adverse impact mitigations.⁷⁴¹ Before the Commission may issue site or route permits for HVTLs or solar energy generation systems, the DOC-EERA must also prepare an environmental assessment (EA) containing information on the human and environmental impacts of the proposed project, alternative sites or routes identified by the commission, and mitigation measures for all sites or routes considered.⁷⁴² When an EA is required, it is the only environmental review document that must be prepared.⁷⁴³ The DOC-EERA may also combine the ER for the certificate of need and the EAs required for the site and route permits if it would not delay the process, or with the consent of the applicant and the Commission.⁷⁴⁴ For the Projects, DOC-EERA elected to prepare a combined EA to address the collective requirements of the various EA and ER processes.⁷⁴⁵ However, by Commission rule, the Big Bend Wind Site Permit Application satisfies the applicable environmental review requirements and no separate environmental assessment worksheet or environmental impact statement is required for the Wind Project.⁷⁴⁶

621. The EA process is the alternative environmental review approved by the Environmental Quality Board for high voltage transmission lines. The Commission is

⁷³⁹ Minn. Stat. § 216E.03, subd. 6; Minn. R. 7850.2300, subp. 2, .3700, subps. 2-3, 6.

⁷⁴⁰ See Ex. 105 (Notice of Substantial Changes and Substantial New Information and Comment Period on Re-evaluation of the Environmental Assessment Scope); Ex. 200 (Notice of Comment Period on Request for Exemptions from Certain Filing Requirements); Ex. 202 (Notice of Comment Period on Request for Exemptions from Certain Filing Requirements); Ex. 203 (Notice of Comment Period); Ex.207 (Notice of Commission Meeting – February 4, 2021 Agenda Meeting); Ex. 209 (Order Accepting Applications as Complete, Establishing Review Procedures, Granting Variances, and Notice of And Order for Hearing); Ex. 210 (Notice of Public Information and Environmental Review Scoping Meeting); Ex. 211 (Notice of Commission Meeting – June 17, 2021); Ex. 214 (Notice of Commission Planning Meeting); Ex. 215 (Notice of Commission Planning Meeting), Ex. 216 (Notice of Environmental Assessment Availability, Public Hearings and Comment Period); Ex. 217 (Notice of Comment Period--On Request For Exemptions From Certain Filing Requirements); Ex. 220 (Notice of Comment Period); Ex. 231 (Notice of Commission Meeting--February 4, 2021 Agenda Meeting); Ex. 234 (Notice--of Public Information And Environmental Review Scoping Meeting), Ex. 236 (Notice of Commission Planning Meeting); Ex. 237 (Notice of Commission Planning Meeting); Ex. 238 (Notice of Environmental Assessment Availability, Public Hearings, and Comment Period); Ex. 241 (Notice of Commission Meeting--June 17, 2021 Agenda Meeting).

⁷⁴¹ Minn. R. 7849.1200; see also Minn. Stat. § 216B.2421, subd. 2(1)-(2); Minn. R. 7849.0010, subps. 13-14.

⁷⁴² Minn. R. 7850.3700, subp. 1.

⁷⁴³ *Id.*, subp. 8.

⁷⁴⁴ Minn. R. 7849.1900, subp. 1.

⁷⁴⁵ Ex. 107 (EA).

⁷⁴⁶ Minn. R. 7854.0500, subp. 7.

required to determine the completeness of the EA. An EA is complete if it and the record address the issues and alternatives identified in the Scoping Decision.⁷⁴⁷

622. Any of the foregoing Findings more properly designated Conclusions of Law are hereby adopted as such.

Based on the foregoing Findings of Fact and the record in this proceeding, the Administrative Law Judge makes the following:

CONCLUSIONS OF LAW

I. Conclusions Applicable to All Applications

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

2. The Commission and the Administrative Law Judge have jurisdiction over the Applications submitted by the Applicants.

3. Applicants, the Commission, and DOC-EERA provided all notices required under Minnesota Statutes and Rules for the Applications and have substantially complied with the procedural requirements of Minnesota Statutes, chapters 216B, 216E, 216F, and Minnesota Rules, chapters 7829, 7849, 7850, 7854.

4. DOC-EERA has conducted an appropriate environmental analysis of the Projects for the stated purposes, and the EA satisfies Minn. R. 7849.1800, subp. 2, 7850.3700, .3900, subp. 2. Specifically, the EA and the record address the issues identified in the Revised Scoping Decision to a reasonable extent considering the availability of information, and the EA includes the items required by Minn. R. 7850.3700, subp. 4, and was prepared in compliance with the procedures in Minn. R. 7849.1900, 7850.3700.

5. Applicants gave notice as required by Minn. Stat. § 216E.04, subd. 4; Minn. R. 7850.2100, subp. 2; and Minn. R. 7850.2100, subp. 4.

6. Notice was provided as required by Minn. Stat. § 216E.04, subd. 6; Minn. R. 7850.3500, subp. 1; Minn. R. 7850.3700, subps. 2, 3, and 6; and Minn. R. 7850.3800.

7. A public hearing was conducted near the Projects. Proper notice of the public hearing was provided, and the public was given the opportunity to speak at the hearing and to submit written comments. All procedural requirements for the Applications were met.

8. The record in this proceeding demonstrates that Big Bend Wind has satisfied the criteria for: a Certificate of Need set forth in Minn. Stat. § 216B.243 and

⁷⁴⁷ Minn. R. 4410.4400, subp. 6; Minn. R. 7850.3900, subp. 2.

Minn. R. 7849.0120; a LW ECS Site Permit as set forth in Minnesota Statutes, chapter 216F, Minn. Stat. § 216E.03, and Minnesota Rules, chapter 7854; the Route Permit as set forth in Minn. Stat. § 216E.04, subd. 8 (referencing Minn. Stat. § 216E.03, subd. 7) and Minn. R. 7850.4100; and all other applicable legal requirements.

9. The record in this proceeding demonstrates that Red Rock Solar has satisfied the criteria for: a Certificate of Need set forth in Minn. Stat. § 216B.243 and Minn. R. 7849.0120; a LEPGP site permit set forth in Minn. Stat. § 216E.04, subd. 8 (referencing Minn. Stat. § 216E.03, subd. 7) and Minn. R. 7850.4100; and all other applicable legal requirements.

10. The Projects, with the applicable permit conditions, do not present a potential for significant adverse environmental effects pursuant to the Minnesota Environmental Rights Act, Minnesota Statutes, chapter 116B or the Minnesota Environmental Policy Act, Minnesota Statutes, chapter 116D.

II. Wind Project Certificate of Need

11. A more reasonable and prudent alternative to address those needs met by the Wind Project has not been demonstrated by a preponderance of the evidence in the record.

12. No conditions on the Wind Project Certificate of Need are necessary.

III. Wind Project Site Permit

13. The Commission has the authority under Minn. Stat. § 216F.04(d) to place conditions in a LW ECS site permit.

14. The Draft Site Permit contains several important mitigation measures and other reasonable conditions that adequately address the potential impacts of the Wind Project on the human and natural environments.

15. It is reasonable to amend the Draft Site Permit to include the changes in proposed by Big Bend Wind as set forth in Schedule F to the Surrebuttal Testimony of Dylan Ikkala.

16. The record supports approving a Site Permit for the Wind Project that is consistent with and incorporates the terms and conditions contained in the Settlement Agreement because if the Wind Project is permitted and constructed in accordance with the Settlement Agreement, the Wind Project will not have a significant adverse effect on the Jeffers Site and the Intervenor that cannot be avoided and appropriate treatments will be in place to avoid and mitigate any adverse effects.

IV. Solar Project Certification of Need

17. A more reasonable and prudent alternative to address those needs met by the Solar Project has not been demonstrated by a preponderance of the evidence in the record.

18. No conditions on the Solar Project Certificate of Need are necessary.

V. Solar Project Site Permit

19. The Commission has the authority under Minn. Stat. § 216E.03, subd, 10, to place conditions in a LEPGP site permit.

20. The Sample Solar Site Permit contains a number of important mitigation measures and other reasonable conditions.

21. It is reasonable to amend the Sample Solar Site Permit, as proposed by Red Rock Solar as set forth in Schedule G to the Surrebuttal Testimony of Dylan Ikkala.

22. On this record, there is no potential site within a reasonable geographic area that is conducive to a substantial solar development that is not defined as prime farmland. Within this geographical limitation, there is no prudent and feasible alternative to the Red Rock Solar Project site.

23. Any of the foregoing Conclusions of Law which are more properly designated as Findings of Fact are hereby adopted as such.

RECOMMENDATIONS

Based on these Findings of Fact and Conclusions of Law, the Administrative Law Judge recommends that the Commission issue a Certificate of Need, Site Permit, and Route Permit to Big Bend Wind, LLC to construct and operate the Wind Project and associated facilities in Cottonwood, Martin, and Watonwan Counties, with the conditions identified above.

Based on these Findings of Fact and Conclusions of Law, the Administrative Law Judge also recommends that the Commission issue a Certificate of Need and Site Permit to Red Rock Solar, LLC, to construct and operate the Solar Project and associated facilities in Cottonwood County, with the conditions identified above.

Dated: April 29, 2022


JAMES E. LAFAVE
Administrative Law Judge

NOTICE

Notice is hereby given that exceptions to this Report, if any, by any party adversely affected must be filed under the time frames established in the Commission's rules of practice and procedure, Minn. R. 7829.2700, .3100 (2021), unless otherwise directed by the Commission. Exceptions should be specific and stated and numbered separately. Oral argument before a majority of the Commission will be permitted pursuant to Minn. R. 7829.2700, subp. 3. The Commission will make the final determination of the matter after the expiration of the period for filing exceptions, or after oral argument, if an oral argument is held.

The Commission may, at its own discretion, accept, modify, or reject the Administrative Law Judge's recommendations. The recommendations of the Administrative Law Judge have no legal effect unless expressly adopted by the Commission as its final order.

April 29, 2022

See Attached Service List

Re: *In the Matter of the Application of Big Bend Wind, LLC, for a Certificate of Need for the up to 308 MV Big Bend Wind Project in Cottonwood and Watonwan Counties, Minnesota.*

In the Matter of the Application of Big Bend Wind, LLC, for a Large Wind Energy Conversion System Site Permit for the up to 308 MV Big Bend Wind Project in Cotton Wood and Watonwan Counties, Minnesota.

In the Matter of the Application of Big Bend Wind, LLC, for a Route Permit for a 161 kV High Voltage Transmission Line in Cottonwood, Watonwan and Martin Counties, Minnesota.

In the Matter of the Application of Red Rock Solar, LLC, for a Certificate of Need for the up to 60 MW Red Rock Solar Project in Cotton Wood County, Minnesota.

In the Matter of the Application of Red Rock Solar, LLC, for a Site Permit for the up to 60 MW Red Rock Solar Project in Cotton Wood County, Minnesota.

OAH 60-2500-37376

**MPUC Docket No. IP-7013/CN-19-408
Docket No. IP-7013/WS-19-619
Docket No. IP-7013/TL-19-621
Docket No. IP-7014/CN-19-486
Docket No. IP-7014/GS-19-620**

To All Persons on the Attached Service List:

Enclosed and served upon you is the Administrative Law Judge's **FINDINGS OF FACT, CONCLUSIONS OF LAW & RECOMMENDATION** in the above-entitled matter.

If you have any questions, please contact me at (651) 361-7874, michelle.severson@state.mn.us, or via facsimile at (651) 539-0310.

Sincerely,

A handwritten signature in black ink that reads "Michelle Severson". The script is cursive and fluid, with the first letters of each word being capitalized and larger than the rest of the letters.

MICHELLE SEVERSON
Legal Assistant

Enclosure

cc: Docket Coordinator

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS
PO BOX 64620
600 NORTH ROBERT STREET
ST. PAUL, MINNESOTA 55164

CERTIFICATE OF SERVICE

In the Matter of the Application of Big Bend Wind, LLC for a Certificate of Need for the up to 308 MV Big Bend Wind Project in Cottonwood and Watonwan Counties, Minnesota.	OAH Docket No.: 60-2500-37376 Docket No. IP-7013/CN-19-408
In the Matter of the Application of Big Bend Wind, LLC for a Large Wind Energy Conversion System Site Permit for the up to 308 MV Big Bend Wind Project in Cotton Wood and Watonwan Counties, Minnesota.	Docket No. IP-7013/WS-19-619
In the Matter of the Application of Big Bend Wind, LLC for a Route Permit for a 161 kV High Voltage Transmission Line in Cottonwood, Wataonwan and Martin Counties, Minnesota.	Docket No. IP-7013/TL-19-621
In the Matter of the Application of Red Rock Solar, LLC for a Certificate of Need for the up to 60 MW Red Rock Solar Project in Cotton Wood County, Minnesota.	Docket No. IP-7014/CN-19-486
In the Matter of the Application of Red Rock Solar, LLC for a Site Permit for the up to 60 MW Red Rock Solar Project in Cotton Wood County, Minnesota.	Docket No. IP-7014/GS-19-620

Michelle Severson certifies that on April 29, 2022, she served the true and correct **FINDINGS OF FACT, CONCLUSIONS OF LAW & RECOMMENDATION** by eService, and U.S. Mail, (in the manner indicated below) to the following individuals:

Last Name	First Name	Email	Company Name
Baerg	Berdon	bbaerg@msn.com	N/A
Brusven	Christina	cbrusven@fredlaw.com	Fredrikson Byron
Commerce Attorneys	Generic Notice	commerce.attorneys@ag.state.mn.us	Office of the Attorney General-DOC
Dornfeld	Richard	Richard.Dornfeld@ag.state.mn.us	Office of the Attorney General-DOC
Fairman	Kate	kate.frantz@state.mn.us	Department of Natural Resources
Felix Gerth	Annie	annie.felix-gerth@state.mn.us	N/A
Ferguson	Sharon	sharon.ferguson@state.mn.us	Department of Commerce
Franco	Lucas	lfranco@liunagroc.com	LIUNA
Gunderson	Brenna	Brenna.gunderson@apexcleanenergy.com	Apex Clean Eenergy
Heins	Kate M	kate.heins@apexcleanenergy.com	Apex Clean Energy
Herring	Valerie	vherring@taftlaw.com	Taft Stettinius & Hollister LLP
Howe	Kari	kari.howe@state.mn.us	DEED
Hutchinson	Brad	bdhutch@yahoo.com	N/A
Ikkala	Dylan	dylan.ikkala@apexcleanenergy.com	Apex Clean Energy
Kelliher	David	david.kelliher@mnhs.org	N/A
Kirsch	Ray	Raymond.Kirsch@state.mn.us	Department of Commerce
Kromar	Karen	karen.kromar@state.mn.us	MN Pollution Control Agency
Kunkle	Chris	chris.kunkle@apexcleanenergy.com	Apex Clean Energy
LaFave	James	james.lafave@state.mn.us	Office of Administrative Hearings
Maijala	Kevin	Kevin.Maijala@mnhs.org	Minnesota Historical Society
Odegard	Samantha J	samanthao@uppersiouxcommunity-nsn.gov	Upper Sioux Tribal Community
Pranis	Kevin	kpranis@liunagroc.com	Laborers' District Council of MN and ND
Rademacher	Peter	prademacher@hogenadams.com	N/A
Rasmussen	Leif	leif@steffensandrasmussen.com	Steffens & Rasmussen
Residential Utilities Division	Generic Notice	residential.utilities@ag.state.mn.us	Office of the Attorney General-RUD
Roos	Stephan	stephan.roos@state.mn.us	MN Department of Agriculture
Schirmer	Ronald C	ronald.schirmer@mnsu.edu	Department of Anthropology
Seuffert	Will	Will.Seuffert@state.mn.us	Public Utilities Commission
Shaddix Elling	Janet	jshaddix@janetshaddix.com	Shaddix And Associates
St. John	Cheyenne	cheyenne.stjohn@lowersioux.com	Lower Sioux Tribal Community
Waller Pitts	Haley	hwallerpitts@fredlaw.com	Fredrikson & Byron, P.A.
Warzecha	Cynthia	cynthia.warzecha@state.mn.us	Minnesota Department of Natural Resources