COMMERCE DEPARTMENT

January 29, 2025

VIA EDOCKETS

The Honorable Suzanne Todnem
Office of Administrative Hearings
600 North Robert Street
P.O. Box 64620
Saint Paul, MN 55164-0620

RE: Comments Concerning Applicant's Proposed Findings
Minnesota Energy Connection Transmission Line Project
OAH Docket No. 23-2500-39782
PUC Docket Nos. E-002/CN-22-131 and E-002/TL-22-132

Dear Judge Todnem:

Energy Environmental Review and Analysis (EERA) staff provides the attached edits to Xcel Energy's *Proposed Findings of Fact, Conclusions of Law, and Recommendations* for the project referenced above. Edits are shown as underline and strikethrough. These edits provide greater detail concerning topics presented in the proposed findings and discussed at the public hearings. Proposed edits are based on information found in the final environmental impact statement.

EERA staff reviewed Xcel Energy's preferred route. Staff's recommendation is shown below:

Region	EERA Route Recommendations	Xcel Energy Preferred Route
A	A6 (Blue)	A6 (Blue)
B	B4 + 211 + AA1 + 220 + 216 (Blue)	B4 + 212 + 216 + 219 (Blue)
C	C4 (Blue) + 223	C4 (Blue)
D	D5 (Blue)	D5 (Blue)
E	E2 (Blue)	E2 (Blue)
F	F4 (Blue)	F4 (Blue)
G	G1 + 244 (Blue)	G1 + 244 (Blue)

Staff concurs with the Department of Natural Resources (DNR) and recommends Route Segment 211 as it follows existing infrastructure for 100 percent of its length, includes less acres of RIM and CREP conservation easements, impacts 18 fewer acres of wetlands, and significantly less acreage of Sites of Biodiversity Significance and native plant communities. Staff recommends Alternative Alignment 1 (AA1) as it reduces potential impacts to RIM conservation easements. Staff recommends Route Segment 220 to avoid impacts to a residence and Route Segment 223 to avoid impacts to a private airstrip.

Staff does not recommend Route Segment 212 as staff believes following the Blue Route is a better choice in this location. While Route Segment 212 mitigates impacts to a single residence within 250 feet

of the anticipated alignment, it shifts that impact to three more residences within 250 to 500 feet and six more residences within 500 to 1,600 feet of the anticipated alignment. Further, staff believes that Rote Segment 211 is a better choice than Route Segment 219. While both route segments avoid potential impacts along the Blue Route, Route Segment 211 impacts less residences than Route Segment 219.

Lastly, staff concurs with Xcel Energy and recommends Route Segment 244. Route Segment 244 was proposed by DNR during scoping as an alternative to the Blue Route to avoid potential impacts on natural resources; however, it crosses an active Christmas Tree Farm. Route Segment 244 parallels significantly more existing infrastructure (86 percent versus two percent) and would require greater amounts of tree clearing than the Blue Route. Potential impacts to the Christmas Tree Farm can be mitigated through prudent routing and compensation for the lost economic value of the Christmas trees. Compensation would be negotiated between the applicant and landowner should Route 244 be selected.

Staff recommends that should the Public Utilities Commission issue a route permit for the project it should do so along Xcel Energy's Preferred Route as modified by EERA staff. Staff generally concurs with Xcel Energy's recommended changes to the sample route permit issued for the project and recommends special permit conditions to mitigate potential impacts.

We greatly appreciate your consideration of these comments. Staff is available to answer any questions you might have.

Sincerely,

Andrew Levi
Energy Environmental Review and Analysis

Enclosure

Attachment A

Edited Findings of Facts, Conclusions of Law, and Recommendations

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

In the Matter of the Certificate of Need and Route Permit Applications for the Minnesota Energy Connection Project in Sherburne, Stearns, Kandiyohi, Wright, Meeker, Chippewa, Yellow Medicine, Renville, Redwood, and Lyon counties in Minnesota

OAH Docket No. 23-2500-39782
MPUC Docket Nos. E-002/CN-22-131
E-002/TL-22-132

EERA COMMENTS ON XCEL ENERGY'S PROPOSED FINDINGS OF FACT, CONCLUSIONS OF LAW, AND RECOMMENDATIONS

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS
FOR PUBLIC UTILITIES COMMISSION

In the Matter of the Certificate of Need and Route Permit Applications for the Minnesota Energy Connection Project in Sherburne, Stearns, Kandiyohi, Wright, Meeker, Chippewa, Yellow Medicine, Renville, Redwood, and Lyon counties in Minnesota	OAH Docket No. 23-2500-39782 MPUC Docket Nos. E-002/CN-22-131 E-002/TL-22-132

~~XCEL ENERGY'S~~DEPARTMENT OF COMMERCE
PROPOSED FINDINGS OF FACT, CONCLUSIONS OF LAW, AND RECOMMENDATIONS

This matter was assigned to Administrative Law Judge Suzanne Todnem to conduct public hearings on the Certificate of Need Application (or, CN Application) (MPUC Docket No. E-002/CN-22-131) and Route Permit Application (or, RP Application) (MPUC Docket No. E-002/TL-22-132) (collectively referred to as the Applications) of Northern States Power Company doing business as Xcel Energy (Applicant or Xcel Energy) to construct the Minnesota Energy Connection Project (Project) in Sherburne, Stearns, Kandiyohi, Wright, Meeker, Chippewa, Yellow Medicine, Renville, Redwood, and Lyon counties in Minnesota. The Minnesota Public Utilities Commission (Commission) also requested that the Administrative Law Judge prepare findings of fact and conclusions of law and provide recommendations, if any, on conditions and provisions of the proposed route permit.

Public hearings on the Application were held in the afternoon and evening on October 29 and 30, 2024, and November 6 and 7, 2024 (in person) and October 29, 2024 (remote access - telephone and internet). The factual record remained open until November 25, 2024, for the receipt of written public comments.

Lisa Agrimonti and Haley Waller Pitts, Fredrikson & Byron, P.A., 60 South Sixth Street, Suite 1500, Minneapolis, Minnesota 55402, and Matthew Langan, Principal Agent, Siting & Land Rights for Xcel Energy, appeared on behalf of Xcel Energy.

Scott Ek, Energy Facility Planner, Minnesota Public Utilities Commission Staff (Commission Staff), 121 Seventh Place East, Suite 350, St. Paul, MN 55101 appeared on behalf of the Commission.

Richard Dornfeld, Assistant Attorney General, Andrew Levi and Ray Kirsch, 85 7th Place East, Suite 280, St. Paul, MN 55101 appeared on behalf of the Department of Commerce, Energy Environmental Review and Analysis (EERA).

STATEMENT OF ISSUES

Environmental Impact Statement

Does the Environmental Impact Statement (EIS) include the information required by applicable law, and was it prepared in compliance with applicable law?

Certificate of Need

Has Xcel Energy satisfied the criteria established in Minn. Stat. § 216B.243 and Minn. R. Ch. 7849 for a Certificate of Need for the Project?

Route Permit

Has Xcel Energy satisfied the criteria established in Minn. Stat. Ch. 216E and Minn. R. Ch. 7850 for a Route Permit for the Project? If so, which route should be selected for the Project?

SUMMARY OF RECOMMENDATIONS

The Administrative Law Judge recommends that the Commission determine that the EIS prepared for these proceedings was prepared in compliance with applicable law, addresses the issues and alternatives raised in scoping to a reasonable extent considering the availability of information and the time limitations for considering the permit application, and provides responses to the comments received during the draft environmental impact statement review process.

The Administrative Law Judge recommends that the Commission issue Applicant a Certificate of Need for the Project. The Administrative Law Judge concludes that Applicant has satisfied all relevant criteria set forth in Minnesota law for a Certificate of Need for the Project and that there are no statutory or other requirements that preclude granting a Certificate of Need on the record.

The Administrative Law Judge further concludes that the Applicant has satisfied all relevant criteria set forth in Minnesota law for a route permit for the Project and recommends that the Commission grant a route permit for the Applicant's Preferred

Route, as identified in the Direct Testimony of Matthew Langan, and modified by EERA staff.[1] ,

Based on information in the Applications, the EIS prepared by EERA, the testimony at the public hearings, the written comments received, exhibits received in this proceeding, and other evidence in the record, the Administrative Law Judge makes the following:

FINDINGS OF FACT

I. THE APPLICANT

1. Northern States Power Company, doing business as Xcel Energy, is a Minnesota corporation headquartered in Minneapolis, Minnesota, that is engaged in the business of generating, transmitting, distributing, and selling electric power and energy and related services in the states of Minnesota, North Dakota, and South Dakota. In Minnesota, Xcel Energy provides electric service to 1.3 million customers. Xcel Energy is a wholly owned utility operating company subsidiary of Xcel Energy Inc. and operates its transmission and generation system as a single integrated system with its sister company, Northern States Power Company, a Wisconsin corporation, together known as the NSP Companies. The NSP Companies are vertically integrated transmission owning members of Midcontinent Independent System Operator, Inc. (MISO). The NSP Companies are among the largest transmission owning members of MISO with more than 8,500 miles of transmission lines and approximately 550 transmission and distribution substations.[2]

II. PROCEDURAL HISTORY

2. On May 3, 2022, Applicant filed a Notice Plan Petition for the CN Application (Notice Plan).[3] Applicant also submitted a Request for Exemptions from certain Certificate of Need Application Requirements.[4]

3. On May 9, 2022, the Commission issued a Notice of Comment Period regarding the request for exemption from certain certificate of need application content

[1] Ex. Xcel-16 at 15 (Direct Testimony of Matthew Langan (Langan Direct)).
[2] Ex. Xcel-2 at 4 (RP Application).
[3] Notice Plan (May 3, 2022) (eDocket Nos. 20225-185473-01 and 20225-185473-02).
[4] Request for Exemptions from certain Certificate of Need Application Requirements (May 3, 2022) (eDocket Nos. 20225-185473-01 and 20225-185473-03).

requirements, requesting initial comments by May 23, 2022, reply comments by May 31, 2022, and supplemental comments by June 6, 2022.[5]

4. On May 13, 2022, Applicant filed an informational compliance filing with the Commission describing the forthcoming Request for Information (RFI) process, an outcome of its Upper Midwest Integrated Resource Plan (IRP) in Docket No. E-002/RP-19-368.[6]

5. On May 19, 2022, the Minnesota Department of Commerce, Division of Energy Resources (DER) submitted comments recommending that the Commission approve Applicant's Notice Plan conditioned upon a revision to the EERA contact in the notices.[7]

6. On May 23, 2022, LIUNA Minnesota & North Dakota (LIUNA) submitted comments supporting the Applicant's requested exemptions.[8] The International Union of Operating Engineers (IUOE) Local 49 and North Central States Regional Council of Carpenters (NCSRCC) also submitted comments encouraging the Commission to grant the exemptions requested by the Applicant.[9]

7. Also on May 23, 2022, the EERA submitted comments stating that it had no comment on Applicant's exemption request.[10] In addition, DER submitted comments recommending that the Commission approve the Applicant's request for exemptions with conditions.[11]

8. On May 31, 2022, Applicant filed reply comments agreeing to update the EERA contact information in the draft notice and requesting that the Commission approve the exemption request, with DER's recommendations.[12]

9. On June 2, 2022, DER submitted supplemental comments concerning the Applicant's exemption request and agreed that that the data Xcel Energy described in the Applicant's reply comments will be sufficient for a complete petition and to begin the proceeding.[13]

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[5] Notice of Comment Period on Request for Exemption from Certain Certificate of Need Application Content Requirements (May 9, 2022) (eDocket No. 20225-185603-01).

[6] Informational Compliance Filing (May 13, 2022). (eDocket No. 20225-185772-01).

[7] DER Comments (May 19, 2022) (eDocket No. 20225-185893-01).

[8] LIUNA Comments (May 23, 2022) (eDocket No. 20225-186006-01).

[9] IUOE Local 49 and NCSRCC Comments (May 23, 2022) (eDocket No. 20225-185984-01).

[10] ERRA Comments (May 23, 2022) (eDocket No. 20225-185989-01).

[11] DER Comments (May 23, 2022) (eDocket No. 20225-185893-01).

[12] Xcel Energy Comments (May 31, 2022) (eDocket No. 20225-186229-01).

[13] DER Comments (June 2, 2022) (eDocket No. 20226-186323-01).

10. On June 28, 2022, the Commission issued an order approving the Notice Plan and approving exemptions from certain certificate of need application data requirements conditioned on Xcel Energy providing alternative data.[14] The Commission also filed minutes of the June 22, 2022 consent calendar subcommittee meeting.[15]

11. On August 4, 2022, the Commission filed public comments it received on the Project.[16]

12. On November 7, 2022, Applicant filed the Notice Plan Compliance Filing demonstrating that Xcel Energy had completed its Notice Plan, as approved by the Commission on June 28, 2022.[17]

13. On November 10, 2022, the Commission filed public comments received outside the comment period.[18]

14. On March 9, 2023, Applicant filed the CN Application for the Project.[19]

15. On March 17, 2023, public comments regarding the Project were filed.[20]

16. On March 17, 2023, Applicant filed the Confirmation of Newspaper Notice Publication.[21]

17. On March 21, 2023, DER submitted comments on the completeness of the CN Application.[22]

18. On March 22, 2023, the Commission issued a Notice of Comment Period regarding the completeness of the CN Application, requesting initial comments by April 5, 2023, reply comments by April 12, 2023, and supplemental comments by April 17, 2023.[23]

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[14] Commission Order (June 28, 2022) (eDocket No. 20226-186932-01).

[15] Consent Items (June 28, 2022). (eDocket No. 20226-186920-03).

[16] Public Comments Batch 1 (Aug. 2, 2022) (eDocket No. 20228-188115-01).

[17] Notice Plan Compliance Filing (Nov. 7, 2022) (eDocket Nos. 202211-190448-01, 202211-190448-02, and 202211-190448-03).

[18] Public Comments (P. Soine) (Nov. 10, 2022) (eDocket No. 202211-190559-01).

[19] CN Application and Appendices (March 9, 2023) (eDocket Nos. 20233-193783-01, 20233-193783-02, 20233-193783-03, 20233-193783-04, and 20233-193783-05) (hereafter, the "CN Application").

[20] Public Comments (T. Libbesmeier) (March 17, 2023) (eDocket No. 20233-194079-01); Public Comments (M. Wedin) (March 17, 2023) (eDocket No. 20233-194063-01).

[21] Confirmation of Newspaper Notice Publication (March 17, 2023) (eDocket No. 20233-194066-01).

[22] Comments(March 21, 2023) (eDocket No. 20233-194135-01).

[23] Notice of Comment Period (March 22, 2023) (eDocket No. 20233-194143-01).

19. On April 5, 2023, EERA submitted comments regarding the completeness of the environmental information in the CN Application.[24]

20. On April 6, 2023, IUOE Local 49 and NCSRCC submitted comments recommending that the Commission find the CN Application complete and use the informal process.[25]

21. On April 7, 2023, the Commission filed public comments it received on the Project.[26]

22. On April 12, 2023, Applicant filed Reply Comments regarding the completeness of the CN Application.[27]

23. On April 17, 2023, DER submitted Supplemental Comments recommending that the Commission determine Xcel's CN Application, as supplemented by Xcel's reply comments, to be complete.[28]

24. On April 18, 2023, EERA submitted comments stating that the EERA staff found the environmental information provided by the Applicant to be substantially complete.[29]

25. On April 27, 2023, the Commission filed proposed consent items regarding the completeness of the CN Application and the process to be used in evaluating the CN Application.[30]

26. On April 27, 2023, the Commission filed public comments it received on the Project.[31]

27. On May 2, 2023, the Commission filed a public comment from Wanda Urdahl.[32]

28. On May 2, 2023, the Commission issued an Order accepting Xcel Energy's CN Application as complete and authorizing use of the informal review process under Minn. R. 7829.1200, recognizing that a contested case may be requested through the

[24] EERA Comments (April 5, 2023) (eDocket No. 20234-194525-01).
[25] IUOE Local 49 and NCSRCC Comments (April 6, 2023) (eDocket No. 20234-194579-01).
[26] Public Comments (J. Huisinga) (Apr. 7, 2023) (eDocket No. 20234-194611-01).
[27] Reply Comments (Apr. 12, 2023) (eDocket No. 20234-194740-01).
[28] Supplemental Comments (Apr. 17, 2023) (eDocket No. 20234-194831-01).
[29] ERRA Comments (Apr. 18, 2023) (eDocket No. 20234-194931-01).
[30] Proposed Consent Items (Apr. 27, 2023) (eDocket No. 20234-195301-04).
[31] Public Comments – Batch 1 (Apr. 27, 2023) (eDocket No. 20234-195297-01).
[32] Public Comments (W. Urdahl) (May 2, 2023) (eDocket No. 20235-195520-01).

deadline for public comments.[33] The Commission also filed minutes of the May 2, 2023, consent calendar subcommittee meeting.[34]

29. On May 17, 2023, the Commission filed a public comment submitted by the Township of Harvey in Meeker County, MN.[35]

30. On May 18, 2023, Applicant filed a Revised CN Application for the Project.[36]

31. On May 24, 2023, the Commission filed a public comment it received.[37]

32. On June 7, 2023, the Commission issued a comment replying to Lisa Newberger.[38]

33. From June 8, 2023, to September 11, 2023, the Commission filed 13 public comments it received on the Project.[39]

34. On June 16, 2023, the Commission filed the Notice of Commission Meeting for its June 29, 2023, meeting.[40]

35. On June 21, 2023, the Commission staff filed Briefing Papers, and the Commission met to consider CN Application completeness on June 29, 2023.[41]

36. On June 28, 2023, the Commission filed an Ex Parte Communication Report.[42]

37. On July 24, 2023, the Commission filed a public comment received outside the comment period.[43]

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[33] Order (May 2, 2023) (eDocket No. 20235-195506-01).

[34] Consent Items (May 2, 2023) (eDocket No. 20235-195494-04).

[35] Public Comments (Township of Harvey) (May 17, 2023) (eDocket No. 20235-195895-02).

[36] Revised CN Application and Appendices (May 18, 2023) (eDocket Nos. 20235-195956-01, 20235-195956-02, 20235-195956-03, and 20235-195956-04).

[37] Public Comments– L. Newberger (May 24, 2023) (eDocket No. 20235-196103-01).

[38] MPUC Reply Letter to Lisa Newberger (June 7, 2023) (eDocket No. 20236-196432-02).

[39] Public Comments (K. and E. Donnay) (June 8, 2023) (eDocket No. 20236-196453-02); Public Comments (K. Roserow) (June 14, 2023) (eDocket No. 20236-196569-01); Public Comments (G. and R. Neuman) (June 14, 2023) (eDocket No. 20236-196568-01); Public Comments (W. Urdahl) (June 16, 2023) (eDocket No. 20236-196644-01); Public Comments (S. McCan) (June 21, 2023) (eDocket No. 20236-196717-01); Public Comments (L. Newberger) (June 26, 2023) (eDocket No. 20236-196875-01); Public Comments (L. Newberger) (June 28, 2023) (eDocket No. 20236-196984-01); Public Comments (J. Pierskalla) (June 30, 2023) (eDocket No. 20236-197166-01); Public Comments (J. Junkermeier) (July 28, 2023) (eDocket No. 20237-197829-02); Public Comments (B. Nordgaard) (July 31, 2023) (eDocket No. 20237-197866-01); Public Comments (Meeker County) (Aug. 8, 2023) (eDocket No. 20238-198073-02); Public Comments (M. Murray) (Aug. 16, 2023) (eDocket No. 20238-198283-01); and Public Comments (L. Newberger as Trustee for G. Neuman) (Sept. 11, 2023) (eDocket No. 20239-198853-01).

[40] Notice of Commission Meeting (June 16, 2023) (eDocket No. 20236-196613-03).

[41] Briefing Papers (June 29, 2023) (eDocket No. 20236-196735-01).

[42] Ex Parte Communication Report (June 28, 2023) (eDocket No. 20236-196993-01).

[43] Public Comments (B. Rosenow) (July 24, 2023) (eDocket No. 20237-197716-02).

38. On August 10, 2023, the Commission issued an Order authorizing joint proceedings to be held on the Applications.[44]

39. On August 16, 2023, the Commission filed a public comment it received.[45]

40. On August 25, 2023, Applicant filed a letter discussing Project updates and considerations regarding the Project.[46]

41. On August 28, 2023, Carol Overland filed a comment on the Project.[47]

42. On September 8, 2023, Applicant filed reply comments in response to the comments filed with the Commission regarding the Applicant's July 26, 2023 petition for approval of a development transfer acquisition process to obtain resources needed to reutilize remaining Sherburne County Coal Generation Station interconnection rights (Docket No. M-23-342).[48]

43. On October 30, 2023, Applicant filed the Route Permit Application.[49]

44. On November 6, 2023, the Commission issued a Notice of Comment Period regarding the completeness of the RP Application, requesting initial comments by November 20, 2023, reply comments by November 27, 2023, and supplemental comments by December 4, 2023.[50]

45. On November 17, 2023, EERA submitted comments recommending that the Commission accept the RP Application as substantially complete and take no action on an advisory task force.[51]

46. On November 20, 2023, the IUOE Local 49 and NCSRCC submitted comments recommending that the RP Application be determined complete.[52]

47. On November 20, 2023, Jason and Laura Pierskalla filed a comment regarding the Project.[53]

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[44] Ex. PUC-1 (Order Authorizing Joint Proceedings).
[45] Public Comments (M. Murray) (Aug. 16, 2023) (eDocket No. 20238-198283-01).
[46] Ex. Xcel-1 (Letter – Project Updates).
[47] Overland Comments (Aug. 28, 2023) (eDocket No. 20238-198566-01).
[48] Reply Comments (Sept. 8, 2023) (eDocket No. 20239-198812-01).
[49] Exs. Xcel-2 – 10 (RP Application, Appendices and Notice).
[50] Ex. PUC-2 (Notice of Comment Period on Application Completeness).
[51] Ex. EERA-1 (EERA Completeness Comments).
[52] IUOE Local 49 and NCSRCC Comments (Nov. 20, 2023) (eDocket No. 202311-200600-01).
[53] Pierskalla Comments (Nov. 20, 2023) (eDocket No. 202311-200590-01).

48. On November 21, 2023, and December 1, 2023, the Commission filed seven public comments it received regarding the RP Application's completeness.[54]

49. On November 27, 2023, Applicant filed the Reply Comments regarding the RP Application's completeness.[55]

50. On December 1, 2023, Applicant filed the Rule 7850 Notice Compliance Filing, stating it had complied with all requirements under Minn. R. 7850.2100.[56]

51. From December 6, 2023, to January 17, 2024, the Commission filed seven public comments it received regarding the Project that were received outside of the comment period.[57]

52. On December 8, 2023, the Commission filed its Notice of Commission Meeting.[58]

53. On December 12, 2023, the Commission filed Briefing Papers and Agenda regarding the December 21, 2023, Commission Meeting.[59]

54. On December 14, 2023, EERA filed a public comment it received.[60]

55. On December 27, 2023, DER filed a public comment it received.[61]

56. On January 4, 2024, the Commission filed a sample route permit for the Project.[62]

57. On January 5, 2024, EERA filed a public comment it received.[63]

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[54] Public Comments (Batch 1) (Nov. 21, 2023) (eDocket No. 202311-200663-01); Public Comments (J. Pierskalla) (Nov. 21, 2023) (eDocket No. 202311-200659-01); Public Comments (K. Rosenow) (Nov. 21, 2023) (eDocket No. 202311-200639-04); Public Comments (B. Rosenow) (Nov. 21, 2023) (eDocket No. 202311-200639-02); Public Comments (W. Urdahl) (Nov. 21, 2023) (eDocket No. 202311-200638-02); Public Comments (R. and D. Schabel) (Nov. 27, 2023) (eDocket No. 202311-200728-01); Public Comments (B. Nelson) (Dec. 1, 2023) (eDocket No. 202312-200899-02).

[55] Ex. Xcel-11 (Reply Comments).

[56] Ex. Xcel-12 (Compliance Filing – Rule 7850 Notice).

[57] Public Comments– J. Huset (Dec. 6, 2023) (eDocket No. 202312-201028-01); Public Comments– D. Wambeke (December 12, 2023) (eDocket No. 202312-201144-01); Public Comments– B. Spoke Reagan (Dec. 15, 2023) (eDocket No. 202312-201254-02); Public Comments– K. Rosenow (Dec. 18, 2023) (eDocket No. 202312-201291-01); Public Comments– J. Madison et. al (December 27, 2023) (eDocket No. 202312-201566-01); Public Comments– A. Pfeifle (Jan. 8, 2024) (eDocket No. 20241-201966-01).

[58] Notice of Commission Meeting (Dec. 8, 2023) (eDocket No. 202312-201067-02).

[59] Briefing Papers (Dec. 12, 2023) (eDocket No. 202312-201149-01).

[60] Ex. EERA-2 (Public Comments– D. Swanson).

[61] Public Comments (L. and J. Pierskalla) (Dec. 27, 2023) (eDocket No. 202312-201559-01).

[62] Ex. PUC-3 (Sample Route Permit).

[63] Ex. EERA-3 (Public Comments– A. Pfeifle).

58. On January 9, 2024, the Commission and EERA issued a Notice of Public Information and EIS Scoping Meetings, requesting written comments by February 21, 2024.[64]

59. On January 16, 2024, the Commission filed the Order accepting the RP Application as Complete.[65]

60. On January 16, 2024, Jason and Laura Pierskalla filed a comment on the Project.[66]

61. On January 17, 2024, the Commission filed documentation confirming that it had provided the Notice of Public Information and EIS Scoping Meetings for the Project to the *EQB Monitor*.[67]

62. Also on January 17, 2024, the Commission filed a public comment regarding the Project that was received outside of the comment period on the Project.[68]

63. From January 17, 2024, to February 26, 2024, the Commission filed 39 public comments it received during the EIS Scoping comment period.[69]

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[64] Ex. PUC-4 (Notice of Public Information and EIS Scoping Meetings).

[65] Ex. PUC-5 (Order accepting RP Application as Complete).

[66] Pierskalla Comments (Jan. 16, 2024) (eDocket Nos. 20241-202197-01, 20241-202198-01, 20241-202198-02, and 20241-202198-03).

[67] *EQB Monitor* – Notice of Public Information Meetings (Jan. 17, 2024) (eDocket No. 20241-202254-02).

[68] Public Comments (M. Hommerding) (Jan. 17, 2024) (eDocket No. 20241-202267-01).

[69] Public Comments (Harrison Township) (Jan. 17, 2024) (eDocket No. 20241-202253-01); Public Comments (C. Storkamp) (Jan. 19, 2024) (eDocket No. 20241-202366-02); Public Comments (A. Simon) (Jan. 22, 2024) (eDocket No. 20241-202423-01); Public Comments (T. and N. Mertens) (Feb. 7, 2024) (eDocket No. 20242-203134-01); Public Comments (D. Ringgenberg) (Feb. 13, 2024) (eDocket No. 20242-203375-01); Public Comments (C. Kieper) (Feb. 13, 2024) (eDocket No. 20242-203370-01); Public Comments (P. Schlangen) (Feb. 13, 2024) (eDocket No. 20242-203355-01); Public Comments (R. and D. Schabel) (Feb. 13, 2024) (eDocket No. 20242-203346-01); Public Comments (R. Coughlin) (Feb. 14, 2024) (eDocket No. 20242-203391-01); Public Comments (H. Graham) (Feb. 14, 2024) (eDocket No. 20242-203390-02); Public Comments (M. Chase) (Feb. 16, 2024) (eDocket No. 20242-203543-01); Public Comments (T. McCall) (Feb. 16, 2024) (eDocket No. 20242-203539-01); Public Comments (W. Schaar) (Feb. 16, 2024) (eDocket No. 20242-203537-01); Public Comments (G. Lamon) (Feb. 16, 2024) (eDocket Nos. 20242-203519-01 and 20242-203518-01); Public Comments (N. and K. Pilgram) (Feb. 16, 2024) (eDocket No. 20242-203513-01); Public Comments (C. and N. Hoekstra) (Feb. 16, 2024) (eDocket No. 20242-203503-02); Public Comments (D. Schabel) (Feb. 20, 2024) (eDocket Nos. 20242-203593-02 and 20242-203575-01); Public Comments (T. and T. Libbesmeier) (Feb. 20, 2024) (eDocket No. 20242-203592-01); Public Comments (D. Wambeke) (Feb. 20, 2024) (eDocket No. 20242-203577-01); Public Comments (R. Schabel) (Feb. 20, 2024) (eDocket No. 20242-203576-01); Public Comments (R. and D. Schabel) (Feb. 20, 2024) (eDocket No. 20242-203574-02); Public Comments (B. Nelson) (Feb. 21, 2024) (eDocket No. 20242-203693-03); Public Comments (B. Hicks) (Feb. 21, 2024) (eDocket No. 20242-203693-01); Public Comments (M. and S. Cabrera) (Feb. 21, 2024) (eDocket Nos. 20242-203670-02 and 20242-203668-02); Public Comments (G. TerWisscha) (Feb. 21, 2024) (eDocket No. 20242-203667-03); Public Comments (T. Hook) (Feb. 21, 2024) (eDocket No. 20242-203667-01); Public Comments (J. Jumkermeier) (Feb. 21, 2024) (eDocket No. 20242-203643-01); Public Comments (J. Zeug) (Feb. 21, 2024) (eDocket No. 20242-203641-10); Public Comments (M. Hicks) (Feb. 21, 2024) (eDocket No. 20242-203641-08); Public Comments (J. Miller) (Feb. 21, 2024) (eDocket No. 20242-203641-06); Public Comments (D. Anderson [Kandiyohi County Commissioner]) (Feb. 21, 2024) (eDocket No. 20242-203641-04); Public Comments (L. Newberger) (Feb. 21, 2024) (eDocket No. 20242-203641-02); Public Comments (R. Nelson) (Feb. 22, 2024) (eDocket No. 20242-203730-02); Public

64. On January 24, 2024, Carol Overland filed a comment.[70]

65. On January 24, 2024, the Commission filed the Notice of and Order for Hearing concerning the RP Application.[71]

66. On January 24, 25, 30, and 31, 2024 the Commission held in-person public information and EIS scoping meetings on the Applications in the cities of Granite Falls, Marshall, Olivia, Redwood Falls, Litchfield, Monticello, and Kimball, Minnesota. A virtual public information and EIS scoping meeting on the Applications was held on February 1, 2024, via WebEx.

67. On January 30, 2024, the Commission filed the public meeting handouts.[72]

68. On February 1, 2024, the Commission filed documentation confirming that it had provided Notice of Public Information and EIS Scoping Meetings for the Project in the Becker Patriot News newspaper in Becker, Minnesota.[73]

69. On February 6, 2024, the Commission filed a public comment it received.[74]

70. On February 12, 2024, the Office of Administrative Hearings (OAH) filed a letter reassigning the Project to Judge Suzanne Todnem.[75]

71. On February 14, 2024, OAH filed the notice of prehearing conference.[76]

72. On February 16, 2024, Kevin and Erin Donnay, and Jason Pierskalla filed comments.[77]

73. On February 20, 2024, Clean Energy Economy Minnesota, and IUOE Local 49 and NCSRCC filed comments.[78] The Citizens Utility Board of Minnesota filed a comment the same day.[79]

Comments (L. Meyer) (Feb. 22, 2024) (eDocket No. 20242-203729-01); Public Comments (A. Pfeifle) (Feb. 23, 2024) (eDocket No. 20242-203767-01); and Public Comments (M. Hicks) (Feb. 26, 2024) (eDocket No. 20242-203816-02).

[70] Overland Comments (Jan. 24, 2024) (eDocket No. 20241-202580-02, 20241-202580-04).

[71] Ex. PUC-7 (Notice of and Order for Hearing).

[72] Public Meeting Handouts (Jan. 30, 2023) (eDocket No. 20241-202848-01).

[73] Ex. PUC -8 (Affidavit of Publication – Newspaper Notice – Public Information Meetings).

[74] Public Comments (T. Mertens) (Feb. 6, 2024) (eDocket No. 20242-203134-01).

[75] Reassignment Letter (Feb. 12, 2024) (eDocket No. 20242-203320-01).

[76] Notice of Prehearing Conference (Feb. 14, 2024) (eDocket No. 20242-203427-01).

[77] Pierskalla Comments (Feb. 16, 2024) (eDocket No. 20242-203517-03); Comments (Feb. 16, 2024) (eDocket No. 20242-203501-01).

[78] IUOE Local 49 and NCSRCC Comments (Feb. 20, 2024) (eDocket No. 20242-203599-01); Comments (Feb. 20, 2024) (eDocket No. 20242-203586).

[79] Citizens Utility Board of Minnesota Comments (Feb. 20, 2024) (eDocket Nos. 20242-203569-02 and 20242-203569-04).

74. On February 21, 2024, comments were received from the following: LIUNA;[80] MDNR;[81] NoCapX2020;[82] Fresh Energy;[83] Clean Grid Alliance;[84] Minnesota Department of Transportation (MnDOT); and,[85] Center of the American Experiment.[86]

75. On February 28, 2024, the Wright County Board of Commissioners filed a comment.[87]

76. On March 8, 2024, OAH filed an Amended Notice of Prehearing Conference.[88]

77. On March 12, 2024, the Commission filed a public comment from Lyon County.[89]

78. On March 18, 2024, Xcel Energy submitted reply comments in response to the public comments filed during the EIS Scoping comment period.[90]

79. On March 20, 2024, EERA filed several batches of public comments submitted during the EIS Scoping comment period.[91]

80. Also on March 20, 2024, the Commission filed a public comment from the Lower Sioux Indian Community.[92]

81. On March 21, 2023, DER filed comments recommending that the Commission determine that the CN Application is substantially complete upon submission of additional data.[93]

82. On March 26, 2024, and April 9, 2024 the Commission field public comments received outside of the EIS Scoping comment period.[94]

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[80] LIUNA Comments (Feb. 21, 2024) (eDocket No. 20242-2037702-02).

[81] MDNR Comments (Feb. 21, 2024) (eDocket Nos. 202425-203694-01, 202425-203694-02 and 202425-203694-03).

[82] NoCapX2020 Comments (Feb. 21, 2024) (eDocket No. 20242-203692-02).

[83] Fresh Energy Comments (Feb. 21, 2024) (eDocket No. 20242-203691-01).

[84] Clean Grid Alliance Comments (Feb. 21, 2024) (eDocket No. 20242-203680-01).

[85] MnDOT Comments (Feb. 21, 2024) (eDocket No. 20242-203676-02).

[86] Center for the American Experiment Comments (Feb. 21, 2024) (eDocket No. 20242-203647-01).

[87] Wright County Comments (Feb. 28, 2024) (eDocket No. 20242-203898-01).

[88] Amended Notice of Prehearing Conference (Mar. 8, 2024) (eDocket No. 20243-204173-01).

[89] Public Comments (Lyon County) (Mar. 12, 2024) (eDocket No. 20243-204255-02).

[90] Ex. Xcel-14 (Reply Comments).

[91] Ex. EERA-4 (Public Scoping Comments).

[92] Public Comments (Lower Sioux Indian Community) (Mar. 20, 2024) (eDocket No. 20243-204502-01).

[93] DER Comments (March 21, 2023) (eDocket No. 20233-194135-01).

[94] Public Comments (R. Schabel) (Mar. 26, 2024) (eDocket No. 20243-204665-02); Public Comments (B. Reagan) (Apr. 9, 2024) (eDocket No. 20243-205146-01).

83. On March 28 and 29, 2024, EERA filed public comments received outside of the EIS Scoping comment period.[95]

84. On April 17, 2024, the Office of the Attorney General filed the Minnesota Department of Commerce's proposed procedural schedule for the Project.[96]

85. On April 17, 2024, NoCapX2020 filed comments regarding the procedural schedule.[97]

86. On April 17, 2024, EERA filed a scoping summary and recommendations regarding the EIS scoping process.[98]

87. On April 17, 2024, Commission staff filed its proposed procedural schedule.[99]

88. On April 17, 2024, the Commission filed a public comment received outside of the EIS Scoping comment period regarding the Project.[100]

89. On April 17, 2024, DER filed supplemental comments recommending that the Commission determine the CN Application to be substantially complete.[101]

90. On April 19, 2024, the Commission filed the Notice of Commission Meeting set for May 2, 2024.[102] Briefing Papers for were filed on April 24, 2024.[103]

91. On April 23, 2024, Xcel Energy filed reply comments in response to EERA's scoping recommendations.[104]

92. On April 30, 2024, NoCapX 2020 filed a Notice of Appearance.[105]

93. On May 1, 2024, NoCapX 2020 filed comments regarding the procedural schedule.[106]

94. On May 3, 2024, Commission staff filed a revised proposed procedural schedule.[107]

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[95] Exs. EERA-5 and EERA-6 (Public Comments).
[96] Department of Commerce's Proposed Schedule (Apr. 17, 2024) (eDocket No. 20244-205542-02).
[97] NoCapX2020 Comments (Apr. 17, 2024) (eDocket No. 20244-205580-01).
[98] Ex. EERA-7 (Scoping Summary and Recommendation).
[99] Commission's Proposed Schedule (Apr. 17, 2024) (eDocket No. 20244-205512-02).
[100] Public Comments (J. and R. Junkermeier) (Apr. 17, 2024) (eDocket No. 20244-205494-01).
[101] DER Supplemental Comments (April 17, 2023) (eDocket No. 20234-194831-01).
[102] Notice of Commission Meeting (Apr. 19, 2024) (eDocket No. 20244-205673-03).
[103] Commission Meeting Briefing Papers (Apr. 24, 2024) (eDocket No. 20244-205944-02).
[104] Ex. Xcel-15 (Reply Comments).
[105] NoCapX 2020 Notice of Appearance (Apr. 30, 2024) (eDocket No. 20244-206209-01).
[106] NoCapX 2020 Comments (May 1, 2024) (eDocket No. 20245-206256-02).
[107] Revised Proposed Schedule (May 63, 2024) (eDocket No. 20245-206389-02).

95. On May 9, 2024, OAH filed an Order for Second Prehearing Conference.[108]

96. On May 9, 2024, the Commission issued an order adopting the system alternatives and route alternatives recommended by EERA for inclusion in the EIS.[109]

97. On May 14, 2024, EERA filed the EIS scoping decision[110] and notice of the scoping decision for the Project.[111]

98. On May 21, 2024, OAH issued the Scheduling Order.[112]

99. On May 29, 2024, EERA filed documentation confirming that it had provided the Notice of EIS Scoping Decision Availability to the *EQB Monitor*.[113]

100. On June 5, 2024, the Commission filed the Notice of Comment Period on the Merits of the CN Application.[114]

101. On June 6, 2024, Jason and Lori Pierskalla filed a comment.[115]

102. On June 10, 2024, EERA filed documentation confirming that it had served the Notice of EIS Scoping Decision on required parties.[116]

103. On June 26, 2024, the Commission filed the minutes from the May 2, 2024 Commission Meeting.[117]

104. On June 26, 2024, Shaddix & Associates filed the transcript of the May 17, 2024, Prehearing Conference.[118]

105. From June 28, 2024, to September 11, 2024, the Commission filed nine public comments received on the Project.[119]

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[108] Order for Second Prehearing Conference (May 9, 2024) (eDocket No. 20245-206555-01)
[109] Ex. PUC-9 (Order on Scope of the EIS).
[110] Ex. EERA-9 (EIS Scoping Decision).
[111] Ex. EERA-8 (Notice of EIS Scoping Decision).
[112] Scheduling Order (May 21, 2024) (eDocket No. 20245-206962-01).
[113] Ex. EERA-10 (*EQB Monitor* Notice).
[114] Notice of Comment Period (June 5, 2024) (eDocket No. 20246-207421-01).
[115] Pierskalla Comments (June 6, 2024) (eDocket No. 20246-207473-01).
[116] Ex. EERA-11 (Affidavit of Service for EIS Scoping Notice).
[117] Meeting Minutes (June 26, 2024) (eDocket No. 20246-207966-06).
[118] Prehearing Conference Transcript (June 26, 2024) (eDocket No. 20246-207957-01).
[119] Public Comments (J. Junkermeier) (June 28, 2024) (eDocket No. 20246-208072-01); Public Comments (P. Pladson) (July 11, 2024) (eDocket No. 20246-208509-02); Public Comments (K. Rosenow) (Aug. 21, 2024) (eDocket No. 20248-209679-01); Public Comments (B. Rosenow) (Sept. 9, 2024) (eDocket No. 20249-210040-01); Public Comments (N. and K. Pilgram) (Sept. 9, 2024) (eDocket No. 20249-210038-01); Public Comments (A. Donnay) (Sept. 9, 2024) (eDocket No. 20249-210034-01); Public Comments (L. Dallenbach) (Sept. 10, 2024) (eDocket No. 20249-210102-01); Public Comments (K. and E. Donnay) (Sept. 11, 2024) (eDocket Nos. 20249-210130-01 and 20249-210106-02).

106. On September 6, 2024, Applicant filed Direct Testimony and Schedules of Matthew Langan,[120] Joseph Samuel,[121] and Jason Standing.[122] DER submitted initial comments recommending that the Commission consider the impacts detailed in the Environmental Report, and, if the impacts are acceptable, approve the Certificate of Need.[123]

107. Also on September 6, 2024, comments were filed by the following: Xcel Energy;[124] LIUNA;[125] NoCapX 2020;[126] Citizen's Utility Board, Fresh Energy, Minnesota Center for Environmental Advocacy, Center for Rural Affairs, and the Clean Grid Alliance (collectively, the Joint Commenters);[127] Clean Energy Economy MN;[128] and, DER.[129]

108. On September 17, 2024, the OAH filed an Order Adopting Public Hearing Schedule.[130]

109. On September 19, 2024, the OAH filed an Amended Order Adopting Public Hearing Schedule.[131]

110. On September 19, 2024, the Commission filed a letter authorizing Xcel Energy to consult with the State Historic Preservation Office (SHPO) for the Project.[132]

111. On October 8, 2024, EERA filed its Draft Environmental Impact Statement (DEIS).[133] DER submitted reply comments recommending that the Commission consider the impacts detailed in the Environmental Report, and, if the impacts are acceptable, approve the Certificate of Need.[134]

112. On October 15, 2024, the Commission filed a Notice of Informational Meetings, Public and Evidentiary Hearings, and Availability of DEIS[135] and filed documentation confirming that it had provided the Notice of Informational

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[120] Ex. Xcel-16 (Langan Direct).
[121] Ex. Xcel-17 (Direct Testimony of Joseph Samuel [Samuel Direct]).
[122] Ex. Xcel-18 (Direct Testimony of Jason Standing[Standing Direct]).
[123] DER Comments (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[124] Applicant's Comments on CN Application (Sept. 6, 2024) (eDocket No. 20249-210022-02).
[125] LIUNA Comments (Sept. 6, 2024) (eDocket No. 20249-210030-01).
[126] NoCapX 2020 Comments (Sept. 6, 2024) (eDocket No. 20249-210023-01).
[127] Joint Commenters Comments (Sept. 6, 2024) (eDocket No. 20249-210016-02).
[128] Clean Energy Economy MN Comments (Sept. 6, 2024) (eDocket No. 20249-210009-01).
[129] DER Comments (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[130] Order Adopting Public Hearing Schedule (Sept. 17, 2024) (eDocket No. 20249-210280-01).
[131] Amended Order Adopting Public Hearing Schedule (Sept. 17, 2024) (eDocket No. 20249-210361-01).
[132] Ex. PUC-10 (SHPO Authorization).
[133] Ex. EERA-12 (DEIS).
[134] DER Comments (Oct. 8, 2024) (eDocket No. 20249-210008-01).
[135] Ex. PUC-11 (Notice of Informational Meetings, Public and Evidentiary Hearings, and Availability of DEIS).

Meetings, Public and Evidentiary Hearings, and Availability of DEIS to the *EQB Monitor*.[136]

113. From October 21, 2024, to November 26, 2024 the Commission filed 39 public comments it received during the DEIS comment period.[137]

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[136] Ex. PUC-12 (*EQB Monitor* Verification).

[137] Public Comments (B. Norgaard) (Oct. 21, 2024) (eDocket No. 202410-211141-01); Public Comments (J. Pierskalla) (Oct. 21, 2024) (eDocket No. 202410-211137-01); Public Comments (K. Grossinger) (Oct. 22, 2024) (eDocket No. 202410-211236-02); Public Comments (J. Jacobs) (Oct. 22, 2024) (eDocket No. 202410-211235-01); Public Comments (G. Carlson) (Oct. 28, 2024) (eDocket No. 202410-211374-01); Public Comments (M. Bos) (Oct. 29, 2024) (eDocket No. 202410-211414-01); Public Comments (M. Foster) (Oct. 29, 2024) (eDocket No. 202410-211413-02); Public Comments (K. and J. Powell) (Oct. 30, 2024) (eDocket No. 202410-211439-02); Public Comments (J. Pierskalla) (Oct. 31, 2024) (eDocket No. 202410-211476-02); Public Comments (B. Fox) (Oct. 31, 2024) (eDocket No. 202410-211475-01); Public Comments (Batch 26) (Nov. 1, 2024) (eDocket No. 202410-211532-02); Public Comments (Batch 1) (Nov 4, 2024) (eDocket No. 202410-211578-02); Public Comments (Batch) (Nov 4, 2024) (eDocket No. 202411-211573-01); Public Comments (B. & P. Pladson) (Nov 4, 2024) (eDocket No. 202411-211571-02); Public Comments (B. Karg) (Nov 4, 2024) (eDocket No. 202411-211570-02); Public Comments (Batch 1) (Nov. 5, 2024) (eDocket No. 202411-211610-01); Public Comments (D. Schabel) (Nov 7, 2024) (eDocket No. 202411-211709-04); Public Comments (Batch 1) (Nov 7, 2024) (eDocket No. 202411-211709-02); Public Comments (J. Volstad) (Nov 7, 2024) (eDocket No. 202411-211696-01); Public Comments (B. Hilbert) (Nov 7, 2024) (eDocket No. 202411-211695-01); Public Comments (M. and A. Foster) (Nov 7, 2024) (eDocket No. 202411-211693-01); Public Comments (K. Suggs) (Nov 8, 2024) (eDocket No. 202411-211732-06); Public Comments (M. Poulin) (Nov 8, 2024) (eDocket No. 202411-211732-04); Public Comments (R. and D. Schabel) (Nov 8, 2024) (eDocket No. 202411-211732-02); Public Comments (M. Neubauer) (Nov 12, 2024) (eDocket No. 202411-211829-02); Public Comments (Batch 1) (Nov 12, 2024) (eDocket No. 202411-211805-01); Public Comments (G. Stage) (Nov 13, 2024) (eDocket No. 202411-211881-01); Public Comments (G. and B. Schmidt) (Nov 13, 2024) (eDocket No. 202411-211875-02); Public Comments (K. Klaverkamp) (Nov 13, 2024) (eDocket No. 202411-211874-01); Public Comments (G. Stage) (Nov 13, 2024) (eDocket No. 202411-211873-01); Public Comments (D. Macik) (Nov 13, 2024) (eDocket No. 202411-211872-02); Public Comments (D. and R. Klaverkamp) (Nov 13, 2024) (eDocket No. 202411-211871-01); Public Comments (D. and D. Buysse) (Nov 14, 2024) (eDocket No. 202411-211932-02); Public Comments (P. Markwardt) (Nov 14, 2024) (eDocket No. 202411-211931-01); Public Comments (T. Hilsgen) (Nov 15, 2024) (eDocket No. 202411-212013-10); Public Comments (S. Woolcott) (Nov 15, 2024) (eDocket No. 202411-212013-08); Public Comments (S. Gerdes) (Nov 15, 2024) (eDocket No. 202411-212013-06); Public Comments (R. Huberty) (Nov 15, 2024) (eDocket No. 202411-212013-04); Public Comments (M. Huberty) (Nov 15, 2024) (eDocket No. 202411-212013-02); Public Comments (J. Lavoy) (Nov 15, 2024) (eDocket No. 202411-212011-07); Public Comments (E. Donnay) (Nov 15, 2024) (eDocket No. 202411-212011-05); Public Comments (D. Donnay) (Nov 15, 2024) (eDocket No. 202411-212011-03); Public Comments (B. Taatjes) (Nov 15, 2024) (eDocket No. 202411-212011-01); Public Comments (D. Lux) (Nov. 15, 2024) (eDocket No. 202411-211989-01); Public Comments (Batch) (Nov. 18, 2024) (eDocket No. 202411-212085-01); Public Comments (Batch 1) (Nov. 19, 2024) (eDocket No. 202411-212120-01); Public Comments (Melville Township Board) (Nov. 19, 2024) (eDocket No. 202411-212114-01); Public Comments (Batch 1) (Nov. 20, 2024) (eDocket No. 202411-212196-01); Public Comments (Batch 7) (Nov. 21, 2024) (eDocket No. 202411-212262-08); Public Comments (Batch 6) (Nov. 21, 2024) (eDocket No. 202411-212262-07); Public Comments (W. Donnay) (Nov. 21, 2024) (eDocket No. 202411-212262-06); Public Comments (Batch 5) (Nov. 21, 2024) (eDocket No. 202411-212262-05); Public Comments (Batch 4) (Nov. 21, 2024) (eDocket No. 202411-212262-04); Public Comments (Batch 3) (Nov. 21, 2024) (eDocket No. 202411-212262-03); Public Comments (Batch 2) (Nov. 21, 2024) (eDocket No. 202411-212262-02); Public Comments (Batch 1) (Nov. 21, 2024) (eDocket No. 202411-212262-01); Public Comments (T. and N. Mertens) (Nov. 21, 2024) (eDocket No. 202411-212260-01); Public Comments (Maine Prairie Township Board of Supervisors) (Nov. 21, 2024) (eDocket No. 202411-212245-01); Public Comments (Batch 1) (Nov. 21, 2024) (eDocket No. 202411-212231-01); Public Comments (W. Schwandt) (Nov. 22, 2024) (eDocket No. 202411-212328-05); Public Comments (M. McCarney) (Nov. 22, 2024) (eDocket No. 202411-212328-04); Public Comments (A. and T. Teicher) (Nov. 22, 2024) (eDocket No. 202411-212328-03); Public Comments (T. Mitchell and C. Fitzgerald) (Nov. 22, 2024) (eDocket No. 202411-212328-02); Public Comments (B. Greenslit) (Nov. 22, 2024) (eDocket No. 202411-212328-01); Public Comments (Clearwater Township Board) (Nov. 25, 2024) (eDocket No. 202411-212392-01); Public Comments (C. Snobl) (Nov. 25, 2024) (eDocket No.

114. On October 22, 2024, EERA filed documentation confirming that it had served the DEIS on the required parties.[138]

115. On October 22, 2024, Applicant filed Surrebuttal Testimony and Schedules of Matthew Langan[139] and Joseph Samuel.[140]

116. On October 28, 2024, Applicant filed the Combined Exhibit List ahead of the public hearings.[141]

117. On October 28, 2024, Jason and Laura Pierskalla filed a comment regarding the Project.[142]

118. On October 29 and 30, 2024, and November 6 and 7, 2024, the Commission held six in-person public hearings and one virtual public hearing.

119. On November 1, 2024, Minnesota Land & Liberty Coalition filed a comment.[143]

120. On November 4, 2024, Jason and Laura Pierskalla filed comments.[144]

121. On November 5, 2024, EERA filed documentation confirming that it had provided a copy of the DEIS to the Kimball Public Library.[145]

122. On November 25, 2024, comments were submitted by: LIUNA;[146] Jeffrey Magedanz;[147] Sarah Kern Magedanz;[148] Jensen Group Objectors (filed a Petition in

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202411-212390-01); Public Comments (Batch 4) (Nov. 25, 2024) (eDocket No. 202411-212380-04); Public Comments (Batch 3) (Nov. 25, 2024) (eDocket No. 202411-212380-03); Public Comments (Batch 2) (Nov. 25, 2024) (eDocket No. 202411-212380-02); Public Comments (Batch 1) (Nov. 25, 2024) (eDocket No. 202411-212380-01); Public Comments (Center for Rural Affairs) (Nov. 25, 2024) (eDocket No. 202411-212375-01); Public Comments (Center for Rural Affairs) (Nov. 25, 2024) (eDocket No. 202411-212368-01); Public Comments (Batch 8) (Nov. 25, 2024) (eDocket No. 202411-212357-01); Public Comments (L. Winter) (Nov. 26, 2024) (eDocket No. 202411-212466-01); Public Comments (Batch 8) (Nov. 26, 2024) (eDocket No. 202411-212462-04); Public Comments (Batch 7) (Nov. 26, 2024) (eDocket No. 202411-212462-03); Public Comments (Batch 6) (Nov. 26, 2024) (eDocket No. 202411-212462-02); Public Comments (Batch 5) (Nov. 26, 2024) (eDocket No. 202411-212462-01); Public Comments (B. Theisen) (Nov. 26, 2024) (eDocket No. 202411-212461-01); Public Comments (B. and L. Bessingpas) (Nov. 26, 2024) (eDocket No. 202411-212457-01); Public Comments (L. Newberger) (Nov. 26, 2024) (eDocket No. 202411-212429-01).

[138] Ex. EERA-13 (Certificate of Service for DEIS).

[139] Ex. Xcel-19 (Surrebuttal Testimony of Matthew Langan (Langan Surrebuttal)).

[140] Ex. Xcel-20 (Surrebuttal Testimony of Joseph Samuel (Samuel Surrebuttal)).

[141] Combined Exhibit List (Oct. 28, 2024) (eDocket No. 202410-211371-01).

[142] Pierskalla Comments (Oct. 28, 2024) (eDocket No. 202410-211355-01).

[143] Minnesota Land & Liberty Coalition Comments (Nov. 1, 2024) (eDocket No. 202411-211548-02).

[144] Pierskalla Comments (Nov. 4, 2024) (eDocket Nos. 202411-211574-01, 202411-211574-02, 202411-211574-03, 202411-211575-01, 202411-211575-02, 202411-211575-03, 202411-211575-04, 202411-211575-05, 202411-211575-06, 202411-211575-07, 202411-211575-08, 202411-211576-01, 202411-211576-02, 202411-211576-03, 202411-211576-04, 202411-211576-05, 202411-211576-06).

[145] Certificate of Service (Nov. 5, 2024) (eDocket No. 202411-211613-01).

[146] LIUNA Comments (Nov. 25, 2024) (eDocket No. 202411-212408-01).

[147] Magedanz Comments (Nov. 25, 2024) (eDocket No. 202411-212401-01).

[148] Magedanz Comments (Nov. 25, 2024) (eDocket No. 202411-212400-01).

Opposition of the Project and 61 public comments);[149] Xcel Energy;[150] John Barka;[151] MnDOT;[152] Shannon Cabrera;[153] Miguel Cabrera; and,[154] Jeremy Vinar.[155]

[149] Petition in Opposition to MNEC Project and Utility Route (Nov. 25, 2024) (eDocket No. 202411-212334-03); Public Comments (R. Dobberstein) (Nov. 25, 2024) (eDocket No. 202411-212334-01); Public Comments (Q. Berres) (Nov. 25, 2024) (eDocket No. 202411-212334-02); Public Comments (P. Jensen) (Nov. 25, 2024) (eDocket No. 202411-212334-04); Public Comments (P. Berres) (Nov. 25, 2024) (eDocket No. 202411-212334-05); Public Comments (M. Reberg) (Nov. 25, 2024) (eDocket No. 202411-212334-06); Public Comments (M. Reberg) (Nov. 25, 2024) (eDocket No. 202411-212334-07); Public Comments (L. Lichte) (Nov. 25, 2024) (eDocket No. 202411-212334-08); Public Comments (M. Reberg) (Nov. 25, 2024) (eDocket No. 202411-212334-09); Public Comments (L. Lichte) (Nov. 25, 2024) (eDocket No. 202411-212334-10); Public Comments (W. Hentges) (Nov. 25, 2024) (eDocket No. 202411-212334-11); Public Comments (W. Pramann) (Nov. 25, 2024) (eDocket No. 202411-212334-12); Public Comments (W. Pramann) (Nov. 25, 2024) (eDocket No. 202411-212334-13); Public Comments (T. Spaulding) (Nov. 25, 2024) (eDocket No. 202411-212334-14); Public Comments (S. O'Brien) (Nov. 25, 2024) (eDocket No. 202411-212334-15); Public Comments (S. Rosenow) (Nov. 25, 2024) (eDocket No. 202411-212334-16); Public Comments (S. Cremers) (Nov. 25, 2024) (eDocket No. 202411-212334-17); Public Comments (S. Cremers) (Nov. 25, 2024) (eDocket No. 202411-212334-18); Public Comments (J. Vinar) (Nov. 25, 2024) (eDocket No. 202411-212337-01); Public Comments (J. Hentges) (Nov. 25, 2024) (eDocket No. 202411-212337-02); Public Comments (J. Reberg) (Nov. 25, 2024) (eDocket No. 202411-212337-03); Public Comments (J. Reberg) (Nov. 25, 2024) (eDocket No. 202411-212338-01); Public Comments (K. Wills) (Nov. 25, 2024) (eDocket No. 202411-212338-02); Public Comments (K. Asfeld) (Nov. 25, 2024) (eDocket No. 202411-212338-03); Public Comments (K. Asfeld) (Nov. 25, 2024) (eDocket No. 202411-212338-04); Public Comments (K. Gehrke (Nov. 25, 2024) (eDocket No. 202411-212339-01); Public Comments (K. Kummet) (Nov. 25, 2024) (eDocket No. 202411-212339-02); Public Comments (K. O'Brien) (Nov. 25, 2024) (eDocket No. 202411-212339-03); Public Comments (K. Schmidt) (Nov. 25, 2024) (eDocket No. 202411-212339-04); Public Comments (D. Ingebrigtson) (Nov. 25, 2024) (eDocket No. 202411-212339-05); Public Comments (K. O'Brien) (Nov. 25, 2024) (eDocket No. 202411-212340-01); Public Comments (D. Binsfeld) (Nov. 25, 2024) (eDocket No. 202411-212340-02); Public Comments (E. Gehrke) (Nov. 25, 2024) (eDocket No. 202411-212340-03); Public Comments (D. Medeck) (Nov. 25, 2024) (eDocket No. 202411-212340-04); Public Comments (E. Helgeson) (Nov. 25, 2024) (eDocket No. 202411-212340-05); Public Comments (G. Bloom) (Nov. 25, 2024) (eDocket No. 202411-212340-06); Public Comments (J. Schabel) (Nov. 25, 2024) (eDocket No. 202411-212340-07); Public Comments (J. Spaulding) (Nov. 25, 2024) (eDocket No. 202411-212341-01); Public Comments (J. Helgeson) (Nov. 25, 2024) (eDocket No. 202411-212341-02); Public Comments (J. Freedland) (Nov. 25, 2024) (eDocket No. 202411-212341-03); Public Comments (J. Christensen) (Nov. 25, 2024) (eDocket No. 202411-212341-04); Public Comments (P. & C. Jensen) (Nov. 25, 2024) (eDocket No. 202411-212341-05); Public Comments (B. Gehrke) (Nov. 25, 2024) (eDocket No. 202411-212342-01); Public Comments (C. Mondloch) (Nov. 25, 2024) (eDocket No. 202411-212342-02); Public Comments (C. Jensen) (Nov. 25, 2024) (eDocket No. 202411-212342-03); Public Comments (D. Tschida (Nov. 25, 2024) (eDocket No. 202411-212342-04); Public Comments (D. Lichte) (Nov. 25, 2024) (eDocket No. 202411-212342-05); Public Comments (D. Binsfeld) (Nov. 25, 2024) (eDocket No. 202411-212342-06); Public Comments (D. Mondloch) (Nov. 25, 2024) (eDocket No. 202411-212343-01); Public Comments (D. Schabel) (Nov. 25, 2024) (eDocket No. 202411-212343-02); Public Comments (Ingebrigtson Family) (Nov. 25, 2024) (eDocket No. 202411-212343-03); Public Comments (A. Rain) (Nov. 25, 2024) (eDocket No. 202411-212343-04); Public Comments (A. Simon) (Nov. 25, 2024) (eDocket No. 202411-212343-05); Public Comments (A. Geissler) (Nov. 25, 2024) (eDocket No. 202411-212343-06); Public Comments (B. Schabel) (Nov. 25, 2024) (eDocket No. 202411-212344-01); Public Comments (B. Brinkman) (Nov. 25, 2024) (eDocket No. 202411-212344-02); Public Comments (B. Jensen) (Nov. 25, 2024) (eDocket No. 202411-212344-03); Public Comments (B. Simon) (Nov. 25, 2024) (eDocket No. 202411-212344-04); Public Comments (B. Vossen) (Nov. 25, 2024) (eDocket No. 202411-212344-05); Public Comments (B. Gehrke) (Nov. 25, 2024) (eDocket No. 202411-212344-06); Public Comments (G. Bloom) (Nov. 25, 2024) (eDocket No. 202411-212393-02); Public Comments (B. Gehrke) (Nov. 25, 2024) (eDocket No. 202411-212393-01).

[150] Xcel Energy DEIS Comments (Nov. 25, 2024) (eDocket No. 202411-212383-01).

[151] Barka Comments (Nov. 25, 2024) (eDocket No. 202411-212362-01).

[152] MnDOT Comments (Nov. 25, 2024) (eDocket No. 202411-212360-01).

[153] Cabrera Comments (Nov. 25, 2024) (eDocket No. 202411-212349-01).

[154] Cabrera Comments (Nov. 25, 2024) (eDocket No. 202411-212348-01).

[155] Vinar Comments (Nov. 25, 2024) (eDocket No. 202411-212335-01).

123. On November 26, 2024, Jennifer Barka filed a public comment regarding the Project.[156]

124. On November 26, 2024, MDNR filed public comments regarding the Project.[157]

125. On December 2 and 3, 2024, the Commission filed comments it received outside of the DEIS comment period.[158]

126. On December 3, 2024, EERA filed a comment it received outside of the DEIS comment period.[159]

127. On December 4, 2024, the Commission filed public comments it received.[160]

128. On December 6, 2024, Applicant filed documentation evidencing transmittal of the public hearing transcripts to local libraries.[161]

129. On December 10, 2024, the Commission filed additional public comments it received outside the DEIS comment period.[162]

130. On December 13, 2024, Applicant filed its Response to Hearing Comments[163], with proposed revisions to the Draft Route Permit; Proposed Findings of Fact, Conclusions of Law, and Recommendations; and Post-Hearing Brief.

131. On January 22, 2025, EERA filed the final EIS (FEIS). The FEIS includes Appendix B, which responds to comments received on the DEIS.[164]

132. On January 22, 2025, EERA filed a Notice of Final Environmental Impact Statement Availability.[165]

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[156] Barka Comments (Nov. 26, 2024) (eDocket No. 202411-212411-01).

[157] MDNR Comments (Nov. 26, 2024) (eDocket Nos. 202411-212410-01, 202411-212410-02, 202411-212410-03).

[158] Public Comments (Batch 1) (Dec. 2, 2024) (eDocket No. 202412-212551-01); Public Comments (D. Bohlsen) (Dec. 2, 2024) (eDocket No. 202412-212545-02); Public Comments (L. Linz) (Dec. 2, 2024) (eDocket No. 202412-212545-01); Public Comments (L. Knoblauch) (Dec. 3, 2024) (eDocket No. 202412-212619-01); Public Comments (B. Nelson) (Dec. 3, 2024) (eDocket No. 202412-212618-01).

[159] Public Comments (B. Nelson) (Dec. 3, 2024) (eDocket No. 202412-212608-01).

[160] Public Comments (G. Stage) (Dec. 4, 2024) (eDocket Nos. 202412-212689-01 and 202412-212685-01).

[161] Xcel Energy's Letter to Local Libraries (Dec. 6, 2024) (eDocket No. 202412-212792-01).

[162] Public Comments (D. Kemper) (Dec. 10, 2024) (eDocket No. 20241202120843).

[163] Xcel Energy Response to Hearing Comments (Dec. 13, 2024).

[164] Department of Commerce (Jan. 22, 2025) Final Environmental Impact Statement (eDocket Nos. 20251-214220-01, 20251-214220-02, 20251-214220-03, 20251-214220-04, 20251-214220-05, 20251-214220-06, 20251-214220-07, 20251-214220-08, 20251-214220-09, 20251-214220-10, 20251-214220-11, 20251-214220-12, 20251-214220-13) hereinafter "FEIS".

[165] Department of Commerce (Jan. 22, 2025) Notice of Final Environmental Impact Statement Availability (eDocket Nos. 20251-214225-01 and 20251-214237-01)

~~130.~~133. On January 29, 2025, EERA filed its responses to the Applicant's Draft Route Permit; Proposed Findings of Fact, Conclusions of Law, and Recommendations; and Post-Hearing Brief.[166]

III. THE PROPOSED PROJECT

A. Project Summary

~~131.~~134. The proposed Project consists of a double circuit 345 kV transmission line and associated facilities connecting the existing Sherburne County Generation Station (Sherco) Substation in Becker, Minnesota, and a new substation proposed to be constructed near the Town of Garvin in Lyon County, Minnesota (Garvin Substation).[167]

~~132.~~135. Project components would include:

a. A new 3.1-mile single circuit 345 kV line between the existing Sherco Substation and the existing Sherco Solar West Substation, referred to as the Green Segment, to be co-located as a double circuit line with the existing 345 kV line between the existing Sherco Substation and the existing Sherco Solar West Substation;

b. A double-circuit 345 kV transmission line connecting Xcel Energy's existing Sherco Solar West Substation to the new Garvin Substation. The proposed Purple and Blue Routes are approximately 171 and 174 miles long, respectively. Each route option would be combined with the Green Segment for a total end-to-end Purple/Green or Blue/Green route;

c. Modifications to the existing Sherco Substation and Sherco Solar West Substation to accommodate the new 345 kV transmission lines;

d. A Voltage Support Substation that will be located approximately 80 miles along the Blue or Purple Routes south of the Sherco Solar West Substation;

e. An Intermediate Substation that will be located approximately 20 miles north of the new Garvin Substation, depending on the final route selected; and

[166] [Forthcoming]
[167] Ex. Xcel-2 at 1, 4 (RP Application).

f. The new Garvin Substation as the terminus of the Project near the Town of Garvin in Lyon County.[168]

B. Overview of Project Need

~~133.~~136. The Project was first identified as part of Xcel Energy's recently approved IRP.[169]

~~134.~~137. In its 2020-2034 IRP, Xcel Energy proposed a plan (Alternate Plan) to reduce carbon emissions more than 85 percent from 2005 levels by 2030 and help Xcel Energy's deliver 100 percent carbon-free electricity by 2050. After careful consideration of Xcel Energy's proposal along with comments and analysis from numerous stakeholders, the Commission's Order provided this summary:

> In this Order, the Commission approves a modified version of Xcel's Alternate Plan that will guide investments through 2034. With the benefit of significant stakeholder engagement spanning more than two years, the Commission is able to approve a plan largely reflecting the positions taken jointly by Xcel, many environmental groups (the CEOs), and many labor groups (the NCSRCC, IUOE, and LIUNA). The plan is designed to manage costs for households and businesses; reduce emissions that contribute to climate change; and ensure reliable electric service for Xcel customers. Most significantly, it provides for –
>
> • retiring all of Xcel's coal-powered generators,
>
> • adding substantial amounts of solar- and wind-powered generation,
>
> • reinforcing system reliability,
>
> • exploring options for adding new technology such as energy storage and hydrogen powered generation, and

[168] Ex. Xcel-2 at 1, 7 (RP Application).

[169] CN Application at 1. *In the Matter of the 2020-2034 Upper Midwest Integrated Resource Plan of Northern States Power Company d/b/a Xcel Energy*, MPUC Docket No. E-002/RP-19-368, Order Approving Plan with Modifications and Establishing Requirements for Future Filings, at Ordering ¶ 2.A.6 (Apr. 15, 2022) (hereafter, the "IRP Order").

> • pursuing the process of extending the life of Xcel's Monticello Nuclear Generating Plant (Monticello) in Monticello, Minnesota.
>
> Under this plan, Xcel will reduce its greenhouse gas emissions by 86 [percent] relative to 2005 levels; by 2032, 81 [percent] of Xcel's electricity will be generated from carbon-free resources.[170]

~~135.~~138. Xcel Energy also proposed retirement dates for its remaining Sherco coal units in the IRP proceeding. The Commission generally agreed, directing Xcel Energy to retire Sherco Unit 3 by 2030.[171] Previously, in connection with Xcel Energy's 2016–2030 IRP, the Commission approved Xcel Energy's plan to retire Sherco Units 1 and 2 in 2026 and 2023, respectively.[172]

~~136.~~139. The Commission also found that Xcel Energy proved it needs to procure 600 MW of solar and 2,150 MW of wind, or an equivalent amount of energy and capacity from a combination of wind, solar, and/or storage between 2027 and 2032 to meet energy and capacity needs.[173]

~~137.~~140. During the IRP proceeding, Xcel Energy proposed to construct two 345 kV gen-ties between Lyon County and the existing Sherco Substation to acquire the needed energy resources and optimize reuse of Xcel Energy's existing and valuable interconnection rights at the Sherco Substation. Xcel Energy proposed two 345 kV gen-tie lines would deliver 1,996 MW to Sherco. As part of that proposal, Xcel Energy included combustion turbine (CT) capacity of approximately 400 MW with a clutch that can provide the same attributes as a synchronous condenser, slated to be installed at Lyon County. The proposed CT capacity would have provided required system support for the gen-ties, in addition to meeting customers' capacity needs. The Commission determined that it is more likely than not that 800 MW of firm capacity will be needed between 2027 and 2029 but deferred the selection of

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[170] CN Application at 2–3; IRP Order at 3.

[171] The Commission also directed Xcel Energy to retire the Allen S. King Generating Station (King) in 2028 and to begin permitting proceedings for a transmission line designed to permit new energy resources to connect to the grid at that location. See IRP Order at Ordering ¶¶ 2.A.4; 2.A.6. That transmission line will be the subject of separate permitting processes.

[172] CN Application at 3. *In the Matter of Xcel Energy's 2016-2030 Integrated Resource Plan*, MPUC Docket No. E-002/RP-15-21, Order Approving Plan with Modifications and Establishing Requirements for Future Resource Plan Filings at Ordering ¶ 7 (Jan. 11, 2017).

[173] IRP Order at Ordering ¶ 2.A.8. Further, Xcel Energy will acquire, by 2026, of 720 MW of Xcel Energy-owned solar resources to reuse Sherco Unit 2's interconnection rights—which will not require the Project to be interconnected—and 600 MW of solar resources unconstrained by interconnection location or ownership. IRP Order at Ordering ¶ 2.A.5.

the resources to meet this firm capacity need to a separate resource acquisition docket.[174]

~~138.~~141. The Commission ordered Xcel Energy to begin proceedings to obtain a Certificate of Need and Route Permit for the gen-ties.[175] The Project is one part of an overall resource acquisition plan. The generators that will connect to the Project will be identified through separate processes and will be subject to separate regulatory approvals. Connecting the new renewable energy Xcel Energy will pursue as a result of the IRP process to the Sherco Substation enables Xcel Energy to reuse its valuable and existing transmission interconnection rights (approximately 2,000 MW total). These rights will be retained pursuant to the Federal Energy Regulatory Commission (FERC) Electric Tariff, MISO Attachment X. FERC has granted current generation owners the right to re-use the associated transmission interconnection for new generation at those sites as the old generation retires as part of the energy transition from carbon-based fuels to renewable energy.[176]

~~139.~~142. The Project will enable Xcel Energy to interconnect new renewable energy generation without needing to go through the generation interconnection process at MISO, which currently typically takes years to complete and identifies substantial and costly needed upgrades for interconnections that often result in projects' withdrawal from the process. For Xcel Energy's modeling, the Applicant assumed interconnection costs in 2021 dollars on a Net Present Value (NPV) of $500/kW for wind and $200/kW for solar based on its understanding of the current MISO queue constraints and review of the latest Definitive Planning Phase process, where interconnection costs are assigned. These estimates remain appropriate for MISO interconnection costs.[177]

C. Transmission Line Structures and Conductors

~~140.~~143. The Project would be constructed primarily of single (monopole) steel pole structures. For angles and dead-end structures, a multiple pole design will be used. All transmission structures will be a double-circuit 345 kV/345 kV design and proposed to be weatherizing steel. Other specialty structures may be used depending on site-specific conditions.[178]

~~141.~~144. Each 345 kV line will utilize bundled (twisted pair) 2x636 kcmil Aluminum Conductor Steel Reinforced or similar performance conductor, which is the

[174] CN Application at 3; IRP Order at Ordering ¶ 3.
[175] IRP Order at Ordering ¶ 2.A.6.
[176] CN Application at 4.
[177] CN Application at 4. The equivalent NPV in 2023 dollars is $564/kW for wind and $225/kW for solar.
[178] Ex. Xcel-2 at 13 (RP Application).

preferred conductor in areas of icing with wind that can lead to galloping.[179] These double bundled conductors will have a capacity equal to or greater than 3,000 amps.[180]

~~142.~~145. The proposed structures will typically range in height from approximately 90- to 160-feet tall.[181] These structures are not anticipated to require strobing lights to comply with FAA regulations.[182] ~~and~~ Structures will typically be installed on a drilled pier concrete foundation usually approximately 30 to 40 feet in depth.[183] Where existing transmission lines are crossed, structure heights could be up to 195 feet tall.[184] Specialty foundations may be required due to geotechnical (or soil) conditions. Foundation depth could be up to 60 to 70 feet in depth be based on site-specific conditions and detailed engineering design.[185]

~~143.~~146. The typical spans between structures will be about 1,000 feet.[186]

~~144.~~147. The Project will be designed to meet or surpass relevant local and state codes including the National Electric Safety Code (NESC) and Xcel Energy's standards. Applicable standards will be met for construction and installation, and applicable safety procedures will be followed during design, construction, and after installation.[187] Xcel Energy would follow a quality control program, and the project would be designed by professional engineers.[188]

D. Substations and Associated Facilities

~~145.~~148. Associated facilities for the proposed Project include modifications to the existing Sherco Solar West Substation and the Sherco Substation, a new Garvin Substation in Lyon County, a new Voltage Support Substation near the approximate midpoint of the transmission line, and a new Intermediate Substation about 20 miles north of the Garvin Substation.[189]

~~146.~~149. The locations of the Sherco and Sherco West Substations are known. Likewise, during this proceeding, Xcel Energy identified proposed locations for the Garvin Substation (applicable to both the Blue and Purple Routes) and the voltage

[179] Ex. Xcel-2 at 13 (RP Application).
[180] Ex. Xcel-2 at 13 (RP Application).
[181] Ex. Xcel-2 at 13 (RP Application).
[182] FEIS at 113.
[183] Ex. Xcel-2 at 13 (RP Application).
[184] Ex. Xcel-2 at 13 (RP Application).
[185] Ex. Xcel-2 at 13 (RP Application).
[186] Ex. Xcel-2 at 13 (RP Application).
[187] Ex. Xcel-2 at 14 (RP Application).
[188] FEIS at 126.
[189] Ex. Xcel-2 at 13 (RP Application).

support substation along the Blue Route.[190] The precise location of the remaining substations have not been identified and will be determined once a route is approved by the Commission.[191] No precise locations were studied in the FEIS.[192] Xcel Energy is working to identify a location for each facility that avoids environmentally sensitive areas including but not limited to, wetlands, public lands, native plant communities, and historic sites.[193] Xcel Energy intends to seek agreement with willing landowners for the location of the new substations, to the extent agreement has not already been reached.[194]

~~147.~~150. The Sherco Solar West Substation, owned by Xcel Energy, is the northern endpoint of the proposed double circuit 345 kV transmission line. This substation is located just outside the City of Becker, adjacent to Xcel Energy's Sherco Solar West solar facility and interconnects the solar facility with the Sherco Substation via the Sherco Solar West 345 kV transmission line (Line 5651).[195] To accommodate this Project, the Sherco Solar West Substation will require expansion entirely on Xcel Energy owned property and installation of new substation equipment such as: breakers, switches, continuously variable transmissions (CVTs), arresters, and bus work.[196] The Project will connect the Sherco Solar West Substation and the Sherco Substation via the Green Segment, which is proposed to be a new second circuit to be added to the existing Line 5651 gen-tie line between the Sherco Solar West Substation and the Sherco Substation.[197]

~~148.~~151. Modifications at the Sherco Substation will also be necessary to accommodate termination of the second circuit between Sherco and Sherco Solar West Substations as part of this Project. However, no expansion will be required as all additional equipment will be installed within the existing fence line of the substation.[198]

~~149.~~152. Xcel Energy proposes to construct a new 345 kV Voltage Support Substation approximately 80 miles south of the Sherco Solar West Substation.[199] A control building and road access will also be constructed at the site of the Voltage Support Substation. The Voltage Support Substation footprint will be approximately 30 acres in size. Xcel Energy intends to purchase property that is approximately 40

[190] Ex. Xcel-2 at 15-16 (RP Application); Ex. EERA-12 at 440, 447–48, and Figure 14-1 (DEIS); Ex. Xcel-16 at 10:3–7 (Langan Direct); Xcel Energy Comments on DEIS at 7 (Nov. 25, 2024) (eDocket No. 202411-212383-01).

[191] Ex. Xcel-2 at 13 (RP Application).

[192] *See* FEIS.

[193] Ex. Xcel-2 at 15–16 (RP Application).

[194] Ex. Xcel-2 at 15 (RP Application).

[195] Ex. Xcel-2 at 16 (RP Application).

[196] Ex. Xcel-2 at 16 (RP Application).

[197] Ex. Xcel-2 at 16 (RP Application).

[198] Ex. Xcel-2 at 16 (RP Application).

[199] Ex. Xcel-2 at 16 (RP Application).

to 80 acres in size to accommodate the substation footprint and additional acreage that may be needed for transmission line connections.[200]

~~150.~~153. Xcel Energy proposes to construct an Intermediate Substation approximately 20 miles north of the Garvin Substation.[201] The Intermediate Substation will occupy an approximately 20-acre footprint and facilitate the interconnection of renewable resources to that substation. Xcel Energy intends to purchase property that is approximately 40 to 80 acres in size to accommodate the substation footprint and additional acreage that may be needed for future line connections, including connections for new generators.[202]

~~151.~~154. The new Garvin Substation in Lyon County would be the beginning and the southern endpoint of the transmission line.[203] This substation would be located approximately one mile north of the Town of Garvin, south/southeast of the intersection of U.S. Highway 14 and U.S. Highway 59.[204] The Garvin Substation will facilitate the interconnection of renewable resources to that substation.[205] The substation will be approximately 40 acres in size and include the installation of two 116/-58 MVAR synchronous condensers, shunt reactors, breakers, switches, CVTs, arresters, and bus work.[206] A control building and road access will also be constructed at the site of the new Garvin Substation.[207] Xcel Energy has secured purchase options with two landowners for a total of 160 acres that could be used for selecting the final 40-acre Garvin Substation site to provide siting flexibility and setbacks from residences and to accommodate interconnections from future wind generation in the area.[208]

E. Right-of-Way and Route Width

~~152.~~155. For most of the Project, Xcel Energy is requesting a route width of 1,000 feet. [209]

[200] Ex. Xcel-2 at 16 (RP Application).
[201] Ex. Xcel-2 at 16 (RP Application).
[202] Ex. Xcel-2 at 16–17 (RP Application).
[203] Ex. Xcel-2 at 17 (RP Application).
[204] Ex. Xcel-2 at 17 (RP Application).
[205] Ex. Xcel-2 at 17 (RP Application).
[206] Ex. Xcel-2 at 17 (RP Application).
[207] Ex. Xcel-2 at 17 (RP Application).
[208] Ex. Xcel-2 at 17 (RP Application).
[209] Ex. Xcel-2 at 9 (RP Application); Ex. Xcel-16 at 4:6–11 (Langan Direct).

~~153.~~156. For the Green Segment, Xcel Energy requests a route width of 150 feet, which corresponds to the 150-foot right-of-way for the existing Line 5651 gen-tie line between the Sherco Solar West Substation and the Sherco Substation.[210]

~~154.~~157. Xcel Energy is requesting additional route widths between 0.5 mile and up to 1.25 miles surrounding the Garvin, Intermediate, and Voltage Support Substations to provide flexibility in substation location and routing the lines in and out of the substations.[211]

~~155.~~158. Xcel Energy is also requesting additional route widths in certain areas where natural resources and state conservation easements exist. ~~which the~~ Xcel Energy intends to avoid these resources and easements to the extent practicable.[212]

~~156.~~159. For the right-of-way, Xcel Energy is generally seeking a 150-foot-wide right-of-way, which will be located within the requested route width.[213] In some areas, a wider right-of-way may be needed based on site- and design-specific considerations; for example, a horizontal configuration at the Mississippi River crossing would require a 250-foot right-of-way because the lower height of the horizontal configuration requires the use of additional structures.[214]

~~157.~~160. When paralleling existing road rights-of-way, Xcel Energy proposes generally to place poles on adjacent private property, approximately a 10-foot offset from the existing road right-of-way, subject to easements with landowners, as well as road authority design requirements that could affect the offset distance.[215]

F. Project Schedule

~~158.~~161. Xcel Energy plans to commence construction of the Project in the first quarter of 2026, beginning with tree clearing.[216] Xcel Energy anticipates facility construction to commence in the second quarter of 2026.[217] Table 1 provides a permitting and construction schedule summary, with anticipated end dates identified.[218]

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[210] Ex. Xcel-2 at 9 (RP Application).
[211] Ex. Xcel-16 at 10:25–11:5 (Langan Direct); *see also* Ex. Xcel-2 at 15 (RP Application).
[212] Ex. Xcel-2 at 10–11 (RP Application).
[213] Ex. Xcel-16 at 4:6–11 (Langan Direct).
[214] Xcel Energy Response to Hearing Comments at 18, 32-33 (Dec. 13, 2024).
[215] Ex. Xcel-2 at 15 (RP Application).
[216] Xcel Energy Comments at 3 (September 6, 2024) (eDocket No. 20249-210022-02); Ex. Xcel-17 at 3:4–5 (Samuel Direct).
[217] Xcel Energy Comments at 3 (September 6, 2024) (eDocket No. 20249-210022-02); Ex. Xcel-17 at 3:4–5 (Samuel Direct).
[218] Xcel Energy Comments at 3 (September 6, 2024) (eDocket No. 20249-210022-02); Ex. Xcel-17 at 3:4–5 (Samuel Direct).

Table 1

Activity	Estimated Dates
Certificate of Need/Route Permit	March 2025
Land survey access and land acquisition	June 2024 - 2025
Required federal, state and local permits obtained	Q2 2025 – Q2 2026
Start Project construction	Q1 2026[219]
Gen-Ties in-service (1,000 MW enabled)	Q3 2028
Project Complete with all substations built out	Q4 2031

G. Project Costs

~~159.~~162. The Project is estimated to cost between $1.274 billion to $1.302 billion depending on route selected.[220] These costs include all transmission line costs, right-of-way costs, risk contingencies for the transmission line, and costs for ~~substation~~ modifications at the Sherco Solar West and~~,~~ Sherco Substations, and costs for construction of the Voltage Support, Intermediate, and Garvin Substations.[221] The transmission line is expected to cost approximately $4.4 million per mile (including land acquisition).[222]

H. Permittee

~~160.~~163. Northern States Power Company, a Minnesota corporation, doing business as Xcel Energy, is the permittee for the Project.[223]

IV. ROUTES EVALUATED FOR PROJECT

A. Applicant's Route Development

~~161.~~164. Xcel Energy conducted a thorough and systematic route selection process beginning in 2022 and extending through mid-2023.[224] This process included

[219] Tree clearing is scheduled for Q1 2026 with facility construction to commence in Q2 2026.
[220] Ex. Xcel-17 at 4:15–17 (Samuel Direct).
[221] Ex. Xcel-17 at 4:17–20 (Samuel Direct).
[222] ~~Ex. Xcel-17 at 4:20–22 (Samuel Direct)~~FEIS at 57.
[223] Ex. Xcel-2 at 4 (RP Application).
[224] Ex. Xcel-16 at 7:12–14 (Langan Direct).

identifying, refining, and comparing route options to arrive at the proposed route ~~options~~ alternatives and connector segments identified in the RP Application.[225]

~~162.~~165. Xcel Energy's route development process included consideration of statutory and rule requirements, information gathering, public outreach and input (including multiple rounds of public meetings), and comparison of route segments and alignments.[226]

~~163.~~166. Xcel Energy developed a geographic information system (GIS) database of information gathered from publicly available data resources and from on-site field review efforts that was used to compare the merits of various routing options with a goal of developing Application Routes that minimize impacts to sensitive resources to the extent practicable.[227]

~~164.~~167. Xcel Energy identified the following steps that were taken as part of this process:

- Establish boundaries for Routing Study Area;
- Identify opportunities and constraints;
- Conduct local government and agency outreach;
- Conduct initial outreach in the routing study area;
- Review initial route network in the field;
- Hold public open house meetings;
- Review and refine routes, run comparative analysis to remove most impactful routes;
- Hold second round of open house meetings;
- Review, refine routes, run comparative analysis to remove most impactful routes. optimize route segments and connect for end to end routes for RP Application; and

[225] Ex. Xcel-16 at 7:14–16 (Langan Direct).
[226] Ex. Xcel-16 at 7:16–20 (Langan Direct).
[227] Ex. Xcel-16 at 7:20–24 (Langan Direct); Ex. Xcel-2 at 3–4 (RP Application).

- Conduct constructability review of end-to-end routes.[228]

~~165.~~168. To minimize impacts on the environment and landowners, Xcel Energy stated that, where feasible, it attempted to avoid the following areas within the Routing Study Area:

- Residences: No occupied residences within the transmission line's 150- foot-wide right-of-way.
- Municipal boundaries: No 150-foot-wide right-of-way for the transmission lines proposed through cities.
- Tribally-owned properties: No routes through land owned by Tribal governments.
- Federally-owned properties: No routes through U.S. Fish and Wildlife Service Waterfowl Production Areas, historic landmarks, or publicly owned properties that were acquired with federal Land and Water Conservation Act funding.
- State-owned properties: No routes through State Parks, Wildlife Management Areas, Scientific and Natural Areas, or Aquatic Management Areas.
- Lakes, Rivers, and Calcareous Fens: No routes are proposed that would require placement of a transmission structure foundation in a lake, river, or calcareous fen.
- Public Airports: No routes are proposed that would create an aviation hazard at a public airport per Federal Aviation Administration and Minnesota Department of Transportation regulations.
- Regional, County, and Municipal Parks: No routes are proposed that cross within the boundaries of these recreation lands.

[228] Ex. Xcel-2 at 25–26 (RP Application); *see* Ex. Xcel-2 at Sections 3.2 and 3.3 (RP Application) for additional discussion of Xcel Energy's route development, refinement, and comparative analysis processes

- Cemeteries, Schools, Hospitals, Public Buildings: No routes are proposed that would include these facilities within the transmission line's 150-foot-wide right-of-way.[229]

B. Application Routes

~~166.~~169. As a result of Xcel Energy's routing development process, two route and four connector segments were identified in the RP Application.[230]

i. Green Segment

~~167.~~170. The Green Segment serves as the interconnection from the Sherco Substation to the Sherco Solar West Substation and is common to both the Purple and Blue Routes.[231] The Green Segment will not require additional right-of-way because the existing 150-foot right-of-way will be sufficient for adding a second circuit to Xcel Energy's existing Line 5651 gen-tie line between the Sherco Solar West Substation and the Sherco Substation.[232]

~~168.~~171. The Green Segment begins at the Sherco Substation and travels north/northwest out of the substation, generally paralleling 125th Avenue toward County Road 8.[233] The Green Segment then crosses County Road 8, then turns west paralleling the county road toward County Road 53.[234] At County Road 53, the Green Segment travels north along the east side of the county road for a short stretch, crosses to the west side of the county road, and enters the Sherco Solar West Substation.[235]

[229] Ex. Xcel-16 at 8:23–9:24 (Langan Direct); Ex. Xcel-2 at 26–28 (RP Application).
[230] Ex. Xcel-2 at 22 (RP Application).
[231] Ex. Xcel-2 at 46 (RP Application).
[232] Ex. Xcel-2 at 8, 46 (RP Application).
[233] Ex. Xcel-2 at 46 (RP Application).
[234] Ex. Xcel-2 at 46 (RP Application).
[235] Ex. Xcel-2 at 46 (RP Application).

ii. Purple Route

~~169.~~172. The Purple Route is the westernmost route proposed for the Project and is approximately 171 miles long, crossing Sherburne, Wright, Stearns, Meeker, Kandiyohi, Chippewa, Renville, Yellow Medicine, and Lyon counties.[236]

~~170.~~173. The Purple Route predominantly follows property lines, agricultural field lines, and roads where practicable.[237] The Purple Route also follows existing transmission lines where it crosses the Mississippi and Minnesota Rivers.[238]

iii. Blue Route

~~171.~~174. The Blue Route is the easternmost route proposed for the Project, and is approximately 174 miles in length, traversing Sherburne, Stearns, Meeker, Kandiyohi, Renville, Redwood, and Lyon counties.[239]

~~172.~~175. Similar to the Purple Route, the Blue Route predominantly follows property lines agricultural field lines, and roads where practicable. The Blue Route also follows an existing transmission line where it crosses the Minnesota River.[240]

C. Route Alternatives Evaluated in EIS

~~173.~~176. During the EIS scoping comment period, members of the public, state agencies, and local units of government recommended 60 route segments, 14 route connectors, and four alternative alignments.[241]

~~174.~~177. EERA staff analyzed the route segments, connectors, and alternative alignments recommended by commenters to determine if their inclusion in the EIS would aid in the Commission's decision on the RP Application.[242] EERA recommended that 48 route segments, 11 route connectors, and four alignment alternatives be evaluated in the EIS.[243]

~~175.~~178. The EIS analyzed route alternatives on a regional basis (Regions A through G).

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[236] Ex. Xcel-2 at 8 (RP Application); Ex. Xcel-16 at 5:2–7 (Langan Direct).
[237] Ex. Xcel-2 at 8 (RP Application).
[238] Ex. Xcel-2 at 8 (RP Application).
[239] Ex. Xcel-2 at 8 (RP Application).
[240] Ex. Xcel-2 at 8 (RP Application).
[241] Ex. EERA-7 at 6 (Scoping Summary and Recommendation).
[242] Ex. EERA-7 at 6 (Scoping Summary and Recommendation).
[243] Ex. EERA-7 at 7 (Scoping Summary and Recommendation).

~~176.~~179. Region A is the southernmost region at the beginning of the project. It includes the Garvin Substation (Section 3.2.4.1) and one of the options for siting the intermediate substation (Section 3.2.4.2). Region A is in Lyon County, Minnesota. Within Region A, the EIS analyzed seven route segments and four potential refinements, as reflected in Table 3-2 and Table 3-3 of the EIS depicted below:

Table 3-2 Region A Route Segments Summary

Route Segment Name	Association to Applicant-Proposed Routes [1]	Total Length (miles)
Route Segment A1	applicant-proposed Purple Route	17.5
Route Segment A2	Purple variation	17.6
Route Segment A3	applicant-proposed Blue Route	14.6
Route Segment A4	Blue variation [2]	18.1
Route Segment A5	Blue variation	15.1
Route Segment A6	Blue variation	14.5
Route Segment A7	Blue variation	14.6

[1] This column indicates whether the route segment by region is either a subpart of the Purple Route or Blue Route as proposed by the applicant, is a variation of one the applicant-proposed routes, or includes components of both of the applicant-proposed routes.
[2] This variation includes Route Connector 101 which was proposed by the applicant as Connector D. It connects to the Purple Route at the conclusion of this region.

Table 3-3 Region A Potential Refinements Summary

Route Segments	Association to Applicant-Proposed Routes [1]	Total Length (miles)
Route Segment 204	Purple	1.5
Route Segment 206	Purple	2.0
Route Segment 207	route segment starting and ending on Route Connector 101	1.0
Route Segment 208	route segment starting and ending on Route Connector 101	1.5

[1] This column indicates whether the route segment leaves and returns to the Purple Route, the Blue Route, or Route Connector 101.

~~177.~~180. Region B includes options for siting the intermediate substation (Section 3.2.4.2) and the support substation (Section 3.2.4.3). It is in Lyon, Yellow Medicine, Chippewa, Redwood, and Renville counties, Minnesota. This region also includes the towns of Franklin, Hanley Falls, and Wood Lake. Within Region B, the EIS analyzed four route segments and 12 potential refinements, as reflected in Table 3-5 and Table 3-6 of the EIS depicted below:

Table 3-5 Region B Route Segments Summary

Route Segment Name	Association to Applicant-Proposed Routes [1]	Total Length (miles)
Route Segment B1	applicant-proposed Purple Route	45.4
Route Segment B2	Blue to purple variation [2]	51.0
Route Segment B3	Purple variation	46.9
Route Segment B4	applicant-proposed Blue Route	75.3

[1] This column indicates whether the route segment by region is either a subpart of the Purple Route or Blue Route as proposed by the applicant, is a variation of one the applicant-proposed routes, or includes components of both of the applicant-proposed routes.
[2] This variation includes Route Connector 102, which was proposed as a route alternative during scoping and includes a portion of the Purple Route.

Table 3-6 Region B Potential Refinements Summary

Route Segments	Association to Applicant-Proposed Routes [1]	Total Length (miles)
Route Segment 210	Purple	0.5
Route Segment 221	Purple	3.2
Route Segment 211	Blue	7.0
Route Segment 219	Blue	7.1
Route Segment 212	Blue	4.5
Route Segment 213	Blue	5.0
Route Segment 214	Blue	2.2
Route Segment 220	Blue	2.3
Route Segment 215	Blue	2.4
Route Segment 216	Blue	2.2
Route Segment 217	Blue	3.5
Route Segment 218	Blue	3.5

[1] This column indicates whether the route segment leaves and returns to the Purple Route or leaves and returns to the Blue Route.

~~178.~~181. Region C includes the potential location of the voltage support substation (Section 3.2.4.3). It is in Chippewa, Kandiyohi, Renville, and Meeker counties, Minnesota. This region also includes the city of Prinsburg. Within Region C, the EIS analyzed four route segments and four potential refinements, as reflected in Table 3-8 and Table 3-9 of the EIS depicted below:

Table 3-8 Region C Route Segments Summary

Route Segment Name	Association to Applicant-Proposed Routes [1]	Total Length (miles)
Route Segment C1	applicant-proposed Purple Route	56.0
Route Segment C2	Purple to blue variation [2]	58.5
Route Segment C3	Purple to blue variation [3]	57.9
Route Segment C4	applicant-proposed Blue Route	28.6

[1] This column indicates whether the route segment by region is either a subpart of the Purple Route or Blue Route as proposed by the applicant, is a variation of one the applicant-proposed routes, or includes components of both of the applicant-proposed routes.
[2] This variation starts at the Purple Route, includes Route Connector 103 which was proposed as a route alternative during scoping, and includes a portion of the Blue Route.
[3] This variation starts at the Purple Route, includes Route Connector 104 which was proposed by the applicant as Connector C, and includes a portion of the Blue Route.

Table 3-9 Region C Potential Refinements Summary

Route Segments	Association to Applicant-Proposed Routes [1]	Total Length (miles)
Route Segment 224	Purple	3.8
Route Segment 225	Purple	2.2
Route Segment 222	Blue	8.0
Route Segment 223	Blue	8.0

[1] This column indicates whether the route segment leaves and returns to the Purple Route or leaves and returns to the Blue Route.

~~179.~~182. Region D is in Meeker County. Within Region D, the EIS analyzed eight route segments and one potential refinement, as reflected in Table 3-11 from the EIS depicted below:

Table 3-11 Region D Route Segments Summary

Route Segment Name	Association to Applicant-Proposed Routes [1]	Total Length (miles)
Route Segment D1	applicant-proposed Purple Route	9.1
Route Segment D2	Purple variation	9.2
Route Segment D3	Purple to blue variation	10.1
Route Segment D4	applicant-proposed Blue Route	10.8
Route Segment D5	Blue variation [2]	10.9
Route Segment D6	Blue variation	11.4
Route Segment D7	Blue variation [3]	12.8
Route Connector 105	Can connect Purple Route and Blue Route in either direction	1.0

[1] This column indicates whether the route segment by region is either a subpart of the Purple Route or Blue Route as proposed by the applicant, is a variation of one the applicant-proposed routes, or includes components of both of the applicant-proposed routes.
[2] Includes a portion of Route Connector 106, which was proposed by the applicant as Connector A.
[3] This variation includes a portion of the Blue Route, Route Connector 106 which was proposed by the applicant as Connector A, and a portion of the Purple Route.
[4] Route Connector 105 was proposed by the applicant as Connector B.

~~180.~~183. Region E is in Meeker and Stearns Counties, Minnesota. Within Region E, the EIS analyzed three route segments and three potential refinements, as reflected in Table 3-13 and Table 3-14 from the EIS depicted below:

Table 3-13 Region E Route Segments Summary

Route Segment Name	Association to Applicant-Proposed Routes [1]	Total Length (miles)
Route Segment E1	applicant-proposed Purple Route	17.7
Route Segment E2	applicant-proposed Blue Route	16.6
Route Connector 107	Can connect Purple Route and Blue Route in either direction	1.0

[1] This column indicates whether the route segment by region is either a subpart of the Purple Route or Blue Route as proposed by the applicant, is a variation of one the applicant-proposed routes, or includes components of both of the applicant-proposed routes.

Table 3-14 Region E Potential Refinements Summary

Route Segments	Association to Applicant-Proposed Routes [1]	Total Length (miles)
Route Segment 230	Purple	0.7
Route Segment 231	Purple	4.2
Route Segment 232	Purple	1.8

[1] This column indicates whether the route segment leaves and returns to the Purple Route, or leaves and returns to the Blue Route.

~~181.~~184. Region F is in Stearns County, Minnesota. Within Region F, the EIS analyzed nine route segments, as reflected in Table 3-15 of the EIS depicted below:

Table 3-15 Region F Route Segments Summary

Route Segment Name	Association to Applicant-Proposed Routes [1]	Total Length (miles)
Route Segment F1	applicant-proposed Purple Route	2.2
Route Segment F2	Purple to blue variation [2]	2.3
Route Segment F3	Purple to blue variation [3]	2.7
Route Segment F4	applicant-proposed Blue Route	2.7
Route Segment F5	Blue to purple variation [4]	2.4
Route Segment F6	Blue variation	2.7
Route Segment F7	Purple variation	2.1
Route Segment F8	Blue to purple variation [5]	2.7
Route Connector 108	Can connect Purple Route and Blue Route in either direction	0.5

[1] This column indicates whether the route segment by region is either a subpart of the Purple Route or Blue Route as proposed by the applicant, is a variation of one the applicant-proposed routes, or includes components of both of the applicant-proposed routes.
[2] This variation starts at the Purple Route, includes Route Connector 104 which was proposed as a route alternative during scoping, and includes a portion of the Blue Route.
[3] This variation includes a portion of the Purple Route, Route Connector 109 which was proposed by the DNR during scoping, and a portion of the Blue Route.
[4] This variation includes a portion of the Blue Route, a portion of a route segment which was proposed as a route alternative during scoping, and ends at the Purple Route.
[5] This variation includes a portion of the Blue Route, a portion of a route connector and a route segment which were proposed as a route alternative during scoping, and a portion of the Purple Route.

~~182.~~185. Region G ends at the Sherco Solar West Station (Section 3.2.4.4) and is the northernmost region. It is in Stearns, Sherburne, and Wright Counties, Minnesota. This region also includes the cities of St. Augusta and St. Cloud. Within Region G, the EIS analyzed six route segments and 15 potential refinements, as reflected in Table 3-17 and Table 3-18 of the EIS depicted below:

Table 3-17 Region G Route Segments Summary

Route Segment Name	Association to Applicant-Proposed Routes [1]	Total Length (miles)
Route Segment G1	applicant-proposed Blue Route	25.4
Route Segment G2	Blue variation	24.6
Route Segment G3	applicant-proposed Purple Route	22.7
Route Segment G4	Blue to purple variation [2]	25.0
Route Segment G5	Purple variation	24.3
Route Segment G6	Blue to purple variation [3]	22.7

[1] This column indicates whether the route segment by region is either a subpart of the Purple Route or Blue Route as proposed by the applicant, or is a variation of one the applicant-proposed routes, or includes components of both of the applicant-proposed routes.
[2] This variation includes a portion of the Blue Route, Route Connector 115 which was proposed by the DNR during scoping, and ends at the Purple Route.
[3] This variation includes a portion of the Blue Route, Route Connector 111 which was proposed as a route alternative during scoping DNR during scoping, and ends at the Purple Route.

Table 3-18 Region G Potential Refinements Summary

Route Segments	Association to Applicant-Proposed Routes [1]	Total Length (miles)
Route Segment 235	Blue	3.2
Route Segment 236	Blue	3.4
Route Segment 237	Blue	3.3
Route Segment 238	Blue	3.2
Route Segment 239	Blue	3.2
Route Segment 240	Blue	3.2
Route Connector 249	Can connect Purple Route and Blue Route	2.5
Route Segment 244	Blue	2.1
Route Segment 245	Blue	4.2
Route Segment 246	Blue	6.9
Route Segment 242	Purple	1.1
Route Segment 250	Can connect Purple Route and Blue Route	1.3
Route Segment 243	Purple	2.1
Route Segment 247	Purple	2.0
Route Segment 248	Purple	2.3

[1] This column indicates whether the route segment leaves and returns to the Purple Route, or leaves and returns to the Blue Route.

D. Applicant's Preferred Route

~~183.~~186. At the time of filing the RP Application, Xcel Energy did not identify a route preference as between the Blue and Purple Routes.[244] In the Direct Testimony of Matthew Langan, however, the Applicant stated that it had analyzed the route and alignment alternatives that would be studied in the EIS and, as a result of that analysis, determined that a modified version of the Blue Route was the Applicant's preferred route (Preferred Route).[245] As defined in Direct Testimony, the Preferred Route included the Green Segment and the Blue Route, modified by the following route segment alternatives: 202, 212, 216, 219, 226, and 244.[246] The Preferred Route (with the Green Segment) is approximately 178 miles long and within Sherburne, Stearns, Kandiyohi, Meeker, Renville, Redwood, and Lyon counties.[247]

~~184.~~187. Mr. Langan stated that Xcel Energy supported the Preferred Route because in Xcel Energy's opinion the Blue Route was already the least impactful route across many resource categories, including the fewest residences within 300 and 500 feet of the Project centerline – residential proximity was the number one

[244] Ex. Xcel-16 at 15:10–13 (Langan Direct).
[245] Ex. Xcel-16 at 15:13–16 and 15:21–24 (Langan Direct).
[246] Ex. Xcel-16 at 15:21–24 (Langan Direct).
[247] Ex. Xcel-16 at 15:21–16:4 (Langan Direct). Without the Green Segment, the Preferred Route is approximately 175 miles long.

priority the Applicant heard from landowners during outreach.[248] The inclusion of the six route segment alternatives results in further reducing impacts to the following resources:

- Native Plant Communities
- Sites of Biodiversity
- Forested upland
- Forested wetland
- MDNR Public Waters
- Improved crossing of Cottonwood River
- Agriculture[249]

~~185.~~188. Mr. Langan stated that Preferred Route includes Xcel Energy's preferred crossing locations for the Minnesota, Mississippi, and North Fork of the Crow Rivers.[250] With respect to the Mississippi River, specifically, Mr. Langan explained that the Applicant preferred the Preferred Route's crossing because it is adjacent to undeveloped land and crosses a narrow channel of the river.[251] More specifically, when developing the Blue and Purple Routes, Xcel Energy considered six potential crossings of the Mississippi River (see RP Application § 3.3.1).[252] Crossings 1 through 4 considered by Xcel Energy were favorable due to Xcel Energy ownership of land on both sides of the Mississippi River; however, the land south and west of the river crossing is a residential area with limited availability for a 150-foot right-of-way.[253] Crossing 5 considered by Xcel Energy would follow existing infrastructure at the river crossing but would result in residential impacts south and west of Sherco.[254] Ultimately, Xcel Energy prefers Crossing 6, which is part of the Preferred Route (and the Blue Route).[255] Although Crossing 6 does not have existing infrastructure at the crossing, it is located adjacent to undeveloped land and would

[248] Ex. Xcel-16 at 16:13–16 (Langan Direct).
[249] Ex. Xcel-16 at 16:16–25 (Langan Direct).
[250] Ex. Xcel-16 at 17:1–3 (Langan Direct).
[251] Ex. Xcel-16 at 17:7–8 (Langan Direct).
[252] Ex. Xcel-16 at 17:8–10 (Langan Direct).
[253] Ex. Xcel-16 at 17:10–14 (Langan Direct).
[254] Ex. Xcel-16 at 17:14–16 (Langan Direct).
[255] Ex. Xcel-16 at 17:16–17 (Langan Direct).

cross at a narrow river channel.[256] As compared to other potential crossings, this crossing of the Mississippi River minimizes impacts to residences.[257]

~~186.~~189. Mr. Langan also described the engineering benefits of the Preferred Route, stating that the Applicant anticipates that the Preferred Route will have fewer structures and foundations, as well as approximately half the number of crossings of existing transmission lines of 115 kV or greater.[258] This improves constructability and ongoing maintenance and reduces the potential for future outages due to maintenance of other lines.[259] Likewise, the Preferred Route does not follow railroad corridors, which negates the need for induction studies and mitigation, which can be time-consuming and costly.[260]

~~187.~~190. In Mr. Langan's Direct Testimony, Xcel Energy also discussed Route Segment 223, which was proposed by a member of the public during scoping and would reduce impacts to the Lux Airstrip, an existing grass airstrip. Mr. Langan stated that Xcel Energy does not support incorporating the entirety of Route Segment 223 into the Preferred Route because of increased impacts to residents on the southern portion of the route alternative, and because of constructability issues related to multiple potential crossings of the existing 69 kV line in this area.[261] However, Xcel Energy does not oppose the northern approximately one mile of Route 223.[262] Because a short length of the modified Route Segment 223 is not within a route width studied in the DEIS or FEIS, Xcel Energy provided a table summarizing the potential human and environmental impacts of the route, as well.[263] Mr. Langan stated that Xcel Energy would not object to the inclusion of modified Route Segment 223 in the Project's route if so ordered by the Commission.[264] In its response to comments on the DEIS, EERA staff stated Alternative routes were proposed during the scoping period and those alternatives accepted by the Commission for further study are listed in the scoping decision.[265]

~~188.~~191. Xcel Energy initially objected to Route Segment 213 because of close proximity to the Minnesota Department of Natural Resources Sheridan Wildlife Management Area (WMA) and state conservation easements along the Redwood River, a greenfield crossing of the Redwood River, additional wetland crossings, and

[256] Ex. Xcel-16 at 17:18–20 (Langan Direct).
[257] Ex. Xcel-16 at 17:10–21 (Langan Direct).
[258] Ex. Xcel-16 at 17:24–26 (Langan Direct).
[259] Ex. Xcel-16 at 17:26–18:1 (Langan Direct).
[260] Ex. Xcel-16 at 18:1–3 (Langan Direct).
[261] Ex. Xcel-16 at 12:1–6 (Langan Direct).
[262] Ex. Xcel-16 at 12:6–10 (Langan Direct).
[263] Ex. Xcel-16 at 13:2–14:2 (Langan Direct).
[264] Ex. Xcel-16 at 14:3–6 (Langan Direct).
[265] FEIS at Appendix O.

three additional angle structures that increase cost. Route Segment 213 does, however, provide a net reduction of four residences within 300 feet of the transmission line. Therefore, upon further analysis, including review of comments made during the public hearings, Xcel Energy stated that, although there would be an increase in cost, Route Segment 213 would be feasible because the Project alignment could avoid the WMA and conservation easements. Xcel Energy stated that it does not object to the extent the Commission selects Route Segment 213 as part of the Project's route.

~~189.~~192. In its Response to Hearing Comments, Xcel Energy also explained that it had previously indicated that it had no position with respect to Route Segment 239. That continues to be the case because the route segment appears to have similar impacts as the corresponding section of the Preferred/Blue Route.[266]

E. MDNR Route Preferences

~~190.~~193. In its November 25, 2024, comments, MDNR identified its route preferences by region. Table 2 below is taken from Xcel Energy's Response to Hearing Comments and identifies, in each region, MDNR's route preferences, as compared to Xcel Energy's Preferred Route.

Table 2

Region	MDNR Route Preference	Xcel Energy Preferred Route
A	A6 (Blue)	A6 (Blue)
B	B4 + 211, 214 (Blue)	B4 + 212 + 216 + 219 (Blue)
C	C4 + 223 (Blue)	C4 (Blue)
	105 (Connector B) (Purple)	
D	D1 (Purple)	D5 (Blue)
E	E1 (Purple)	E2 (Blue)
F	F1+ 109 or 110 (Purple)	F4 (Blue)
G	G1 and G4 + (237, 238, 240, 249, or 250+114) + G4 (247 or 248) (Blue to Purple) *OR* G3 + G5 (241) + G4 (247 or 248) (Purple)	G1 + 244 (Blue)

[266] Xcel Energy Response to Hearing Comments at 24 (Dec. 13, 2024).

194. MDNR's comments identified multiple potential route segments in some regions. To allow for some comparison among MDNR's route preferences, Xcel Energy's Preferred Route, and the Blue and Purple Routes, Xcel Energy compiled a ~~"proxy"~~ MDNR end-to-end route in its *Response to Hearing Comments.* ~~that~~ The MDNR Route includes the following route segments: Route A6; Route B4 and Route Segments 211 and 214; Route C4 with Route Segment 223, and Route Connector 105; Route D1; Route E1; Route F1 and Route Connector 110; and Route G1 with Route Segments 240, 249, and 115; and G3 with Route Segment 248. Xcel Energy stated that selecting a different combination of MDNR's preferred route segments in areas where they overlap would result in different impact calculations.[267]

F. EERA Route Recommendations

195. In its January 29, 2025, *EERA Comments on Xcel Energy's Proposed Findings of Fact, Conclusions of Law, and Recommendations*, EERA staff made its route recommendations as compared to the Applicant's Preferred Route.

Region	EERA Route Recommendations	Xcel Energy Preferred Route
A	A6 (Blue)	A6 (Blue)
B	B4 + 216 + 211 + AA1 + 220 (Blue)	B4 + 212 + 216 + 219 (Blue)
C	C4 (Blue) + 223	C4 (Blue)
D	D5 (Blue)	D5 (Blue)
E	E2 (Blue)	E2 (Blue)
F	F4 (Blue)	F4 (Blue)
G	G1 + 244 (Blue)	G1 + 244 (Blue)

~~191.~~196. **PROPOSED FINDINGS OF FACT, CONCLUSIONS OF LAW, AND RECOMMENDATIONS**

V. PUBLIC PARTICIPATION

A. Applicant's~~Public~~ Outreach

~~192.~~197. Xcel Energy initiated public outreach through Project correspondence to approximately 150,000 landowners who own parcels within the pre-application routing study area and other stakeholders, and conducted virtual open house

[267] Xcel Energy Response to Hearing Comments at 18-19 (Dec. 13, 2024).

sessions in November 2022.[268] Approximately 400 people attended the online meetings where Project representatives presented an overview of the Project plan and associated regulatory process.[269]

~~193.~~198. Xcel Energy next conducted two rounds of public open houses, including online and in-person sessions.[270] Open house invitations were sent to landowners with parcels in the routing study area on February 1, 2023, and the first round of open houses was held in February and March 2023 where a total of approximately 550 people attended.[271] On May 24, 2023, Xcel Energy sent open house invitations to landowners within the area after refining refined route options.[272] The second round of open houses was held in June 2023 where a total of approximately 725 people attended.[273]

~~194.~~199. During the public open houses, formal and informal comments were collected and summarized. Common topics included the following:

- Proximity to residences;
- Agricultural impacts and avoidance/ mitigation;
- Following section/property/field lines, roads, and highways;
- Impacts related to paralleling existing transmission lines (commenters expressed concern about a new transmission line paralleling an existing transmission line that was located on a field boundary or along a road right-of-way because the new line would create additional impacts to the agricultural land use.);
- Environmentally sensitive areas;
- Aesthetic impacts;

  Property values; and
- Safety.[274]

B. Public Scoping Meetings~~Comments~~

[268] Ex. Xcel-2 at 216 (RP Application).
[269] Ex. Xcel-2 at 216 (RP Application).
[270] Ex. Xcel-2 at 216 (RP Application).
[271] Ex. Xcel-2 at 216 (RP Application).
[272] Ex. Xcel-2 at 216 (RP Application).
[273] Ex. Xcel-2 at 216 (RP Application).
[274] Ex. Xcel-2 at 217–18 (RP Application).

200. Public information and scoping meetings were held as follows:

Date	Time	Meeting Location
January 24, 2024	10:00 a.m. (doors open pre-meeting hour) 11:00 a.m. - 1:00 p.m. (formal meeting)	Kilowatt Community Center 600 Kilowatt Drive Granite Falls, MN 56241
January 24, 2024	5:00 p.m. (doors open pre-meeting hour) 6:00 p.m. – 8:00 p.m. (formal meeting)	EverSpring Inn & Suites 1500 East College Drive Marshall, MN 56258
January 25, 2024	10:00 a.m. (doors open pre-meeting hour) 11:00 a.m. - 1:00 p.m. (formal meeting)	Max's Grill 2425 West Lincoln Avenue Olivia, MN 56277
January 25, 2024	5:00 p.m. (doors open pre-meeting hour) 6:00 p.m. – 8:00 p.m. (formal meeting)	Redwood Area Community Center 901 East Cook Street Redwood Falls, MN 56283
January 30, 2024	5:00 p.m. (doors open pre-meeting hour) 6:00 p.m. – 8:00 p.m. (formal meeting)	Litchfield Civic Arena 900 North Gilman Avenue Litchfield, MN 55355
January 31, 2024	10:00 a.m. (doors open pre-meeting hour) 11:00 a.m. - 1:00 p.m. (formal meeting)	Monticello Community Center 505 Walnut Street Monticello, MN 55362
January 31, 2024	5:00 p.m. (doors open pre-meeting hour) 6:00 p.m. – 8:00 p.m. (formal meeting)	Kimball Community Schools Cafetorium 100 Highway 55 West Kimball, MN 55353
February 1, 2024	6:00 p.m.	Virtual Meeting Webex Platform

201. The purpose of these meetings was to (1) provide information to the public about the proposed project and the state's high-voltage transmission line certificate of need and route permitting processes; and (2) provide members of the public an opportunity to participate in developing the scope of the EIS. This includes commenting on issues or concerns related to the proposed project and proposing alternatives for consideration.[275]

[275] Ex. PUC 4 at 1 (Public Information and Scoping Meeting Notice).

202. As identified in Section II above, from January 8, 2024, to February 21, 2024, members of the public and stakeholders submitted written comments regarding the Project and the scope of the EIS to be prepared by EERA for the Project.[276]

C. Public Hearings and DEIS Meetings

~~195.~~203. Public hearings / DEIS meetings were held as follows:

Date	Time	Meeting Location
October 29, 2024	11:00 a.m. –2:30 p.m.	Monticello Community Center 505 Walnut Street Monticello, Minnesota 55362
October 29, 2024	6:00 p.m.	Virtual public hearing WebEx Platform
October 30, 2024	10:00 a.m. –1:30 p.m.	Litchfield Opera House 136 N Marshall Avenue Litchfield, Minnesota 55355
October 30, 2024	5:00 p.m. – 8:30 p.m.	Kimball Schools Cafetorium 100 Highway 55 West Kimball, Minnesota 55353
November 6, 2024	10:00 a.m. – 1:30 p.m.	Kilowatt Community Center 600 Kilowatt Drive Granite Falls, Minnesota 56241
November 6, 2024	5:00 p.m.– 8:30 p.m.	Max's Grille 2425 W Lincoln Avenue Olivia, Minnesota 56277
November 7, 2024	10:00 a.m. – 1:30 p.m.	5 Family Ranch 2717 County Road 6 Marshall, Minnesota 56258
November 7, 2024	5:00 p.m.– 8:30 p.m.	Redwood Area Community Center 901 East Cook Street Redwood Falls, Minnesota 56283

~~196.~~204. During the public hearings, members of the public had the opportunity to provide comments and ask questions regarding the Project, as well as the DEIS prepared by EERA for the Project.

[276] Ex. PUC 4 at 3 (Public Information and Scoping Meeting Notice).

~~197.~~205. As identified in Section II above, from October 15, 2024 to November 25, 2024, members of the public and stakeholders also submitted written comments regarding the Project and the DEIS prepared by EERA for the Project.

VI. TRIBAL, FEDERAL, STATE, & LOCAL PARTICIPATION

A. Applicant's Outreach

i. Tribal Nations

~~198.~~206. Xcel Energy has engaged with all Tribal Nations sharing geography with Minnesota, including those Tribal Nations in nearest proximity to the Project.[277]

~~199.~~207. Xcel Energy met with the Upper Sioux Community Pezihutazizi Oyate Tribal Historic Preservation Officer (THPO) on March 2, 2023, and followed up by providing electronic routing files to both the Upper Sioux Community Pezihutazizi Oyate and the Lower Sioux Indian Community.[278] The Upper Sioux Community Pezihutazizi Oyate responded to the Project notification letter on October 10, 2023, and noted that they are interested in continuing to consult on the Project, as the Project areas are part of their ancestral homeland, pass near their current reservation boundary, and cross through some high-potential areas for culturally significant sites.[279]

~~200.~~208. The Bois Forte Band of Chippewa responded to the Project notification letter on September 22, 2023, stating they will defer to the recommendations of the Upper Sioux Community Pezihutazizi Oyate and the Lower Sioux Indian Community, whichever is the lead Tribal agency for the Project.[280] The Bois Forte Band of Chippewa recommended that Tribal monitors are present during ground disturbing activities within a buffer of 250 yards of known historical sites and near the Minnesota River.[281]

~~201.~~209. Xcel Energy shared the proposed Phase I Cultural Resource Reconnaissance survey and Architectural History Inventory survey strategy for the Project with interested Tribal Nations to gather their input on the methodology prior to completing the study.[282] Xcel Energy will continue to coordinate with representatives of interested Tribal Nations, including by providing the results of the Phase I Cultural Resource Reconnaissance survey and Architectural History

[277] Ex. Xcel-16 at 22:7–8 (Langan Direct).
[278] Ex. Xcel-2 at 213 (RP Application); Ex. Xcel-5 at Appendix E (RP Application, Agency Correspondence).
[279] Ex. Xcel-5 at Appendix E (RP Application, Agency Correspondence).
[280] Ex. Xcel-2 at 213 (RP Application); *see* Ex. Xcel-5 at Appendix E (RP Application, Agency Correspondence).
[281] Ex. Xcel-2 at 213 (RP Application); *see* Ex. Xcel-5 at Appendix E (RP Application, Agency Correspondence).
[282] Ex. Xcel-16 at 22:19–21 (Langan Direct).

Inventory survey.[283] Xcel Energy is currently in the process of seeking voluntary access for cultural resource surveys in certain portions of the Project.[284] To the extent Xcel Energy successfully obtains voluntary survey access, Xcel Energy would invite representatives from applicable interested Tribal Nations to participate in survey areas of interest.[285]

~~202.~~210. Most recently, Xcel Energy has contacted the Upper Sioux Community and the Lower Sioux Indian Community to discuss the DEIS, public hearing schedule, and the associated comment periods.[286]

ii. Federal Agencies

~~203.~~211. Xcel Energy initiated public outreach to federal agencies such as the U.S. Army Corps of Engineers (USACE), U.S. Fish and Wildlife Service (FWS), and U.S. Department of Agriculture-Natural Resource Conservation Service (USDA-NRCS) through Project introduction letters in September 2023.[287]

~~204.~~212. The Federal Aviation Administration (FAA) responded to the Project notification letter on September 22, 2023, and directed Xcel Energy to use the Notice Criteria Tool to determine whether Form 7460-1, Notice of Proposed Construction of Alternation is required for the Project.[288]

~~205.~~213. The USACE responded to the Project notification letter on September 26, 2023.[289] On October 12, 2023, USACE provided comments outlining the potential regulatory requirements for the Project and the process for obtaining a Section 10 and/or Section 404 permit from USACE.[290]

~~206.~~214. Xcel Energy is continuing to coordinate with the USACE regarding the Project because the Project will require approvals under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act.[291] The USACE permitting process will not formally begin until after a Commission decision on the Project's final route.[292]

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[283] Ex. Xcel-19 at 3:3–4 (Langan Surrebuttal).
[284] Ex. Xcel-16 at 22:21–23 (Langan Direct).
[285] Ex. Xcel-16 at 22:23–26 (Langan Direct).
[286] Ex. Xcel-19 at 3:4–7 (Langan Surrebuttal).
[287] Ex. Xcel-2 at 212 (RP Application); *see* Ex. Xcel-5 at Appendix E (RP Application, Agency Correspondence).
[288] Ex. Xcel-2 at 213 (RP Application); *see* Ex. Xcel-5 at Appendix E (RP Application, Agency Correspondence).
[289] Ex. Xcel-2 at 212 (RP Application); *see* Ex. Xcel-5 at Appendix E (RP Application, Agency Correspondence).
[290] Ex. Xcel-2 at 212 (RP Application); *see* Ex. Xcel-5 at Appendix E (RP Application, Agency Correspondence).
[291] Ex. Xcel-16 at 18:17–20 (Langan Direct).
[292] Ex. Xcel-16 at 18:20–22 (Langan Direct).

iii. State Agencies

~~207.~~215. Xcel Energy met with the Minnesota Department of Agriculture MDA on December 20, 2022, to provide Project background and proposed route options.[293] MDA staff indicated that an Agriculture Mitigation Plan (AIMP) should be prepared for the Project.[294] Xcel Energy prepared a Draft AIMP and will continue to coordinate with the MDA to finalize this plan prior to construction of the Project.[295]

~~208.~~216. Xcel Energy met with MDNR staff on December 19, 2022, and March 16 and May 24, 2023 to discuss impacts to resources, such as SOBS, NPCs, native prairie areas, and the crossings of the Mississippi, North Fork of the Crow, and Minnesota Rivers.[296] MDNR provided comments in a letter dated July 10, 2023, recommending further review of certain areas along the routes to reduce impacts to sensitive areas such as WMAs and trout streams. Xcel Energy refined several route options based on these recommendations.[297]

~~209.~~217. Xcel Energy met with the MnDOT on December 19, 2022 and August 3, 2023.[298] The meetings included a discussion of providing Project background and potential route options. Xcel Energy received a comment letter on August 30, 2023 from MnDOT in which it provided comments and recommendations from different divisions of the agency.[299]

~~210.~~218. Xcel Energy met with the BWSR on August 20, 2023.[300] The discussion focused on routes that intersected with BWSR conservation easements. BWSR staff indicated additional evaluation would be required to assess compatibility of the Project with each easement.[301]

[293] Ex. Xcel-2 at 213 (RP Application).
[294] Ex. Xcel-2 at 213 (RP Application).
[295] Ex. Xcel-2 at 213 (RP Application); *see* Xcel-6 at Appendix H (RP Application, Draft AIMP).
[296] Ex. Xcel-2 at 214 (RP Application).
[297] Ex. Xcel-2 at 214 (RP Application); *see* Ex. Xcel-5 at Appendix E (RP Application, Agency Correspondence).
[298] Ex. Xcel-2 at 214 (RP Application).
[299] Ex. Xcel-2 at 214 (RP Application); *see* Ex. Xcel-5 at Appendix E (RP Application, Agency Correspondence).
[300] Ex. Xcel-2 at 214 (RP Application).
[301] Ex. Xcel-2 at 214 (RP Application).

iv. Local Government Units

~~211.~~219. Xcel Energy met with representatives of local units of government, including Wright, Nicollet, Chippewa, Lyon, Renville, Stearns, Meeker, Redwood, Kandiyohi, and Sherburne counties throughout 2023 to introduce the Project, the routing and regulatory process, and Project timelines.[302] General topics discussed in these meetings included the importance of public and landowner engagement, planned development in municipal areas, and future road and highway projects.[303]

B. Participation in Route Permit Docket.

~~212.~~220. In addition to the pre-application outreach conducted by the Applicant, comments were also submitted in the Commission dockets by one Tribal Nation and state and local government units.

i. Tribal Nations.

~~213.~~221. On March 20, 2024, the Commission filed a public comment from the Lower Sioux Indian Community regarding potential culturally sensitive locations.[304]

ii. State Agencies.

~~214.~~222. On February 21, 2024, MDNR filed comments identifying route alternatives and issues for consideration in the EIS, including: the Mississippi River crossing; designated wild, scenic, and recreational rivers; other public waters; calcareous fen; wildlife management areas; sites of biodiversity significance; native plant communities; state-listed species; facility lighting; dust control; and, wildlife-friendly erosion control.[305] On November 26, 2024, MDNR filed comments on the DEIS.[306]

~~215.~~223. On February 21, 2024, MnDOT filed comments explaining that the Project has the potential to impact state trunk highways, that ongoing coordination with MnDOT should occur, and that permits/approvals from MnDOT may be required.[307] On November 25, 2024, MnDOT filed comments on the DEIS.[308]

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[302] Ex. Xcel-2 at 214 (RP Application).
[303] Ex. Xcel-2 at 214 (RP Application).
[304] Public Comments (Lower Sioux Indian Community) (Mar. 20, 2024) (eDocket No. 20243-204502-01).
[305] MDNR Comments (Feb. 21, 2024) (eDocket Nos. 20242-203694-01, 20242-203694-02, and 20242-203694-03); *see also* EERA-4 at Comment No. 285 (Public Scoping Comments).
[306] MDNR Comments (Nov. 26, 2024) (eDocket Nos. 202411-212410-01, 202411-212410-02, and 202411-212410-03).
[307] MnDOT Comments (Feb. 21, 2024) (eDocket No. 20242-203676-02); *see also* EERA-4 at Comment No. 312 (Public Scoping Comments).
[308] MnDOT Comments (Nov. 25, 2024) (eDocket No. 202411-212360-01).

iii. Local Government Units.

~~216.~~224. Prior to Xcel Energy filing the CN Application or RP Application, the Commission received comments on the Project from the Harvey Township Board and Meeker County Board.[309] On May 17, 2023, the Commission filed a letter from the Harvey Township Board, dated May 8, 2023, opposing the Project.[310] On August 8, 2023, the Commission filed a public comment from the Meeker County Board, dated June 20, 2023, on the need for continued opportunities for public engagement, including additional public meetings and open houses within Meeker County to address concerns raised by residents and landowners.[311]

~~217.~~225. On February 28, 2024, the Wright County Board of Commissioners filed a public comment stating its preference for the proposed route that crosses over Interstate 94 in Stearns County and follows CSAH 8 south to Becker.[312]

~~218.~~226. On March 20, 2024, EERA filed a comment from the Clearwater Township Clerk concerning the Clearwater Township Route.[313] On November 25, 2024, the Commission filed a public comment from the Clearwater Township Board on the DEIS.[314]

~~219.~~227. On March 20, 2024, EERA filed a comment from the Renville County Board of Commissioners opposing the Blue Route.[315]

~~220.~~228. On March 20, 2024, EERA filed a comment from the Clearwater City Council stating its preference for the proposed route that crosses over Interstate 94 in Stearns County and follows CSAH 8 south to Becker.[316]

~~221.~~229. On March 20, 2024, EERA filed a comment from the Lake Lillian Township Board stating its preference that transmission lines be placed near roads.[317]

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[309] Ex. PUC-5 at 1 (Order accepting RP Application as Complete).
[310] Public Comments (Township of Harvey) (May 17, 2023) (eDocket No. 20235-195895-02).
[311] Public Comments (Meeker County) (Aug. 8, 2023) (eDocket No. 20238-198073-02).
[312] Public Comments (Wright County Board of Commissioners) (Feb. 28, 2024) (eDocket No. 20242-203898-01); *see also* EERA-4 at Comment No. 58 (Public Scoping Comments).
[313] EERA-4 at Comment No. 300 (Public Scoping Comments).
[314] Public Comments (Clearwater Township Board) (Nov. 25, 2024) (eDocket No. 202411-212392-01).
[315] EERA-4 at Comment No. 94 (Public Scoping Comments).
[316] EERA-4 at Comment No. 212 (Public Scoping Comments).
[317] EERA-4 at Comment No. 286 (Public Scoping Comments).

~~222.~~230. On November 19, 2024, the Commission filed a public comment from the Melville Township Board stating its preference that existing rights-of-way be used for the Project.[318]

VII. CERTIFICATE OF NEED CRITERIA

~~223.~~231. Minnesota Statutes § 216B.243 identifies the criteria the Commission must evaluate when assessing the need for a large energy facility, which includes:

> (1) the accuracy of the long-range energy demand forecasts on which the necessity for the facility is based;
>
> (2) the effect of existing or possible energy conservation programs under Minn Stat. §§ 216C.05 to 216C.30 and 216B.243 or other federal or state legislation on long-term energy demand;
>
> (3) 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 Minn. Stat. § 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 Minn. Stat. § 216B.241, that

[318] Public Comments (Melville Township Board) (Nov. 19, 2024) (eDocket No. 202411-212114-01).

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 is in compliance with applicable provisions of Minn. Stat. §§ 216B.1691 and 216B.2425, subdivision 7, and has filed or will file by a date certain an application for certificate of need under Minn. Stat. § 216B.243 or for certification as a priority electric transmission project under Minn. Stat. § 216B.2425 for any transmission facilities or upgrades identified under Minn. Stat. § 216B.2425, subdivision 7;

(11) whether the applicant has made the demonstrations required under Minn. Stat. § 216B.243, 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.[319]

~~224.~~232. Minn. R. 7849.0120 further provides that the Commission shall grant a certificate of need if it 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;

[319] Minn. Stat. § 216B.243, subd. 3.

(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;

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 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, 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.

~~225.~~233. There is sufficient evidence in the record for the ALJ to assess the Proposed Project using the criteria and factors set out above.

VIII. APPLICATION OF CERTIFICATE OF NEED CRITERIA

A. The Project Meets the Requirements of Minn. R. 7849.0120; Minn. Stat. § 216B.243, subd. 3 (1)-(9)

~~226.~~234. To a significant extent, criteria or concerns the Commission must consider pursuant to Minn. Stat. § 216B.243, subd. 3(1)-(9) are incorporated into the subitems of Minn. R. 7849.0120. This portion of the Report is organized according to the subitems of Minn. R. 7849.0120. The Report notes where the identical or similar criteria is set out in statute. Where a concern for the Commission's consideration pursuant to subdivision 3 is not related to any subitems of Minn. R. 7849.0120, the Report considers the concern separately at the conclusion of this section.

B. Adequacy, Reliability, and Efficiency of Energy Supply

~~227.~~235. Minnesota Rule 7849.0120(A) requires that "the probable result of denial [of a CN] 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. . . ." In making this determination, the Commission is directed to evaluate the criteria discussed below.

i. Criteria (A)(1): Forecast Accuracy

Minn. R. 7849.0120(A)(1): "[T]he accuracy of the applicant's forecast of demand for the type of energy that would be supplied by the proposed facility."[320]

~~228.~~*236.* The Commission issued the IRP Order in Docket No. E-002/RP-19-368. The IRP Order at point 2 A 5 required Xcel to acquire by 2026: 720 MW of Applicant-owned solar resources to fully reutilize the interconnection capacity to be made available following the retirement of the Sherco Unit 2;[321] and an additional 600 MW of solar resources unconstrained by interconnection location or ownership.[322]

~~229.~~237. The IRP Order at point 2 A 8 stated that Xcel has demonstrated that, between 2027 and 2032, the Applicant will need approximately 600 MW more solar-resources and 2,150 MW more wind resources, or an equivalent amount of energy and capacity from a combination of wind, solar and/or storage.[323]

~~230.~~238. The IRP Order at point 3 stated that, "[i]n addition to the resources discussed in Ordering Paragraph 2, the Commission finds that it is more likely than not that there will be a need for approximately, but not more than, 800 MW of generic firm dispatchable resources between 2027 and 2029."[324]

~~231.~~239. Altogether, ordering points 2 and 3 of the IRP Order require Xcel to pursue over 5 GW of new generation resources between 2026 and 2032.[325]

~~232.~~240. Chapter 4 of the CN Application provides "updates to the quantity of new generation needed based upon the updated demand and energy forecasting provided under Minnesota Rules 7849.0270." Images 4.1 and 4.2 of the CN Application show an update to the Applicant's energy and demand forecasts that were used in the IRP.[326] Image 4.1 of the CN Application shows that the spring 2022 demand

[320] Minn. R. 7849.0120 (A)(1); *see also* Minn. Stat. § 216B.243, subd. 3(1) (requiring the Commission to evaluate "the accuracy of the long-range energy demand forecasts on which the necessity for the facility is based").

[321] Note that the IRP Order clarified that 460 MW of this could come from the proposed Sherco Solar units 1 and 2 projects if approved by the Commission. On November 7, 2022, in Docket No. E-002/M-20-891, the Commission issued an order approving the 460 MW Sherco Solar units 1 and 2 projects. The remaining capacity to re-use the interconnection rights of Sherco Coal unit 2 were acquired in Docket No. E-002/M-23-403 via the Sherco Solar unit 3 project.

[322] IRP Order at 31.

[323] IRP Order at 31.

[324] IRP Order at 31.

[325] DER Comments at 7 (Sept. 6, 2024) (eDocket No. 20249-210008-01).

[326] CN Application at 45–48.

forecast is like the forecast actually used in the IRP until about 2032, after which the Spring 2022 demand forecast is significantly lower.[327]

~~233.~~241. Image 4.2 of the CN Application shows that the Spring 2022 energy forecast is also similar to the forecast actually used in the IRP until about 2032, after which the Spring 2022 energy forecast is significantly lower.[328] Finally, Table 4.2 shows Xcel Energy's accredited capacity situation for the years 2022 to 2032.[329] Table 4.2 shows that Xcel Energy has an accredited capacity deficit of about 3.6 GW in 2032 before any new actions are taken.[330]

~~234.~~242. In addition to the forecast, the CN Application notes that MISO's resource adequacy construct is undergoing significant changes.[331] MISO has already switched from an annual construct to a seasonal construct. MISO is also exploring new methods for accrediting resources.[332]

~~235.~~243. Given the relatively small change represented by the Spring 2022 demand and energy forecasts (until near the end of the planning period), the forecasted 3.6 GW accredited capacity deficit, and the fact that MISO is fundamentally re-structuring its resource adequacy construct, DER did not pursue updated EnCompass modeling to determine if there was a significant change in the size, type, and timing of the Applicant's resources needs. DER determined that Xcel Energy's needs likely exceed the capability of the proposed Project even assuming a lower forecast.[333]

~~236.~~244. During the 2019 IRP, DER analyzed data regarding MISO's generation interconnection queue (GIQ) process. In August 2024 DER updated portions of the IRP analysis by obtaining new data from MISO's website regarding each Definitive Planning Phases (DPP) group that was currently underway and for the most recently completed DPP groups.[334] As with the IRP analysis, DER focused on

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[327] CN Application at 47.
[328] CN Application at 48.
[329] CN Application at 53.
[330] CN Application at 53.
[331] CN Application at 44 and 54.
[332] DER Comments at 7 (Sept. 6, 2024) (eDocket No. 20249-210008-01); *see* MISO, Resource Accreditation White Paper Version 1.0 Draft (May 17, 2023), https://cdn.misoenergy.org/MISO%20Draft%20Resource%20Accreditation%20Design%20White%20Paper628865.pdf; *see also* MISO, Resource Accreditation White Paper Version 2.1 (March 28, 2024), https://cdn.misoenergy.org/MISO%20Draft%20Resource%20Accreditation%20Design%20White%20Paper628865.pdf.

[333] DER Comments at 8 (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[334] MISO studies new generation projects in separate groups across several study areas. The MISO West Study Area includes Montana, North Dakota, South Dakota, Minnesota, Iowa, and western Wisconsin. At this time one group is established each year for MISO west. MISO DPP information can be found here: MISO DPP Information.

the MISO West Study Area. The data obtained is sufficient to illustrate the timing issues still being encountered by projects in MISO's GIQ process.[335]

~~237.~~245. The data focused on the initially announced and actual start dates for each DPP group. This data on starting dates illustrates the delays encountered by MISO in getting a DPP group started—in other words, the delay in the start of studying the group's impact on the transmission grid. The data also included the estimated final date to execute a generation interconnection agreement (GIA) when each DPP group started and the actual final date (or most recent estimate) for executing a GIA. This data on final date to execute a GIA illustrates the delays encountered by MISO in getting a DPP group from the start to the end; in other words, the delay in processing the group.[336]

~~238.~~246. The minimum delay encountered, for DPP-2022-Cycle 1, is well over a year.[337]

~~239.~~247. The 2017 (August), 2018, 2019, 2020, and 2021 DPP groups have all taken at least 3 years to move from the first estimated starting date to signing a GIA. If two years are needed for final permitting and construction of a project, then it would be reasonable to assume a five-year process for a project. This DPP group delay indicates that re-use of existing interconnection capability in order to avoid the MISO GIQ continues to be an important strategy.[338]

~~240.~~248. DER also obtained data on the capacity studied in each DPP group and the interconnection costs determined by the MISO studies.[339]

~~241.~~249. Since the IRP analysis was completed, MISO has approved a large group of new, high voltage transmission lines, referred to as LRTP Tranche 1. For the most part the LRTP Tranche 1 transmission is expected to be placed in-service by 2030. In addition, MISO appears to be near to seeking final approvals related to additional high voltage transmission lines via the MISO- Southwest Power Pool (SPP) Joint Targeted Interconnection Queue Study (JTIQ) and LRTP Tranche 2.1. The JTIQ transmission lines are specifically designed to enable interconnection of new generation near the MISO-SPP border. Therefore, MISO is making significant progress towards expanding the transmission grid to enable new generation interconnection.[340]

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[335] DER Comments at 8 (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[336] DER Comments at 8 (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[337] DER Comments at 8 (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[338] DER Comments at 9 (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[339] DER Comments at 9 (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[340] DER Comments at 10 (Sept. 6, 2024) (eDocket No. 20249-210008-01).

~~242.~~250. Overall, the updated analysis does not provide a sufficient basis to change DER's conclusion in the IRP that Xcel Energy's Commission-approved plan may not be achievable within the MISO GIQ construct due to continued delays in MISO's GIQ study groups in the West Study Area and high interconnection costs for new generation projects.[341]

~~243.~~251. DER concluded that Xcel Energy satisfied the criteria listed in Minn. R. 7849.0120(A)(1).[342]

~~244.~~252. The Administrative Law Judge finds that the Applicant's forecast of demand for the type of energy that would be supplied by the proposed facility is reasonable and is sufficiently accurate to demonstrate the need for the Project as required by Minn. R. 7849.0120(A)(1); Minn. Stat. § 216B.243, subd. 3(1).

ii. Criteria (A)(2): Effects of Applicant's Existing or Expected Conservation Programs and State and Federal Conservation Programs

Minn. R. 7849.0120(A)(2): "[T]he effects of the applicant's existing or expected conservation programs and state and federal conservation programs."[343]

~~245.~~253. Regarding this criterion Xcel Energy has stated that "[t]he Project is needed to interconnect generation resources that will replace the capacity and energy of Sherco Units 1 and 3 and are required to both utilize existing interconnection rights and maximize the Sherco interconnection. Consequently, conservation and demand-side management cannot meet the need."[344]

~~246.~~254. DER notes that energy efficiency (EE) and demand response (DR) resources were taken into account in determining the quantity of new supply-side resources needed by Xcel Energy. Regarding EE, the IRP Order at point 2 A 1 required Xcel Energy to save at least 780 GWh via EE annually through 2034. In addition, the IRP Order at point 2 A 2 reiterated the requirement to acquire 400 MW of incremental DR by 2023 as ordered in the Applicant's last IRP.[345]

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[341] DER Comments at 10 (Sept. 6, 2024) (eDocket No. 20249-210008-01).

[342] DER Comments at 10 (Sept. 6, 2024) (eDocket No. 20249-210008-01).

[343] Minn. R. 7849.0120(A)(2); *see also* Minn. Stat. § 216B.243, subd. 3(2) (requiring the Commission to evaluate "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"). Minn. Stat. § 216B.243, subd. 3(8), requires the Commission to evaluate "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."

[344] CN Application at 75.

[345] DER Comments at 11 (Sept. 6, 2024) (eDocket No. 20249-210008-01).

247.255. Chapter 4 of Xcel Energy's Application to the Minnesota Public Utilities Commission for a Certificate of Need for the Minnesota Energy Connection Project (CN Application) discusses the Applicant's updated forecast of energy and demand requirements. In summary, the IRP demand forecast assumed a particular level of EE, but the Commission ultimately ordered additional EE. Xcel Energy updated the old IRP forecast for the higher level of EE. This updated version of the old forecast was then compared by Xcel Energy to the spring 2022 forecast. Xcel Energy concluded that "after accounting for increased levels of DSM that were approved in the IRP, the updated 2022 load forecast result in a larger incremental resource need than the Applicant had anticipated in the IRP."[346]

248.256. Image 4.2 of the CN Application shows the Applicant's IRP energy forecast, IRP energy forecast updated for Commission-ordered EE, and the Spring 2022 energy forecast. As with the demand forecast discussed above, the IRP energy forecast assumed a particular level of EE, but the Commission ultimately ordered additional EE. Xcel updated the old IRP forecast for the higher level of EE. This updated version of the old forecast was again compared by Xcel to the spring 2022 forecast. As with the demand forecast, the Spring 2022 energy forecast is higher than the IRP energy forecast after Xcel Energy's adjustment for changes to conservation.[347]

249.257. Based upon the data in the CN Application, DER concluded that the effects of Xcel Energy's existing and expected EE and DR programs were considered when determining its needs, and, considering the scale of the need, reasonable changes in EE and DR will not significantly change the overall need to re-use the Sherco interconnection.[348]

250.258. DER concluded that Xcel Energy satisfied the criteria listed in Minnesota Rules 7849.0120(A)(2).[349]

251.259. The Administrative Law Judge concurs with the Applicant and DER that demand response, demand management, and conservation programs are not effective means of meeting the need to utilize existing interconnection rights and maximize the Sherco interconnection.

[346] DER Comments at 11 (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[347] DER Comments at 11 (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[348] DER Comments at 11 (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[349] DER Comments at 32 (Sept. 6, 2024) (eDocket No. 20249-210008-01).

iii. Criteria (A)(3): Effects of Promotional Activities

Minn. R. 7849.0120(A)(3): "[T]he 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."[350]

~~252.~~260. The CN Application states that "Xcel Energy has not conducted any promotional activities or events that have triggered the need for the Project."[351] Additionally, Xcel Energy indicates that the proposed Project is not needed due to growth in demand. Rather, the proposed Project is needed to meet existing energy needs, irrespective of the future growth rate, and also needed to enable Xcel to retain and reuse the interconnection rights connected to Sherco Units 1 and 3.[352]

~~253.~~261. In its review, the DER noted Xcel Energy's statement that "[t]he Spring 2022 peak corporate demand forecast for this update shows an average annual growth rate of 0.02% from 2022 through 2034."[353] Regarding the energy forecast, Xcel states that "the Spring 2022 forecast is calling for approximately - 0.2% growth over the full 2022-2034 planning period." Thus, the demand forecast shows essentially no growth, and the energy forecast shows a reduction in requirements.[354]

~~254.~~262. Based upon this information, the DER concluded that promotional practices of Xcel Energy did not give rise to the needs claimed in this proceeding.[355]

~~255.~~263. DER concluded that Xcel Energy satisfied the criteria listed in Minnesota Rules 7849.0120(A)(3).[356]

~~256.~~264. The Administrative Law Judge concludes that there is no evidence in the record that the Applicant's promotional practices created the need for the Project.

iv. Criteria (A)(4): Ability of Current and Future Facilities Not Requiring Certificates of Need to Meet Demand

Minn. R. 7849.0120(A)(4): "[T]he ability of current facilities and planned facilities not requiring certificates of need to meet the future demand."[357]

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[350] Minn. R. 7849.0120(A)(3); *see also* Minn. Stat. § 216B.243, subd. 3(4) (requiring the Commission to evaluate "promotional activities that may have given rise to the demand for this facility").

[351] CN Application at 21.

[352] CN Application at 21.

[353] CN Application at 45.

[354] DER Comments at 12 (Sept. 6, 2024) (eDocket No. 20249-210008-01).

[355] DER Comments at 12 (Sept. 6, 2024) (eDocket No. 20249-210008-01).

[356] DER Comments at 33 (Sept. 6, 2024) (eDocket No. 20249-210008-01).

[357] Minn. R. 7849.0120 (A)(4).

~~257.~~265. Regarding this requirement, DER commented that it is not possible that current facilities and planned facilities not requiring a CN could meet the identified need. This is because all of Xcel Energy's current generation facilities were considered in the EnCompass modeling that formed the basis for the Commission's determination that more than 5 GW of new generation was needed by Xcel Energy. In addition, all of Xcel Energy's planned generation facilities (whether or not they required a CN) were considered in the EnCompass modeling.[358]

~~258.~~266. Based upon this analysis DER concludes that current facilities and planned facilities not requiring a CN will be unable to meet the claimed need.[359]

~~259.~~267. DER concluded that Xcel Energy satisfied the criteria listed in Minnesota Rules 7849.0120(A)(4).[360]

~~260.~~268. The record demonstrates that no current or planned generation or transmission alternative that do not require a CN is capable of addressing the identified needs.

v. Criteria (A)(5): Effect of Proposed Facility on Efficient Use of Resources

Minn. R. 7849.0120(A)(5): "[T]he effect of the proposed facility, or a suitable modification thereof, in making efficient use of resources."[361]

~~261.~~269. The CN Application states that the proposed Project is needed to enable the Applicant to reuse existing interconnection rights at the Sherco site after the coal-generating units retire.[362]

~~262.~~270. DER has commented that, in essence, the proposed Project will enable the Applicant to use the interconnection rights at Sherco while simultaneously using the wind and solar resources in Lyon County and potentially at a variety of sites along the line. The proposed Project will simultaneously enable Xcel to make efficient use of existing interconnection rights and the states' wind and solar resources.[363]

[358] DER Comments at 12 (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[359] DER Comments at 12 (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[360] DER Comments at 33 (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[361] Minn. R. 7849.0120(A)(5).
[362] CN Application at 14.
[363] Comments at 12 (DER) (Sept. 6, 2024) (eDocket No. 20249-210008-01).

~~263.~~271. DER concludes that the proposed facility will make efficient use of existing interconnection and renewable generation resources.[364]

~~264.~~272. DER concluded that Xcel Energy satisfied the criteria listed in Minnesota Rules 7849.0120(A)(5).[365]

~~265.~~273. The Administrative Law Judge concurs in DER's conclusions. The Administrative Law Judge concludes that the Project will make efficient use of existing interconnection rights and the states' wind and solar resources.

C. Absence of Superior Alternatives

~~266.~~274. Minnesota Statutes § 216B.243, subd. 3(6), directs the Commission to evaluate "possible alternatives for satisfying the energy demand or transmission needs including but not limited to the potential for increased efficiency and upgrading of existing energy generation and transmission facilities, load-management programs, and distributed generation." Minnesota Rule 7849.0120(B) requires the Commission to consider whether "a more reasonable and prudent alternative to the proposed facility has not been demonstrated by a preponderance of the evidence on the record" and directs the Commission to consider four concerns in making its evaluation.

i. Criteria (B)(1): Appropriateness of the Size and Type of Facility

~~267.~~275. Minnesota Statutes provide additional direction to the Commission with respect to the range of "reasonable alternatives" that should be considered. Minnesota Statutes § 216B.2426 requires that:

> the Commission shall ensure that opportunities for the installation of distributed generation, as that term is defined in section 216B.169, subdivision 1, paragraph (c), are considered in any proceeding under section . . . 216B.243 [Certificate of Need for Large Energy Facilities].

~~268.~~276. Minnesota Statutes § 216B.2422, subd. 4, requires that:

> the Commission shall not approve a new or refurbished nonrenewable energy facility in an integrated resource plan or a certificate of need, pursuant to section 216B.243, nor shall the Commission allow rate recovery pursuant to section

[364] Comments at 12 (DER) (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[365] Comments at 33 (DER) (Sept. 6, 2024) (eDocket No. 20249-210008-01).

216B.16 for such a nonrenewable energy facility, unless that utility has demonstrated that a renewable energy facility is not in the public interest.

~~269.~~277. DER defines "size" as referring to "the quantity of power transfers that the transmission infrastructure improvement enables."[366]

~~270.~~278. The identified need is to interconnect new generation to the Sherco POI.[367] To deliver 1,996 MW of energy to the Sherco POI, Xcel Energy has stated that the transmission facilities must be capable of transferring the entirety of the needed energy on one or two lines utilizing a minimum of 3,000-amp substation equipment. The necessary capacity at 3,000 amps can only be provided by voltages of 230 kV and higher. Therefore, Xcel Energy determined that lower voltage 69 kV and 115 kV facilities would not meet the need.[368]

~~271.~~279. Xcel Energy also evaluated and screened a 230 kV option because it would have to operate at thermal operating limits to meet the required capacity at 3,000 amps with two lines. Losses on a 230 kV option would be more than double a comparable 345 kV option and would result in an unstable system with the required generation at a distance like Sherco to Lyon County due to the line impedance. The impedance of a 230 kV line is greater than a 345 kV line — a 230 kV single circuit line has 225 percent higher impedance than a single circuit 345 kV line when using the same conductor. Additionally, 230 kV lines would require four 230 kV/345 kV transformers to convert the voltage to 345 kV for the interconnection to the Sherco POI.[369]

~~272.~~280. For higher voltages, Xcel Energy analyzed a single circuit 500 kV line option, Option 10. The analysis showed that while a single circuit 500 kV line could transfer a large amount of power, it did not perform as well as the 345 kV/345 kV Option 9 option. The single circuit 500 kV would transfer up to approximately 1,900 MW before the system would become unstable. The 500 kV option would also be more costly. For comparison, a single circuit 500 kV line would generally cost approximately $4.1 million per mile and require four 500 kV/345 kV transformers at Sherco (costing an additional $75 million). A double circuit 500 kV line would be able to carry equal to or more energy than Option 9, but would cost approximately

[366] DER Comments at 14 (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[367] CN Application at 71.
[368] CN Application at 72.
[369] CN Application at 72.

$4.5 million to $5 million per mile. In contrast, the indicative cost for a 345 kV/345 kV line is approximately $3.5 million per mile.[370]

~~273.~~281. Xcel Energy determined the 500 kV option not to be the preferred option for the following reasons:

- Using 3,000-amp substation equipment, the thermal rating of a double circuit 345 kV line (3,581 megavolt amperes (MVA)) is higher than a single circuit 500 kV line (2,595 MVA).

- Using the same conductor, the impedance of a double circuit 345 kV line, i.e., the losses, is only 5 percent higher than a single circuit 500 kV line.

~~274.~~282. Although there are two 500 kV facilities present in Minnesota, neither is located in southwest Minnesota.[371]

~~275.~~283. Based on its review of the CN Application, DER concluded that the size of the proposed Project is not excessive and therefore is reasonable. DER also concluded that that generation alternatives do not meet the claimed need for the Project. Moreover, upgrading existing transmission lines or generation facilities cannot meet the identified need as they do not allow for new generation to be interconnected to the Sherco Substation POI.[372]

~~276.~~284. DER interprets "type" as referring to "the transformer nominal voltages, rated capacity, surge impedance loading (SIL), and nature (AC or DC) of power transported."[373]

~~277.~~285. According to DER, 345 kV is the standard high voltage used in Minnesota for long-distance transfer projects. Over the past two decades, several 345 kV projects have been approved by the Commission and constructed.[374]

~~278.~~286. DER agrees with Xcel Energy's decision to disregard from consideration higher voltages.[375]

~~279.~~287. DER agrees with Xcel Energy's conclusion that AC is preferable to HVDC in this case.[376]

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[370] CN Application at 72.
[371] CN Application at 72–73.
[372] DER Comments at 14 (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[373] DER Comments at 14–15 (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[374] DER Comments at 15 (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[375] CN Application at 73.
[376] DER Comments at 16 (Sept. 6, 2024) (eDocket No. 20249-210008-01).

~~280.~~288. Regarding the nature of transport, both AC and HVDC underground transmission are not feasible or reasonable alternatives.[377] According to the CN Application, while HVDC cable systems can be used for underground lines of 100 miles or more and have much lower line losses compared to high voltage AC when using comparable conductor, these systems "require converter stations on each end of the line to convert the voltage from DC to AC and AC to DC."[378] The CN Application estimates the cost for underground HVDC over 100 miles at $25 million or more per mile[379] – construction costs for underground high voltage AC systems are estimated to be similar[380] – making this alternative considerably more expensive than the preferred Option 9a at $3.8 million per mile.[381] Based upon this, DER agrees with Xcel Energy's conclusion that underground transmission should not be considered. In summary, DER concludes that Xcel Energy's proposed type is reasonable.[382]

~~281.~~289. The Administrative Law Judge agrees with DER's conclusions that the Applicant reasonably considered, and rejected as either insufficient or not cost-effective or both, lower voltage, higher voltage, and AC and HVDC underground transmission.[383] The Applicant and MISO examined every feasible alternative to the Project as well as a no-build alternative and found no superior solution to present and future congestion in southern and southwestern Minnesota. Overall, a more reasonable and prudent alternative to the Project has not been demonstrated by a preponderance of the evidence on the record.

ii. Criteria (B)(2): Cost of Proposed Facility and the Cost of Energy to be Supplied

Minn. R. 7849.0120(B)(2): "[T]he 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."

~~282.~~290. DER concluded that the size, type, and timing analysis show that the most realistic alternative is a double-circuit 345 kV line. Table 2.2 of the CN Application

[377] DER Comments at 17 (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[378] CN Application at 74.
[379] CN Application at 75.
[380] CN Application at 75.
[381] CN Application at 75.
[382] DER Comments at 18 (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[383] DER Comments at 14–19 (Sept. 6, 2024) (eDocket No. 20249-210008-01).

shows the total cost of the Project at $1.139 billion and a transmission line cost of approximately $3.8 million per mile in 2023 dollars.[384]

~~283.~~291. For comparison, the CN Application presents the cost of a single-circuit 500 kV alternative at approximately $4.1 million per mile (2023$), and that of a double-circuit 500 kV alternative at approximately $4.5 million to $5 million per mile (2023$). In the case of a single-circuit 500 kV line, four 500 kV/345 kV transformers are required, costing an additional $75 million. Assuming a single-circuit 500 kV line is built—instead of a double-circuit 345 kV line—translates into an estimated $129,000,000 (2023$) difference in capital costs.[385]

~~284.~~292. In total, the CN Application presents ten options and two sub options—options 9a and 9b. Options 1 to 9, 9a, and 9b are 345 kV while option 10 is 500 kV. The options deliver from 663 MW to 2,396 MW (after accounting for losses). The identified need is to deliver at least 1,996 MW of energy to the Sherco Substation POI, options 1 to 5, single-circuit 345 kV, deliver from 663 MW to 1,500 MW, so they do not meet the identified need. Similarly, options 6 and 7, double-circuit 345 kV, and option 10, single-circuit 500 kV, also do not meet the identified need as they deliver from 1,142 MW to 1,763 MW. Only options 8, 9, 9a, and 9b meet the identified need of delivering at least 1,996 MW.[386]

~~285.~~293. According to the CN Application, for the purpose of comparing costs (2023$), Options 8 and 9 were estimated at $840 million, Option 9a was estimated at $930 million, and Option 9b was estimated at $970 million (all costs exclusive of allowance for funds used during construction (AFUDC) and contingencies). Although Options 8 and 9 have lower costs, Xcel Energy prefers Options 9a and 9b to Options 8 and 9.[387]

~~286.~~294. Xcel Energy has stated that to interconnect at least 1,996, two 345 kV transmission lines are required using Options 8, 9, 9a or 9b with two synchronous condensers and a voltage support substation located in the mid-point of the line. Xcel Energy prefers Option 9a and 9b over Option 8 and Option 9 because they include STATCOMs to address potential turbine interaction issues that may occur due to the amount of anticipated wind generation, the high levels of series compensation and radial nature of the Project. Based on current wind turbine technology, STATCOMs are a recognized means of providing the necessary support to mitigate potential wind turbine resonant frequency interactions associated with

[384] CN Application at 75; Comments at 18 (DER) (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[385] DER Comments at 18 (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[386] DER Comments at 18 (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[387] DER Comments at 18 (Sept. 6, 2024) (eDocket No. 20249-210008-01).

long radial lines. The selection of Option 9a is a conservative approach to ensure that the Project includes components to address this potential issue.[388]

~~287.~~295. It is the Applicant's position that between Option 9a and Option 9b, Option 9a provides more interconnection capacity (2,182 MW v. 2,027 MW) for lower cost.[389] DER agreed with the Applicant's selection of Option 9a as the preferred option.

~~288.~~296. With respect to Project costs, Xcel Energy requested that the Commission include a condition that requires Xcel Energy to do the following:

> 1. provide a final number or cap amount within 9011 days of the Commission's Order determining the route;
>
> 2. wait until the first rate case after the proposed Project is placed in-service to recover any cost overruns from Minnesota ratepayers;
>
> 3. justify fully the reasonableness of recovering any cost overruns of the proposed Project from Minnesota ratepayers. Xcel Energy must justify any costs (including operations-and-management expense, ongoing capital expense—including revenue requirements related to capital included in rate base—insurance expense, land-lease expense, and property/production tax expense) that are higher than forecasted in this proceeding. Xcel Energy bears the burden of proof in any future regulatory proceeding related to the recovery of costs above those forecasted in this proceeding.[390]

~~289.~~297. DER agreed with Xcel Energy's proposed cost condition, including the requested 90 days.[391]

~~290.~~298. The Administrative Law Judge agrees that the cost of the Project compares favorably to other alternatives considered and that the cost condition identified above proposed by Xcel Energy and supported by DER is reasonable and supported by the record.

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[388] CN Application at 76.
[389] CN Application at 76.
[390] Applicant's Comments at 9–10 (Sept. 6, 2024) (eDocket No. 20249-210022-02).
[391] DER Reply Comments on CN Application at 5 (Oct. 8, 2024) (eDocket No. 202410-210797-01).

iii. Criteria (B)(3): Effects of Facility on Natural and Socioeconomic Environment

Minn. R. 7849.0120(B)(3): "[T]he effects of the proposed facility upon the natural and socioeconomic environments compared to the effects of reasonable alternatives."

~~291.~~299. Xcel Energy stated in its CN Application that the approved IRP including the Project achieves substantially more carbon reduction than cases in which the Project is not included.[392]

~~292.~~300. DER in Department Information Request No. 8 requested that Xcel Energy provide a calculation of the CO2 emissions for the proposed Project and for the no-build alternative, considering in both cases the approved Resource Plan.[393] In response, Xcel Energy provided a table showing the CO2 emissions from the Alternate Plan compared against Scenario 9 (Supplement Preferred Plan) and Scenario 1 (Reference Case).

~~293.~~301. Based on the estimates provided, DER reasoned that the "Alternate Plan"—the approved Resource Plan, including the Project—results in an estimated reduction on the amount of CO2 emissions of 11,678,213 tons compared to the "Scenario 9 (Supplement Preferred Plan)." Notably, the estimated reduction resulting from building the Project is greater than the emissions reduction resulting from following "Scenario 9 (Supplement Preferred Plan)" instead of "Scenario 1 (Reply)," the alternative to the Resource Plan, which is 8,734,935 CO2 tons.[394] From this analysis, DER concluded that Xcel Energy's estimated CO2 reduction has a substantial impact.[395]

~~294.~~302. The environmental review prepared by EERA for the Project also analyzed the effects of the proposed facility upon the natural and socioeconomic environments compared to the effects of reasonable alternatives. That analysis is discussed further in later sections of these Findings.

~~295.~~303. Based upon the environmental analysis in this record, a more reasonable and prudent alternative to the Project has not been demonstrated by a preponderance of the evidence on the record.

iv. Criteria (B)(4): Reliability of the Project

[392] CN Application at 20.
[393] DER Comments at 19 (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[394] DER Comments at 20 (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[395] DER Comments at 20 (Sept. 6, 2024) (eDocket No. 20249-210008-01).

Minn. R. 7849.0120(B)(4): "[T]he expected reliability of the proposed facility compared to the expected reliability of reasonable alternatives."

~~296.~~304. The identified need for the proposed Project to be able to connect at least 1,996 MW to the Sherco POI. Only options 8, 9, 9a, and 9b meet the identified need. As discussed above, Xcel Energy prefers Options 9a and 9b to Options 8 and 9, since those options include STATSCOMs.[396]

~~297.~~305. Xcel Energy considered several other alternatives such as generation, demand-side management, non-CN alternatives, DC lines, and a no-build alternative. Since the need for the proposed Project is to connect new generation to the existing Sherco Substation to re-use the interconnection rights that will become available as the coal units at Sherco retire, none of these alternatives is a suitable replacement for the preferred Option 9a—a double-circuit 345 kV line with voltage support technology.[397]

~~298.~~306. Based upon a review of the Applicant's CN Application, DER concluded that the alternatives to the proposed Project would result in equivalent or inferior reliability.[398]

~~299.~~307. The Project will relieve congestion in the grid and enhance system reliability. No alternative to the Project presents the same benefits.

~~300.~~308. The record demonstrates that the Project's reliability compares favorably to the reliability of alternatives within the record.

D. Protection of Natural and Socioeconomic Environments and Human Health

~~301.~~309. In considering whether a CN must be granted to the Applicant, the effects of the proposed facility on natural and socioeconomic environments compared to the effects of reasonable alternatives must be considered.[399]

i. Criteria (C)(1): Relationship of Facility to Overall State Energy Needs

Minn. R. 7849.0120(C)(1): "[T]he relationship of the proposed facility, or a suitable modification thereof, to overall state energy needs."

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[396] DER Comments at 20 (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[397] DER Comments at 20 (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[398] DER Comments at 20 (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[399] *See* Minn. R. 7849.0120(A).

~~302.~~310. DER agrees with the Applicant that the proposed Project is relevant due to the timing issues still being encountered by projects in MISO's GIQ process. Moreover, the proposed Project plans to interconnect renewable generation replacing coal-generation, a replacement that will contribute to Minnesota's goals established by Minn. Stat. § 216B.1691 subd. 2g. Beyond that, Xcel Energy has an accredited capacity deficit for all the years starting 2025 until 2032, reaching its peak of about 3.6 GW in 2032, before any new actions are taken, according to Table 4.2 of the Application.[400] Although Xcel Energy's needs likely exceed the capability of the proposed Project, as mentioned above, DER concluded that it would be more difficult for Xcel Energy to provide reliable and cost-effective service without the proposed Project.[401]

ii. Criteria (C)(2): Effects on Natural and Socioeconomic Environment

Minn. R. 7849.0120(C)(2): "[T]he 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."

~~303.~~311. DER recommended that the Commission consider the environmental review filed by EERA in the Commission's decision in this matter.[402]

~~304.~~312. In addition to the system alternatives considered for a proposed new HVTL required per Minnesota Rules 7849.1500, the following system alternatives were identified during scoping and included by EERA in its scoping decision:

- Construct an underground transmission line;
- Construct a new nuclear plant or natural gas plant at the retired Sherco coal-fired generator and interconnect into the existing Sherco Substation;
- Construct a new nuclear plant or natural gas plant closer to the Minneapolis—St. Paul metropolitan area and interconnect into the existing Sherco Substation; and
- Construct wind and solar generation closer to the Minneapolis—St. Paul metropolitan area and interconnect into the existing Sherco Substation.[403]

[400] CN Application at 53.
[401] DER Comments at 21–22 (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[402] DER Comments at 23 (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[403] Ex. EERA-12 at 5 (DEIS); Ex. EERA-9 (EIS Scoping Decision).

~~305.~~313. The DEIS excluded the following system alternatives because they would not meet the underlying need for or purpose of the project: demand side management, purchased power, and a different energy source and (this rule requirement relates to a generation facility). The DEIS also excluded the following system alternatives because they would not be feasible or available: HVTL of a different type (underground), upgrading the retiring Sherco coal-fired generator, replacing coal-fired generation at Sherco with additional solar and/or wind powered generation at Sherco, replacing the coal-fired generating plant at Sherco with nuclear generation.[404]

~~306.~~314. Potential human and environmental impacts of the following system alternatives are discussed in the DEIS:

- the no-build alternative;
- HVTL of a different size (a double circuit 500 kV transmission line);
- replacing coal-fired generation at Sherco with a new natural gas generation facility closer to Sherco and the Minneapolis—St. Paul metropolitan area, that interconnects to the Sherco Substation; and
- replacing coal-fired generation at Sherco with additional solar and wind powered generation closer to Sherco and the Minneapolis—St. Paul metropolitan area, that interconnects to the Sherco Substation.[405]

~~307.~~315. As stated earlier, DER reasoned, based on the estimates provided, that the "Alternate Plan"—the approved Resource Plan, including the Project—results in an estimated reduction on the amount of CO2 emissions of 11,678,213 tons compared to the "Scenario 9 (Supplement Preferred Plan)." Notably, the estimated reduction resulting from building the Project is greater than the emissions reduction resulting from following "Scenario 9 (Supplement Preferred Plan)" instead of "Scenario 1 (Reply)," the alternative to the Resource Plan, which is 8,734,935 CO2 tons.[406] From this analysis, DER concluded that Xcel Energy's estimated CO2 reduction has a substantial impact.[407]

~~308.~~316. Minnesota's state energy policies consider carbon free electricity generation as a highly desirable alternative to non-renewable electric generation. The increased supply of wind and solar energy the Project will enable will allow Xcel

[404] ~~Ex. EERA-12~~FEIS at 5–6 ~~(DEIS)~~.
[405] ~~Ex. EERA-12~~FEIS at 6 ~~(DEIS)~~.
[406] DER Comments at 20 (Sept. 6, 2024) (eDocket No. 20249-210008-01).
[407] DER Comments at 20 (Sept. 6, 2024) (eDocket No. 20249-210008-01).

Energy to retire coal generation facilities. These retirements will help reduce harmful emissions of CO2 more than 85% from 2005 levels and deliver at least 80% of customers' electricity from carbon-free energy sources by 2030.[408]

~~309.~~317. Comments submitted by stakeholders further explained the potential socioeconomic benefits of the Project.[409] Comments were also submitted stating the project is not needed.[410]

~~310.~~318. The record demonstrates that the natural and socioeconomic impacts of the Project compare favorably to the effects of not building the Project and to other system alternatives studied in the EIS~~., particularly because none of those systems alternatives meets the need for interconnecting the needed MW of renewable generation at Sherco.~~

iii. Criteria (C)(3): Effects on Inducing Future Development

Minn. R. 7849.0120(C)(3): "[T]he effects of the proposed facility, or a suitable modification thereof, in inducing future development."[411]

~~311.~~319. The record supports the conclusion that the Project will support the anticipated increase in wind and solar generation in southern and southwestern Minnesota.[412] This, taken together with the Project's anticipated benefits discussed previously, supports the issuance of a Certificate of Need.

iv. Criteria (C)(4): Socially Beneficial Uses of Output

Minn. R. 7849.0120(C)(4): "[T]he socially beneficial uses of the output of the proposed facility or a suitable modification thereof, including its uses to protect or enhance environmental quality."[413]

~~312.~~320. Minnesota's state energy policies consider carbon free electricity generation is a highly desirable alternative to non-renewable electric generation. The increased supply of wind and solar energy the Project will support the retirement of coal generation facilities. These retirements will help reduce harmful emissions of

[408] CN Application at 37–40.

[409] *See,* e.g., Public Comments (LIUNA) (Sept. 6, 2024) (eDocket No. 20249-210030-01); Public Comments (IUOE Local 49 and NCSRCC) (Oct. 10, 2024) (eDocket No. 202410-210800-01).

[410] *See*, e.g., Public Comments at 6 of 92 (eDockets No. 202411-212462-01).

[411] Minn. Stat. § 216B.243, subd. 3(3) requires the Commission to evaluate "the relationship of the proposed line to regional energy needs, as presented in the transmission plan submitted under section 216B.2425." Subdivision 7 of this section places requirements on entities to report transmission projects to the Commission.

[412] CN Application at 5.

[413] Similarly, Minn. Stat. § 216B.243, subd. 3(5) requires the Commission to evaluate the benefits of the Project "including its uses to protect or enhance environmental quality and to increase reliability of energy supply in Minnesota and the region."

CO2 more than 85% from 2005 levels and deliver at least 80% of customers' electricity from carbon-free energy sources by 2030.[414]

~~313.~~321. This criterion, too, supports the issuance of a Certificate of Need for the Project.

E. Compliance with Laws

Minn. R. 7849.0120(D): "[T]he 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."

~~314.~~322. The CN Application and EIS identified the permits and approvals that will be required for the Project.[415] There is no evidence in the record that Xcel Energy will be unable to obtain and comply with these permits and approvals.

F. Analysis Under Minn. Stat. § 216B.243, subd. (3)(10) through 3(12) and subd. 3a

~~315.~~323. Minnesota Statutes § 216B.243, subd. 3 (10) requires the Commission to evaluate:

> whether the applicant or applicants are in compliance with applicable provisions of sections 216B.1691 [renewable energy objectives] and 216B.2425, subdivision 7 [transmission needed to support renewable resources], 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.

~~316.~~324. The Applicant is in compliance with the applicable provisions of Minn. Stat. §§ 216B.1691 and 216B.2425, subd. 7. The Commission has found the Applicant's certificate of need petition, as supplemented by Xcel Energy's reply comments, to be complete.[416] The Project will support the development of renewable energy resources as discussed in Minn. Stat. § 216B.1691.

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[414] CN Application at 37–40.
[415] *See* CN Application at 142, Table 8.13; Ex. EERA-12 at 29–31, Tables 2-1, 2-2, and 2-3 (DEIS).
[416] Order (May 2, 2023) (eDocket No. 20235-195506-01).

~~317.~~325. Subdivision 3(11) of Minn. Stat. § 216B.243 requires the Commission to determine whether the Applicant has made the demonstrations required under subd. 3a of this section. Under certain conditions, Minnesota Statutes § 216B.243, subd. 3a bars the Commission from issuing a certificate of need to either a large nonrenewable generation project or to a transmission line for transporting power generated by nonrenewable resources. Because the Project is proposed primarily to serve power from future renewable generators, subdivision 3a does not apply.

~~318.~~326. Because the principal objective and effect of the Project is to relieve congestion preventing consumers from accessing inexpensive wind and solar energy, the requirement of subdivision 3(11) is met.

~~319.~~327. Subdivision 3(12) of Minn. Stat. § 216B.243 applies only when an applicant is proposing a nonrenewable generating plant and is not applicable because the Project is not a nonrenewable generating plant.

IX. FACTORS FOR A ROUTE PERMIT

~~320.~~328. The Power Plant Siting Act (PPSA), Minn. Stat. Ch. 216E, requires that route permit determinations "be guided by the state's goal 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."[417]

~~321.~~329. Under the PPSA, the Commission 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;

[417] Minn. Stat. § 216E.03, subd. 7.

(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;

(4) evaluation of the potential for beneficial uses of waste energy from proposed large electric power generating plants;[418]

(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

[418] Factor 4 is not applicable because Applicant is not proposing to site a large electric generating plant in this docket.

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;

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

(13) evaluation of the benefits of the proposed facility with respect to (i) the protection and enhancement of environmental quality, and (ii) the reliability of state and regional energy supplies;

(14) evaluation of the proposed facility's impact on socioeconomic factors; and

(15) evaluation of the proposed facility's employment and economic impacts in the vicinity of the facility site and throughout Minnesota, including the quantity and quality of construction and permanent jobs and their compensation levels. The commission must consider a facility's local employment and economic impacts, and may reject or place conditions on a site or route permit based on the local employment and economic impacts.

~~322.~~330. In addition, Minn. Stat. § 216E.03, subd. 7(e) 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 line route and the use of parallel existing highway right-of-way and, to the extent those are not used for the route, the [C]omission must state the reasons."

~~323.~~331. In addition to the PPSA, the Commission is 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;[419]

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

[419] This factor is not applicable because it applies only to power plant siting.

N. irreversible and irretrievable commitments of resources.

~~324.~~332. There is sufficient evidence in this record to assess the Project using the criteria and factors set forth above.

X. APPLICATION OF ROUTING FACTORS

A. Effects on Human Settlement

~~325.~~333. Minnesota law requires consideration of the Project's effects on human settlement, including displacement of residences and businesses, noise created by construction and operation of the Project, and impacts to aesthetics, cultural values, recreation, and public services.[420]

i. Displacement

~~326.~~334. No residences are anticipated to be permanently displaced by the Project.[421]

~~327.~~335. There are non-residential structures within the right-of-way.[422] Xcel Energy developed routes to minimize structures within the Project's 150-foot right-of-way. Where avoiding non-residential structures entirely was not feasible, the routes were developed such that there is sufficient clearance between the conductors and the building to comply with applicable standards. Based on Xcel Energy's early and ongoing outreach efforts, proximity to residential structures is of greater importance to stakeholders than non-residential structures.[423]

~~328.~~336. More generally with respect to proximity to residences, Xcel Energy has indicated that avoiding displacement and minimizing impacts on existing residences was a primary consideration in its routing process.[424]

~~329.~~337. The DEIS assessed residential proximity with respect to the routes under consideration at 0-75, 75-250, 250-500, and 500-1,600 feet.[425] The Route Permit Application assessed residential proximity at 0-75, 76-150, 151-300, and 301-500 feet.[426] Xcel Energy stated that, when developing the Project routes, it focused analysis on residences within 500 feet because a wider area of analysis was less useful

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[420] Minn. Stat. § 216E.03, subd. 7(b); Minn. R. 7850.4100, subp. A.
[421] ~~Ex. EERA 12 at 85 (DEIS)~~FEIS at 85.
[422] ~~Ex. EERA 12 at 85 (DEIS)~~FEIS at 85.
[423] Ex. Xcel-19 at 4:3–5:5 (Langan Surrebuttal).
[424] *See* Ex. Xcel-19 at 4:3–12 (Langan Surrebuttal).
[425] *E.g.*, ~~Ex. EERA 12 at 198 (DEIS)~~ FEIS at 207.
[426] Ex. Xcel-2 at 79 (RP Application).

in allowing the Applicant to meaningfully distinguish the residential impacts among routes. Xcel Energy witness Langan explained that avoiding residences within 0-75 feet of the alignment was of primary importance, followed by residences within 76-150 feet (and so on).[427]

~~330.~~338. Overall, the segments comprising Xcel Energy's Preferred Route (segments 202, 212, 216, 219, 226, and 244) best minimize potential residential impacts (146 residences within 500 feet),[428] as compared to the Purple Route (159 homes within 500 feet), Blue Route (145 homes within 500 feet), the proxy end-to-end MDNR route (172 residences within 500 feet), and the other full route options studied in the DEIS (191 and 192 homes within 500 feet).[429]

~~331.~~339. Some route segments increase impacts to residences, as compared to other route segments. For example, Route Connector 110 and Route Segments 238, 249, 245, 246, and 250 are each in closer proximity to more residences than other available alternatives.[430]

~~332.~~340. The requirements typically imposed by the Commission require permittees to avoid residences. Specifically, Section 5.3.7 of the Sample Route Permit states:

> The Permittee shall work with landowners to locate the high-voltage transmission line to minimize the loss of agricultural land, forest, and wetlands, and to avoid homes and farmsteads.[431]

~~333.~~341. Likewise, Section 5.5.1 of the Sample Route Permit states:

> The Permittee shall design the transmission line and associated facilities to meet or exceed all relevant local and state codes, the National Electric Safety Code, and NERC requirements. This includes standards relating to clearances to ground, clearance to crossing utilities, clearance to buildings, strength of materials, clearances over roadways, right-of-way widths, and permit requirements.[432]

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[427] Ex. Xcel-19 at 4:3–12 (Langan Surrebuttal).

[428] Ex. Xcel-16 at 15:21–24 (Langan Direct); Ex. Xcel-19 at 4:16–19 (Langan Surrebuttal).

[429] Ex. EERA-12 at 461 (Table 17-2) (DEIS); Ex. Xcel-19 at 4:16–19 (Langan Surrebuttal); and Xcel Energy Response to Hearing Comments at 19 (Dec. 13, 2024).

[430] *E.g.*, Xcel Energy Response to Hearing Comments (Dec. 13, 2024).

[431] ~~Ex. EERA-12 at 85 (DEIS)~~FEIS at 86.

[432] Ex. EERA-12 at 85 (DEIS).

ii. Noise

~~334.~~342. The Minnesota Pollution Control Agency (MPCA) has the authority to adopt noise standards pursuant to Minn. Stat. § 116.07, subd. 2. The adopted noise standards are set forth in Minnesota Rule 7030, which sets noise limits for different land uses. These land uses are grouped by Noise Area Classification (NAC) and are separated between the daytime and nighttime noise limits. Residences are classified as NAC-1.[433] The most restrictive MPCA noise limits are 60–65 A-weighted decibels (dBA) during the daytime and 50–55 dBA during the nighttime.[434]

~~335.~~343. The DEIS analyzed noise for the Project as a whole because there is little variation in the potential for noise impacts across the studied route alternatives.[435]

~~336.~~344. The Project is primarily in rural areas.[436] For most of the Project, ambient noise levels are in the range of 30 to 50 dBA, with temporary, higher noise levels associated with wind, vehicular traffic, and the use of gas-powered equipment (for example, tractors or chain saws). [437]

~~337.~~345. The Project has the potential to emit noise during construction and operation.

~~338.~~346. During Project construction, temporary, localized noise from heavy equipment and increased vehicle traffic is expected to occur along the right-of-way during daytime hours. Construction activity and crews would be present at a particular location during daytime hours for a few days at a time but on multiple occasions throughout the period between initial right-of-way clearing and final restoration.[438]

~~339.~~347. Construction noise might exceed state noise standards for short intervals at select times and locations. Any exceedances of the MPCA daytime noise limits would be temporary in nature and no exceedances of the MPCA nighttime noise limits are expected for the Project.[439]

[433] Ex. EERA-12 at 100 (DEIS).
[434] Minn. R. 7030.0040.
[435] Ex. EERA-12 at 201 (DEIS).
[436] Ex. EERA-12 at 101 (DEIS).
[437] Ex. EERA-12 at 101 (DEIS).
[438] Ex. EERA-12 at 101 (DEIS).
[439] Ex. EERA-12 at 101 (DEIS).

~~340.~~348. Noise levels from operational transmission lines depends on conductor conditions, voltage levels, and the weather conditions. ~~Still, n~~Noise levels are anticipated to be within Minnesota noise standards.[440]

~~341.~~349. As Xcel Energy stated in Section 6.2.3.1 of the RP Application, the substations will be designed such that noise levels would be compliant with Minnesota noise standards at the substation boundary.[441] Accordingly, substation noise levels are anticipated to be within Minnesota noise standards (i.e., < 50 dBA) at the nearest receptor(s).[442]

~~342.~~350. Section 5.3.6 of the Sample Route Permit includes a requirement related to noise:

> The Permittee shall comply with noise standards established under Minnesota Rules 7030.0010 to 7030.0080. The Permittee shall limit construction and maintenance activities to daytime working hours to the extent practicable.[443]

~~343.~~351. During operation, permittees are required to adhere to noise standards. ~~No a~~Additional mitigation was identified in the DEIS including use of sound control devices on vehicles and equipment, e.g., mufflers, conducting construction activities during daylight hours, and, to the greatest extent possible, during normal business hours, and running vehicles and equipment only when necessary.[444]

~~344.~~352. Overall, noise impacts from the construction of the Project are anticipated to be minimal and within the Minnesota noise standards.[445] Likewise, operation of the Project is anticipated to~~would~~ meet state noise standards.[446]

iii. Aesthetics

~~345.~~353. The Project vicinity is generally flat, with areas of rolling plains. There are watercourses (streams and rivers) in the Project area that create some diversity in landscape. Rural residences and farmsteads are scattered across the Project's viewshed and along rural county roads.[447]

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[440] Ex. EERA-12 at 102 (DEIS).
[441] Ex. EERA-12 at 102 (DEIS); Xcel-2 at 33 (RP Application).
[442] Ex. EERA-12 at 102 (DEIS).
[443] Ex. EERA-12 at 102 (DEIS).
[444] Ex. EERA-12 at 102 (DEIS).
[445] Ex. EERA-12 at 99 (DEIS).
[446] Ex. EERA-12 at 99 (DEIS).
[447] Ex. EERA-12 at 77 (DEIS).

~~346.~~354. There are several municipalities that are near (within five miles) the route alternatives; outside of this, the Project primarily consists of open space that is mostly used for agricultural purposes. Viewsheds in the agricultural areas are generally broad and uninterrupted except for existing infrastructure.[448]

~~347.~~355. Horizontal elements, such as highways and county roads, are consistent with the long and open viewsheds along most of the open spaces within the project area. Vertical elements such as HVTLs and wind turbines are visible from considerable distances and are the tallest and most dominant visual feature on the landscape where present. Wind turbines and solar panels are also at times visible from the anticipated alignments, including the Sherco Solar Project near the northern portion of the Project and the Palmer's Creek Wind Farm near Granite Falls along the Purple Route.[449]

~~348.~~356. The route alternatives cross two scenic byways, the Great River Road National Scenic Byway and the Minnesota River Valley Scenic Byway. [450]

~~349.~~357. Aesthetic impacts are assessed, in part, through a consideration of the existing viewshed, landscape, character, and setting of any given area, followed by an evaluation of how a proposed routing alternative would change these aesthetic attributes. Determining the relative scenic value or visual importance in any given area is subjective, and depends, in large part, on the values and expectations held by individuals and communities about the aesthetic resource in question.[451]

~~350.~~358. The Project's structures and conductors would create aesthetic impacts. The degree of these impacts depends on the below-listed factors.

- Proximity to homes, schools, churches, etc., where relatively more observers are present to experience aesthetic impacts.
- Proximity to natural features like watercourses, waterbodies, wetlands, trees, prairie, or other areas free from human disturbance.
- The types of structures and structure designs used for the project.
- Placing structures on the opposite side of a road from existing transmission structures introducing an additional visual element.

[448] Ex. EERA-12 at 77 (DEIS).
[449] Ex. EERA-12 at 77 (DEIS).
[450] Ex. EERA-12 at 77–78 (DEIS).
[451] Ex. EERA-12 at 197 (DEIS).

- Paralleling and/or sharing right-of-way with existing transmission lines would minimize impacts relative to existing human modifications to the landscape. In other words, putting like with like.

- Paralleling and/or sharing other types of existing ROW where the project would have an incremental impact relative to existing horizontal elements, such as highways and county roads.

- Residential properties where a new transmission line would result in them being boxed in.[452]

~~351.~~359. Paralleling and/or sharing other types of existing right-of-way where the project would have an incremental impact relative to existing horizontal elements, such as highways and county roads.[453]

360. The Project's aesthetic impacts can be minimized by selecting routes that are located away from homes, schools, businesses, and other places where people congregate. Aesthetic impacts can also be minimized by following existing transmission line right-of-way where elements of the built environment already define the viewshed and the addition of an additional transmission line would have an incremental impact. Following other infrastructure, such as roads and railroads, would also be expected to reduce potential impacts but not to the same extent.[454]

~~352.~~361. Residential properties would be boxed in with existing transmission lines 200 kV or higher voltage transmission lines along Route Segments B1, B2, B3, B4, C1, C2, G3, G4, G5, G6, and Route Segment 245.[455]

~~353.~~362. Section 5.3.7 of the Sample Route Permit contains the following requirement related to aesthetics:

> The Permittee shall consider input pertaining to visual impacts from landowners or land management agencies prior to final location of structures, rights-of-way, and other areas with the potential for visual disturbance.
>
> The Permittee shall use care to preserve the natural landscape, minimize tree removal and prevent any unnecessary destruction of the natural surroundings in the

[452] FEIS at 78.
[453] Ex. EERA-12 at 77 (DEIS).
[454] Ex. EERA-12 at 197 (DEIS).
[455] FEIS at 249, 298, 415, and 449.

vicinity of the Transmission Facility during construction and maintenance.

The Permittee shall work with landowners to locate the high-voltage transmission line to minimize the loss of agricultural land, forest, and wetlands, and to avoid homes and farmsteads.

The Permittee shall place structures at a distance, consistent with sound engineering principles and system reliability criteria, from intersecting roads, highways, or trail crossings.[456]

iv. Cultural Values

~~354.~~363. The DEIS assessed cultural values for the Project as a whole because impacts to cultural values are independent of the route selected.[457]

~~355.~~364. Cultural values are those community beliefs and attitudes which provide a framework for community unity and animate community actions. Cultural values can be informed by history and heritage, local resources, economy, local and community events, and common experiences. The Project traverses land that has been home to a variety of persons and cultures over time. The Project area was populated primarily by Dakota and Ojibwe tribes in the early to mid-1800s.[458]

~~356.~~365. Today, there are currently 11 federally recognized American Indian Tribes with reservations in Minnesota.[459] The nearby Minnesota River Valley is an area of cultural significance for the Upper Sioux Community Pezihutazizi Oyate and Lower Sioux Indian Community, as well as other Tribal Nations whose ancestors previously inhabited the Project area. There are 24 Tribes with historic cultural interest or ancestral ties in the project area.[460]

~~357.~~366. Transmission line and substation projects have the potential to impact community and regional events during construction, primarily due to the presence of equipment and supplies on local roadways and potential temporary road closures or detours. Impacts would be minor and temporary if they occur.[461]

[456] Ex. EERA-12 at 78 (DEIS).
[457] Ex. EERA-12 at 79 (DEIS).
[458] Ex. EERA-12 at 79 (DEIS).
[459] Ex. EERA-12 at 80 (DEIS).
[460] Ex. EERA-12 at 80–82 (DEIS).
[461] Ex. EERA-12 at 84 (DEIS).

367. Construction of the Project is not expected to conflict with the cultural values along the proposed route options. The project would not interfere with ongoing treaty rights to hunt and fish or the ability to harvest wild rice.[462] The Project Study Area is predominantly rural in nature with an agriculture-based economy and is anticipated to remain so after construction. None of these aspects of the culture of the area are anticipated to be significantly impacted or changed as a result of the construction and operation of the Project. Substations are not anticipated to impact cultural values because these facilities would be limited to a discrete area and would be sited to avoid impacting public participation in community and regional events.[463]

~~358.~~368. Impacts associated with rural character and sense of place are expected to depend on the individual. For some residents, constructing the project might change their perception of the area's character, thus potentially eroding their sense of place. This tension between infrastructure projects and rural character creates real tradeoffs. For those residents that place high value on rural character and a sense of place, impacts are anticipated to be moderate to significant. These impacts would be localized, short- and long-term, but might diminish over time depending on the individual.[464]

v. Recreation

~~359.~~369. There are many recreational opportunities in the Project Study Area. Recreational opportunities at public lands including DNR Wildlife Management Areas (WMAs), Aquatic Management Areas (AMAs), and State Water Trails, FWS Waterfowl Production Areas (WPAs), county parks, and golf courses. Each of these public lands offers many recreation opportunities that attract residents and tourists.[465]

~~360.~~370. The DEIS assesses impacts to recreation through identification of recreational resources within the ROI for the Project. The ROI for recreation is the route width.[466]

~~361.~~371. The DEIS found that few recreational resources are present within the ROI. Recreational resources that are present include publicly accessible lands (WMAs, WPAs, and state game refuges) and waters (including state water trails and

[462] FEIS at 84, 85.
[463] Ex. Xcel-2 at 87 (RP Application).
[464] FEIS at 85.
[465] Ex. Xcel-2 at 99 (RP Application).
[466] Ex. EERA-12 at 104 (DEIS).

national or state Wild and Scenic Rivers). The Project also crosses two scenic byways.[467]

~~362.~~372. Route segments in Region A do not cross any land-based public trails, state water trails, Wild and Scenic Rivers, or scenic byways.[468]

~~363.~~373. Route Segment A4 includes public lands and the Amiret Wildlife Management Area with an access point to the area directly parallel to the anticipated alignment. Other recreational resources in Region A include snowmobile trails and impacts are anticipated to be minimal.[469]

~~364.~~374. Route segments in Region B do not cross any land-based public trails. All Route segments in Region B cross the Redwood River, a state water trail. All route segments cross the Minnesota River, which is a state water trail and a wild and scenic river. The Minnesota River Valley Scenic Byway is crossed by all of the route segments. Other recreational resources in Region B include snowmobile trails and impacts are anticipated to be minimal.[470]

~~365.~~375. Route segments in Region C do not cross any land-based public trails, state water trails, wild and scenic rivers, or scenic byways. Recreational resources in Region C include snowmobile trails and impacts are anticipated to be minimal.[471]

~~366.~~376. Route segments in Region D do not cross any land-based public trails. No Wildlife Management Areas or Waterfowl Production Areas are present. All route segments cross the Crow River, a state water trail and wild and scenic river. Regional recreational resources in Region D include snowmobile trails and impacts are anticipated to be minimal.[472]

~~367.~~377. Route segments in Region E do not cross any land-based public trails, state water trails, wild and scenic rivers, or scenic byways. Regional recreational resources in Region E include snowmobile trails and impacts are anticipated to be minimal.[473]

[467] Ex. EERA-12 at 104 (DEIS).
[468] Ex. EERA-12 at 104 (DEIS).
[469] Ex. EERA-12 at 224 (DEIS).
[470] Ex. EERA-12 at 269 (DEIS).
[471] Ex. EERA-12 at 308 (DEIS).
[472] Ex. EERA-12 at 336 (DEIS).
[473] Ex. EERA-12 at 361 (DEIS).

~~368.~~378. Route segments in Region F do not cross any land-based public trails, state water trails, wild and scenic rivers, or scenic byways. Regional recreational resources in Region F include snowmobile trails and impacts are anticipated to be minimal.[474]

~~369.~~379. Route segments in Region G do not cross any land-based public trails. All route segments cross the Mississippi River, which is a designated state water trail and a wild and scenic river. Route Segments G1 (Blue Route) and G2 cross the Great River Road Scenic Byway once, while the other segments cross three times. Regional recreational resources in Region G include snowmobile trails and impacts are anticipated to be minimal.[475]

380. Effects on recreation due to construction of the Project are anticipated to be minimal and temporary in nature, lasting only for the duration of construction and are anticipated to include short-term disturbances, such as increased noise and dust, as well as visual impacts. They could also detract from nearby recreational activities and could, depending on the timing, affect nearby hunting or wildlife viewing opportunities in public spaces by temporarily displacing wildlife. Wildlife, however, is expected to return to the area once construction has been completed. [476]

~~370.~~381. Once constructed, the project would result in visual impacts caused by new built features introduced to the landscape which could change the aesthetic of a recreational destination in a way that reduces visitor use. Because direct long-term impacts are primarily aesthetic in nature, indirect long-term impacts to recreation are expected to be subjective and unique to the individual. These unavoidable impacts might affect unique resources.[477]

~~371.~~382. While visual impacts would occur, operation of the Project is not anticipated to impede recreational activities, such as snowmobiling, golfing, canoeing, hunting, or fishing.[478]

~~372.~~383. Impacts to recreation can be mitigated by prudent routing, i.e., selecting route alternatives that avoid resources used for recreational resources. The Project avoids public lands used for recreational resources.[479]

~~373.~~384. Impacts can also be mitigated by reducing impacts to natural landscapes. Specifically, the Wild and Scenic River crossing impacts can be minimized by paralleling existing infrastructure. Xcel Energy would continue to work with the

[474] Ex. EERA-12 at 390 (DEIS).
[475] Ex. EERA-12 at 424 (DEIS).
[476] Ex. EERA-12 at 105 (DEIS).
[477] FEIS at 107.
[478] Ex. EERA-12 at 106 (DEIS).
[479] Ex. EERA-12 at 106 (DEIS).

DNR to avoid and minimize impacts on recreational resources under DNR's jurisdiction and including the Wild and Scenic Rivers.[480]

vi. Socioeconomics

~~374.~~385. Construction of the transmission line will employ approximately 150 to 210 construction workers and construction of the substations will employ approximately 60 construction workers. The construction workforce will consist primarily of union labor personnel to complete construction activities; job opportunities would likely be posted locally for various trade professionals.[481]

~~375.~~386. Potential socioeconomic impacts would be short-term due to an influx of construction jobs and personnel, delivery of construction material, temporary housing, and other purchases from local businesses. Slight increases in retail sales in the project area are expected. These would include purchases of lodging, food, fuel, construction materials (lumber, concrete, aggregate), and other merchandise.[482]

~~376.~~387. Construction would take place over the course of around 24 to 27 months. Workers would likely be commuting to the area instead of relocating to the Project area. Construction workers traveling to the area might find temporary housing over the span of the Project, but this might move with construction along the Project area.[483]

~~377.~~388. Comments submitted by stakeholders further explained the potential socioeconomic benefits of the Project.[484]

~~378.~~389. Overall, the DEIS found that socioeconomic factors related to construction and operation of the Project are anticipated to be short-term and positive, but minimal, for all route alternatives. Positive impacts come from increased expenditures at local businesses during construction, the potential for some materials to be purchased locally, and the use of local labor. The construction and operation of the project is not anticipated to create or remove jobs over the long-term or result in the permanent relocation of individuals to the area. The DEIS did not conduct the impact assessment for socioeconomics at the regional level because there is limited variability in socioeconomics across the route alternatives.[485]

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[480] Ex. EERA-12 at 106 (DEIS).

[481] ~~Ex. Xcel-2 at 96 (RP Application)~~FEIS at 110.

[482] Ex. EERA-12 at 109 (DEIS).

[483] Ex. EERA-12 at 109 (DEIS).

[484] *See,* e.g., Public Comments (LIUNA) (Sept. 6, 2024) (eDocket No. 20249-210030-01); Public Comments (IUOE Local 49 and NCSRCC) (Oct. 10, 2024) (eDocket No. 202410-210800-01).

[485] Ex. EERA-12 at 106 (DEIS).

390. Adverse impacts to socioeconomics are not expected as a result of the Project; therefore, EERA staff did not believe mitigation to be~~is~~ necessary.[486]

~~379.~~391. Commenters suggested mitigation regarding insurance, permits, ongoing stakeholder communication, and fiscal responsibility. EERA staff did not believe mitigation to be necessary.[487]

vii. Environmental Justice

~~380.~~392. The DEIS assessed environmental justice under Minnesota and federal frameworks.

~~381.~~393. Under the Minnesota framework, although not directly applicable to certificate of need and route permit determinations, for other purposes, Minn. Stat. § 216B.1691, subd. 1(e), defines areas with environmental justice concerns in Minnesota as areas that meet one or more of the following criteria: (1) 40 percent or more of the area's total population is nonwhite; 35 percent or more of households in the area have an income that is at or below 200 percent of the federal poverty level; (3) 40 percent or more of residents over the age of five have limited English proficiency; or the area is located within Indian country, as defined in United State Code, title 18, section 1151.[488]

~~382.~~394. The DEIS assessed potential environmental justice impacts by first identifying if any census tracts meet a definition of an environmental justice area per its socioeconomical information. Second, census tracts meeting an environmental justice definition are reviewed to consider if those residents from be disproportionally affected due to additional exposure to pollutants. The ROI for environmental justice includes the census tracts that intersect the route width of each route alternatives.[489]

~~383.~~395. No environmental justice areas were identified in Region A, D, E, F, or G.[490]

~~384.~~396. Census tract 7501, crossed by Route Segment B4 (Blue Route), was identified as a potential area of concern for environmental justice.[491]

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[486] Ex. EERA-12 at 110 (DEIS).
[487] FEIS at 111.
[488] Ex. Xcel-2 at 97–98 (RP Application).
[489] Ex. EERA-12 at 86 (DEIS).
[490] Ex. EERA-12 at 201 (DEIS).
[491] Ex. EERA-12 at 242 (DEIS).

~~385.~~397. Census tract 9504, crossed by Route Segment C1 (Purple Route), C2, and C3, was identified as a potential area of concern for environmental justice.[492]

~~386.~~398. Under the federal framework, the Council of Environmental Quality's Climate and Economic Justice Screening Tool identified three census tracts as disadvantaged communities.[493] Census tract 9701 was identified as partially disadvantaged, due to a Federally Recognized Tribe, the Upper Sioux, covering one percent of this tract's land. Census tract 7501 was identified as partially disadvantaged, due to a Federally Recognized Tribe, the Lower Sioux, covering one percent of this tract's land. Census tract 3605 was identified as a disadvantaged community. The burden threshold is poverty (households where income is at or below 100 percent of the federal poverty level) and the socioeconomic threshold is high school education (percent of people ages 25 years or older whose high school education is less than a high school diploma).[494]

~~387.~~399. The DEIS found that the Project would not further increase burden indicators in the environmental justice areas of concern and would not result in disproportionate adverse impacts to the environmental justice areas of concern within the ROI.[495]

~~388.~~400. No environmental justice impacts are anticipated; therefore, the DEIS did not propose any mitigation.[496]

viii. Public Service and Infrastructure

401. The DEIS assessed potential Project impacts on public services and infrastructure, including roadways, railroads, public utilities, emergency services, and airports.[497]

402. Construction could cause moderate, localized impacts to roadways that would be short-term in nature. Any lane or roadway closures would only last for the duration of the construction activity in a given area. Increased construction traffic could impact roadways, with effects lasting from a few minutes to a few hours. Construction vehicles could temporarily block or alter public access to streets and businesses. Heavy load vehicles can cause more damage to road surfaces. If structures and lines fall over or otherwise reach the ground, they would create safety hazards on any roadways located within the designed fall distance of an overhead

[492] Ex. EERA-12 at 286 (DEIS).
[493] Ex. EERA-12 at 90 (DEIS).
[494] Ex. EERA-12 at 90 (DEIS).
[495] Ex. EERA-12 at 92 (DEIS).
[496] Ex. EERA-12 at 92 (DEIS).
[497] Ex. EERA-12 at 110 (DEIS).

transmission line parallel to existing roadways. The project could result in structures on both sides of roadways. Commenters noted concern over increased vehicular crash hazards where this occurs.[498]

403. Potential impacts to railways would be limited to short-term construction impacts and would be coordinated directly with the railroad operator. Negligible impacts during operation would be anticipated to railroads.[499]

404. The project crosses pipeline ROWs in multiple locations. Potential pipeline impacts are expected to be avoided and mitigated by coordinating with the appropriate pipeline companies.[500]

~~389.~~405. Potential impacts to railways would be limited to short-term construction impacts and would be coordinated directly with the railroad operator. Negligible impacts during operation would be anticipated to railroads.[501]

~~390.~~406. Overall, Project impacts on public services and infrastructure are expected to primarily be related to construction activities and would be short-term and minimal. Negative impacts, such as traffic delays, should be negligible. Impacts are unavoidable but can be minimized and mitigated.[502]

~~391.~~407. Sections 5.3.4 and 5.3.14 of the Sample Route Permit contain mitigation measures related to transportation and public services and utilities.

~~392.~~408. Xcel Energy committed to ongoing coordination with MnDOT, local road authorities, railroad companies, the FAA, and landowners with private airstrips in the RP Application.[503]

~~393.~~409. Likewise, the DEIS indicated that Xcel Energy would continue to work with MnDOT to confirm that the Project meets all applicable guidelines during permitting and final design and has committed to coordinating with county and township road departments to minimize impacts on local roads and highways.[504]

~~394.~~410. The Project would cross railroads operated by Minnesota Prairie, Twin Cities and Western, Burlington Northern Santa Fe, and SOO rail lines at several locations.[505] The Applicant committed to obtain all necessary railroad crossing

[498] FEIS at 115.
[499] FEIS at 115.
[500] FEIS at 116.
[501] FEIS at 115.
[502] Ex. EERA-12 at 110 (DEIS).
[503] Ex. EERA-12 at 115 (DEIS); Ex. Xcel-2 at 119 (RP Application).
[504] Ex. EERA-12 at 115 (DEIS).
[505] Ex. EERA-12 at 110 (DEIS); Ex. Xcel-2 at 116 and 118 (RP Application).

permits from Soo Line, Burlington Northern – Santa Fe, Twin Cities and Western, and Minnesota Prairie for their respective rail lines. The Applicant will also coordinate with the appropriate railroad personnel during construction to coordinate electrical conductor stringing over the rail line for the safety of construction personnel and rail line operations.[506]

~~395.~~411. Where the transmission line crosses streets, roads, highways, or other energized conductors or obstructions, temporary guard or clearance structures might be installed before conductor stringing.[507]

~~396.~~412. Construction of high voltage transmission lines in close proximity to pipelines or railroads may require AC induction mitigation. The cost of mitigation will be dependent upon the amount of AC induction and acceptable mitigation measures by the pipeline company or railroad.[508]

~~397.~~413. The Project is not anticipated to impact emergency services.[509] Thus, the DEIS did not propose mitigation for emergency services.[510]

~~398.~~414. The DEIS states that a final route including Route Segment 223 would avoid direct impacts to Lux Strip, a private airstrip.[511] This airstrip is used as frequently as daily and at least weekly; it has been commercially operated by the same family for three generations and over 45 years. The HVTL would impact regular use of the airstrip, impacting the aerial spraying business.[512] The FEIS recommends Route Segment 223 to avoid direct impacts to the airstrip.[513]Xcel Energy does not support Route Segment 223 in its entirety because of increased residential impacts on the southern portion of the alternative. However, Xcel Energy identified a modified Route Segment 223 that avoids direct impacts to the Lux Airstrip without increasing residential impacts to the south.[514]

415. No impacts to public airports are anticipated.[515]

ix. Property Values

[506] Ex. Xcel-2 at 120 (RP Application).
[507] Ex. EERA-12 at 54 (DEIS).
[508] Ex. EERA-12 at 115 (DEIS); Xcel Energy Response to Hearing Comments at Attachment A (Dec. 13, 2024).
[509] Ex. EERA-12 at 114 (DEIS).
[510] Ex. EERA-12 at 115 (DEIS).
[511] Ex. EERA-12 at 115 (DEIS).
[512] FEIS at 304.
[513] FEIS at 118.
[514] Ex. Xcel-19 at 5:22–6:2 (Langan Surrebuttal).
[515] Ex. Xcel-2 at 27 (RP Application).

416. Potential impacts of overhead transmission lines on property values generally are connected to three main factors. First, how the transmission line affects the viewshed and aesthetics of a property. Second, the real or perceived risks that buyers have of electric magnetic fields (EMF). Third, the effects to agricultural production on properties that are used for farming operations.[516]

417. Research does not support a clear cause-and-effect relationship between property values and proximity to transmission lines, but has revealed trends that are generally applicable to properties near transmission lines: • When negative impacts on property values occur, the potential reduction in value is in the range of one to 10 percent. • Property value impacts decrease with distance from the line; thus, impacts are usually greater on smaller properties than on larger ones. • Negative impacts diminish over time. • Other amenities, such as proximity to schools or jobs, lot size, square footage of the home, and neighborhood characteristics, tend to have a greater effect on sale price than the presence of a transmission line. • The value of agricultural property decreases when transmission line structures interfere with farming operations.[517]

418. Commenters noted that agricultural property values would likely be impacted if the transmission line constrains current or future farming methods such as aerial spraying. Depending on the impact, this could preclude the ability to grow certain crops such as sweet corn and beets. Commenters also noted that the potential for impact is greater when the property itself relies heavily on its aesthetic character, for example, a riverfront property or other scenic viewshed. While studies specific to these impacts were not identified, EERA staff believes these concerns to be legitimate.[518]

419. The study, "High-Voltage Transmission Lines and Rural, Western Real Estate Values," investigated the impact of 500 kV transmission lines on property values of agricultural, residential, and recreational uses throughout 640 miles of Montana between 2000 and 2010. If the property was more heavily oriented to residential use - it was more vulnerable to transmission line impacts, whereas property oriented more toward purely recreational use were much less vulnerable to impacts. Properties that were oriented to agricultural use showed no price effects of transmission lines. The larger the property, the less vulnerable it was to impacts.[519]

[516] FEIS at 104.
[517] FEIS at 105.
[518] FEIS at 105.
[519] FEIS at Appendix H.

420. The applicant would be responsible for any construction-related damages and for returning affected property to its original condition, which would help maintain property value.[520]

x. Land Use and Zoning

~~399.~~ This project is subject to Minnesota's Power Plant Siting Act (Minnesota Statute § 216E.10). Under this Statute, the route permit issued for a transmission line "shall be the sole site or route approval required to be obtained by the utility. Such permit shall supersede and preempt zoning restrictions, building or land use rules, regulations or ordinances promulgated by regional, county, local and special purpose government." Therefore, the applicant is not required to seek permits or variances from local governments to comply with applicable zoning codes. Nonetheless, impacts to local zoning can clearly impact human settlements, and the Commission considers impacts to human settlements as a factor in selecting transmission line routes.[521]

421. Transmission line and substation projects have the potential to be incompatible with existing land use patterns, local zoning requirements, and the future land use planning of local governments. The project's construction and operation are not expected to have significant impacts on land use. However, should a transmission line be built, it would preclude future development not identified in this EIS within the ROW. For example, a new home or business could not be constructed in the ROW. Depending on the parcel, it could eliminate all options for construction. Depending on the proximity of a development area, it could also impede growth of communities in the direction of the HVTL, that is, it could strongly influence future growth. Based on review of the zoning information for the counties crossed by each route alternative, the likelihood of future residential, commercial, or industrial development within the route alternatives is generally low.[522]

422. Construction and operation of substations would represent a long-term impact on existing land uses as these areas would be converted to developed and industrial areas. Existing land uses adjacent to the substation sites would be allowed to continue.[523]

423. Project impacts to zoning and to current and future land uses can be mitigated by selecting routes alternatives that are compatible, to the extent possible, with community zoning and land-use plans. Land-use impacts can be mitigated by

[520] FEIS at 105.
[521] FEIS at 94.
[522] FEIS at 98, 99.
[523] FEIS at 99.

minimizing aesthetic impacts of the project, to the extent that zoning and land-use plans address aesthetics (for example, landscaping). Land-use impacts can also be mitigated by using existing ROW to the maximum extent possible. The proposed transmission line is generally compatible with local planning and zoning ordinances. Impacts to planning and zoning are anticipated to be negligible.[524]

424. If the Commission selects a route including Route Segment G1 (Blue Route) or Route Segment G2, further coordination with the city of Augusta would be required to further understand potential mitigation required for impacts to the city's ongoing residential development.[525]

~~ix.~~xi. *Effects on Human Settlement: Summary of Comparison of Route Alternatives*

~~400.~~425. No residences are anticipated to be displaced by the Project. The Blue Route and Preferred Route minimize residential impacts more generally because they are within 500 feet of fewer residences than the other end-to-end routes studied in this proceeding:[526]

[524] FEIS at 100.
[525] FEIS at 100.
[526] Xcel Energy Response to Hearing Comments at 19 and 26 (Dec. 13, 2024).

Table 3

	Preferred Route	MDNR Proxy Route	Blue Route	Purple Route	Route Option C	Route Option D
Residences within 0-500 feet	146	172	145	159	191	192

~~401.~~426. Most recreational resources in the Project area are linear features that are crossed by all route segments. Few other recreational resources are present within the route width analyzed by EERA.[527]

~~402.~~427. Impacts on cultural values, environmental justice, noise, property values, socioeconomics, transportation, and public services do not vary significantly among routes.[528]

B. Effects on Public Health and Safety

~~403.~~428. Minnesota's HVTL routing factors require consideration of the Project's potential effect on health and safety.[529]

~~404.~~429. Impacts to human health and safety are assessed by looking at ~~three main~~five issues: public and worker safety, electronic interference, electric and magnetic fields (including implantable medical devices), stray voltage, and induced voltage.[530] These issues are not anticipated to vary among route alternatives.

i. Electromagnetic Fields (EMF)

~~405.~~430. "EMF" is an acronym for the terms electric and magnetic fields. For the lower frequencies associated with power lines (referred to as ELF), EMF is considered separately – electric fields and magnetic fields, measured in kilovolts per meter (kV/m) and milliGauss (mG), respectively. Electric fields are dependent on the voltage of a transmission line and magnetic fields are dependent on the current carried by a transmission line. The strength of the electric field is proportional to the voltage of the line, and the intensity of the magnetic field is proportional to the current flow through the conductors. Transmission lines operate at a power frequency of 60 Hz (cycles per second).[531]

[527] Ex. EERA-12 at 9 (DEIS).
[528] Ex. EERA-12 at 7(DEIS).
[529] Minn. Stat. § 216E.03, subd. 7(b)(1); Minn. R. 7850.4100, subp. B.
[530] Ex. EERA-12 at 118 (DEIS); Ex. Xcel-2 at 71 (RP Application).
[531] Ex. Xcel-2 at 121 (RP Application).

~~406.~~431. Because the EMF associated with a transmission line is proportional to the amount of electrical current passing through the power line it will decrease as distance from the line increases. This means that the strength of EMF that reaches a house adjacent to a transmission line right-of-way will be significantly weaker than it would be directly under the transmission line. Electric fields are easily shielded by conducting objects, such as trees and buildings, further shielding electric fields.[532]

~~407.~~432. There is no federal standard for transmission line electric fields. The Commission, however, has imposed a maximum electric field limit of 8 kV/m measured at one meter above the ground.[533]

~~408.1. Impacts to human health from possible exposure to EMFs are not anticipated. The Project would be constructed to maintain proper safety clearances and the substations would not be accessible to the public. EMF associated with the Project are below Commission permit requirements, and state and international guidelines.[534]~~

~~409.~~433. The maximum electric field associated with the Project (nominal voltage plus five percent), measured at one meter (3.28 feet) above the ground, is calculated to be 4.14 kV/m. The strength of electric fields diminishes rapidly as the distance from the conductor increases.[535]

434. Because magnetic fields are dependent on the current flowing on the line, the DEIS' calculations were based on two typical system conditions that are likely to occur during the Project's first year in service. The two scenarios are system peak energy demand and system average energy demand. System peak energy demand represents the current flow on the line during the peak hour of system-wide energy demand. Peak demand is 1850 amps on both conductors. Whereas system average energy demand represents the current flow on the line during a non-peak time Average demand is 1,100 amps on both conductors. For both scenarios the magnetic field values were calculated at a point where the conductor is closest to the ground. Like electric fields, the data shows that magnetic field levels decrease rapidly as the distance from the centerline increases as shown in the figure above.[536]

435. Research on whether exposure to magnetic fields causes biological responses and health effects has been performed since the 1970s. The U.S. National Institute of

[532] Ex. EERA-12 at 117 (DEIS).

[533] I*n the Matter of the Route Permit Application for a 345 kV Transmission Line from Brookings County, S.D. to Hampton, Minn.*, MPUC Docket No. E-T2/TL-08-1474, Order Granting Route Permit (Sept. 14, 2010) (adopting the Administrative Law Judge's Findings of Fact, Conclusions, and Recommendation at Finding 194).

[534] ~~Ex. EERA-12 at 116 (DEIS); Ex. Xcel-2 at 131 (RP Application).~~

[535] Ex. EERA-12 at 118 (DEIS); Ex. Xcel-2 at 131 (RP Application).

[536] Ex. EERA-12 at 119 (DEIS).

Environmental Health Sciences and the World Health Organization's research does not support a relationship or association between exposure to electric power EMF and adverse health effects. The U.S. National Institute of Environmental Health Science evaluated numerous epidemiologic studies and comprehensive reviews of scientific literature regarding association of cancers with living near power lines, with magnetic fields in the home, and with exposure of parents to high levels of magnetic fields in the workplace. They concluded that "no consistent evidence for an association between any source of non-ionizing EMF and cancer has been found."[537]

436. Researchers continue to study potential health effects related to EMF and potential causal mechanisms. Since 1969, the International Agency for Research on Cancer (IARC) has been evaluating the carcinogenic risks of chemicals and other agents, such as viruses and radiation. In 2001, the IARC convened a working group of scientists to evaluate possible carcinogenic risks to humans from exposure to EMF. These scientists concluded that ELF magnetic fields are possibly carcinogenic to humans (a "Group 2B carcinogen"). Group 2B carcinogens are agents for which there is limited evidence of carcinogenicity in humans and less than sufficient evidence for carcinogenicity in experimental animals.[538]

437. In 2002, Minnesota formed an Interagency Working Group to evaluate EMF research and develop public health policy recommendations for any potential problems arising from EMF effects associated with high voltage transmission lines. Their research found that some epidemiological studies have shown no statistically significant association between exposure to EMF or health effects, and some have shown a weak association. Studies have not been able to establish a biological mechanism for how magnetic fields could cause cancer.[539]

438. There are multiple studies that suggest the potential for negative effects of EMF on health, including concerns about various cognitive functions (Kazemi et al 2018; Tekieh et al 2018; Aliyari et al 2019; Duan et al 2014, Aliyari et al 2022), melatonin levels (Kazemi et al 2018, Aliyari et al 2022)), psychological effects including stress levels (Aliyari et al 2019, Aliyari et al 2022); cellular health (Garip and Akan 2010); metabolic health including changes in blood composition (Aliyari et al 2022); and neurochemical levels and neuronal health (Duan et al 2014). However, these studies relied on small sample sizes, short durations of observation, in-vitro or controlled conditions with consistent exposure levels that would not necessarily reflect actual

[537] FEIS at 120.
[538] FEIS at 120.
[539] FEIS at 120.

exposure levels, and/or single species observations not on humans and the findings are therefore limited and further research is required.[540]

439. Electromechanical implantable medical devices, such as cardiac pacemakers, implantable cardioverter defibrillators (ICDs), neurostimulators, and insulin pumps could be subject to interference from EMF, which could mistakenly trigger a device or inhibit it from responding appropriately. The project is under American Conference of Governmental Industrial Hygienists and ICD manufacturer's recommended threshold for magnetic fields. Electrical fields associated with the project are below the 5.0 kV/m interaction level for modern, bipolar pacemakers.[541]

440. There is the potential for impacts to older, unipolar pacemakers directly underneath the project line. Workers with ICDs should consult with their doctors directly with concerns about work in electrical or magnetic environments. In the event ICDs are impacted by EMF, it generally results in a temporary asynchronous pacing. Therefore, health impacts or permanent impacts on implantable medical devices are anticipated to be negligible.[542]

441. Members of the public would be subject to EMF if living or working (for example, operating their farming equipment) near the line. Impacts to human health from ~~possible~~EMF exposure ~~to EMFs are~~ are not anticipated.[543] The Project would be constructed to maintain proper safety clearances and the substations would not be accessible to the public. EMF associated with the Project are below Commission permit requirements, and state and international guidelines.[544]

~~410.~~442. The Sample Route Permit includes the following condition~~s~~:

> The Permittee shall design, construct, and operate the transmission line in such a manner that the electric field measured one meter above ground level immediately below the transmission line shall not exceed 8.0 kV/m rms.~~[545]~~
>
> "The Permittee shall design, construct, and operate the transmission line in a manner so that the maximum induced steady-state short-circuit current shall be limited to five milliamperes root mean square (rms) alternating current between the ground and any non-stationary object within the

[540] FEIS at Appendix J page 5, 6.
[541] FEIS at 123, 124.
[542] FEIS at 124.
[543] FEIS at 118.
[544] Ex. EERA-12 at 116 (DEIS); Ex. Xcel-2 at 131 (RP Application).
~~[545] Ex. EERA-12 at 120 (DEIS).~~

ROW, including but not limited to large motor vehicles and agricultural equipment. All fixed metallic objects on or off the ROW, except electric fences that parallel or cross the ROW, shall be grounded to the extent necessary to limit the induced short-circuit current between ground and the object so as not to exceed one milliampere rms under steady state conditions of the transmission line and to comply with the ground fault conditions specified in the National Electric Safety Code. The Permittee shall address and rectify any induced current problems that arise during transmission line operation." [546]

443. The Commission has adopted a prudent avoidance approach in routing transmission lines and, on a case-by-case basis, considers mitigation strategies for minimizing EMF exposure levels associated with transmission lines.[547] Applicable standards including National Electric Safety Code, Occupational Safety and Health Administration standards, and electrical performance standards would also be followed by the applicant.[548]

444. A commenter suggested greater distances between homes and the transmission line and EMF monitoring.[549]

445. ~~No i~~Impacts due to EMF are not anticipated as a result of the Project, and no additional mitigation was proposed in the FEIS~~is necessary~~.[550]

~~411.~~

ii. Stray Voltage

~~412.~~446. "Stray voltage" is a condition that can potentially occur on a property or on the electric service entrances to structures from distribution lines connected to these structures— not transmission lines as proposed here. The term generally describes a voltage between two objects where no voltage difference should exist. More precisely, stray voltage is a voltage that exists between the neutral wire of either the service entrance or of premise wiring and grounded objects in buildings such as barns and milking parlors. The source of stray voltage is a voltage that is developed

[546] FEIS at 124.
[547] FEIS at 123.
[548] FEIS at 9.
[549] FEIS at 123.
[550] Ex. Xcel-2 at 131 (RP Application).

on the grounded neutral wiring network of a building and/or the electric power distribution system.[551]

~~413.~~447. Stray voltage is generally associated with distribution lines. The Project – a transmission line – does not create stray voltage because it does not directly connect to businesses, residences, or farms.[552]

~~414.~~448. Potential impacts to residences and farming operations from stray voltage are not anticipated. Transmission lines do not produce stray voltage during normal operation, as they are not directly connected to businesses, residences, or farms. The Project would be constructed to NESC standards and therefore impacts are anticipated to be minimal.[553]

449. During the October/November 2024 meetings and hearings, members of the public had questions and comments concerning stray voltage. At the meetings and hearings, Xcel Energy representatives provided further information regarding the Applicant's voluntary procedures related to stray voltage. Also, in Xcel Energy's Comments on the DEIS, the Applicant provided a link to the *Minnesota Stray Voltage Guide: A Guide for Addressing Stray Voltage Concerns* for the convenience of EERA and the public.[554]

~~415.~~450. If stray voltage impacts were to occur after the transmission line was installed, landowners are encouraged to coordinate with their local electrical provider as outlined in the *Minnesota Stray Voltage Guide*. Should the local provider determine impacts are not a result of the distribution system, landowners are encouraged to contact Xcel Energy.[555]

~~416.~~451. Section 5.3.4 of the Sample Route Permit includes the following condition specific to grounding, electric field and electronic interference:

> The Permittee shall design, construct, and operate the transmission line in a manner so that the maximum induced steady-state short-circuit current shall be limited to five milliamperes root mean square (rms) alternating current between the ground and any nonstationary object within the right-of-way, including but not limited to large motor vehicles and agricultural equipment. All fixed metallic objects on or off the right-of-way, except electric fences that

[551] Ex. Xcel-2 at 130 (RP Application).
[552] Ex. Xcel-2 at 130 (RP Application).
[553] Ex. EERA-12 at 123 (DEIS).
[554] Xcel Energy DEIS Comments at 5 (Nov. 25, 2024) (eDocket No. 202411-212383-01).
[555] FEIS at 128.

parallel or cross the right-of-way, shall be grounded to the extent necessary to limit the induced short-circuit current between ground and the object so as not to exceed one milliampere rms under steady state conditions of the transmission line and to comply with the ground fault conditions specified in the NESC. The Permittee shall address and rectify any induced current problems that arise during transmission line operation.[556]

~~417.~~452. Impacts are not anticipated due to the Project, and no additional mitigation was proposed in the FEIS~~is necessary~~.[557]

iii. Induced Voltage

~~418.1. Transmission lines can induce voltage on a distribution circuit that is parallel and immediately under the transmission line. If the proposed transmission lines parallel or cross distribution lines, appropriate mitigation measures can be taken to address any induced voltages.[558]~~

453. It is possible for electric fields from a transmission line to extend to a conductive object near the transmission line. This could induce a voltage on the object. Smaller conductive objects near the line could cause a nuisance shock to a person, but it is not a potential safety hazard. Metal buildings within the right-of-way might require grounding. Impacts would be minimized by adhering to relevant local and state codes, the NESC, and NERC requirements.[559]

454. Transmission lines can induce voltage on a distribution circuit that is parallel and immediately under the transmission line. If the proposed transmission lines parallel or cross distribution lines, and the distribution lines are not properly wired or grounded, indued voltage could be created. ~~appropriate m~~Mitigation measures can be taken to address any induced voltages.[560]

~~419.~~455. Smaller conductive objects near the transmission line that are insulated or semi-insulated from the ground could cause a nuisance shock to a person from a small current passing through the person's body to the ground. If there were insulated pipelines, electric fences, telecommunication lines, or other conductive objects such as tractors or automobiles—in part because tires are made electrically conductive to eliminate static discharge building up while in motion—with greater

[556] Ex. EERA-12 at 124–25 (DEIS).
[557] Ex. EERA-12 at 125 (DEIS).
[558] ~~Ex. Xcel-2 at 130 (RP Application).~~
[559] Ex. EERA-12 at 125 (DEIS).
[560] Ex. Xcel-2 at 130 (RP Application).

lengths and sizes, induced voltage from a transmission line could produce a larger shock.[561]

~~420.~~456. The Project would follow NESC standards, which require the steady-state (continuous) current between the earth and an insulated object located near a transmission line to be below 5 milliamps (mA). In addition, the Commission imposed a maximum electric field limit of 8 kV/m measured at one meter above the ground. The standard is designed to prevent any induced voltage impacts.[562]

~~421.~~457. The Sample Route Permit also includes a condition related to grounding in Section 5.3.4, as identified previously.[563]

458. Xcel Energy committed to meeting electrical performance standards in Section 6.2.12.4 of the RP Application.[564]

iv. Public and Worker Safety

459. As with any construction project, there are construction related risks. These could include potential injury from falls, equipment and vehicle use, and electrical accidents. There is potential for construction to disturb existing environmental hazards.[565]

460. Electrocution is a risk that could occur with direct contact to lines. It could also happen when working near power lines, like when using heavy equipment. Electrocution could occur when there is electrical contact between an object on the ground and an energized conductor, but this situation is most likely with distribution lines. There is also electrocution risk from unauthorized entry into the substation.[566]

461. Any accidents that might occur during construction of the project would be handled through local emergency services. Existing emergency services should have sufficient capacity to respond to any emergencies.[567]

462. Commission route permits contain the following mitigation related to safety: "The Permittee shall design the transmission line and associated facilities to meet or exceed all relevant local and state codes, the National Electric Safety Code, and NERC requirements. This includes standards relating to clearances to ground,

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[561] FEIS at 129.
[562] Ex. EERA-12 at 126 (DEIS).
[563] Ex. EERA-12 at 124–25 (DEIS).
[564] Ex. EERA-12 at 126 (DEIS); Ex. Xcel-2 at 130 (RP Application).
[565] FEIS at 125.
[566] FEIS at 125.
[567] FEIS at 126.

clearance to crossing utilities, clearance to buildings, strength of materials, clearances over roadways, ROW widths, and permit requirements."[568]

463. The project would be designed to meet or exceed local, state, and the applicant's standards regarding clearance to the ground, clearance to crossing utilities, strength of materials, and ROW distances. Construction crews and contract crews would also comply with local, state, and NESC standards for installation and construction practices. The applicant would use their established safety procedures, as well as industry safety procedures, during and after installation of the transmission line, including appropriate signage during construction. The substations would be fenced and locked. Appropriate signage would be posted that identifies the hazards associated with the substation.[569]

464. A commenter suggested a permit condition requiring the Applicant to adhere to quality standards and regular internal inspections. The Applicant has an internal quality control program; thus, the FEIS did not recommend this permit requirement in the FEIS.[570]

465. A commenter suggested that the applicant be required to submit an emergency response plan for public review. While EERA staff does not believe the public should provide comments to influence the content of the plan, EERA recommended that the plan should nonetheless be available for public review.[571]

v. Electronic Interference

466. Electronic Interference refers to the disturbance of electrical circuits or equipment caused by electromagnetic radiation emitted from external sources. Transmission lines generate EMFs depending on the distance from sources and the type of line configuration. The EMFs decrease as the distance increases from the conductors.[572]

467. There are a number of FM and AM radio broadcasting stations that operate or can be heard within the project area. There are also many television channels that broadcast throughout the project area. These channels are received from cable, satellite providers or digital antennas. Wireless internet and cellular phones are used in the project area. GPS are used in daily life, aviation, vehicle navigation, surveying, aerial drones, and agricultural activities.

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[568] FEIS at 126.
[569] FEIS at 126.
[570] FEIS at 126.
[571] FEIS at 126.
[572] FEIS at 130.

468. Wireless internet and cellular phone operate at frequencies in the 900 MHz ultra-high frequency (UHF) range—a range for which impacts from corona-generated noise are anticipated to be negligible. No impacts to electronic devices are anticipated.[573]

469. GPS works by sending radio-frequency signals from a network of satellites to the receiver. Because of this, buildings, trees, and other physical structures have the potential to interfere with a GPS signal.[574] Research evaluating the potential for interference in the use GPS satellite-based microwave signals under or near power line conductors indicates it is unlikely that there would be electronic interference while using GPS. Interference would be more likely near a transmission line structure, and unlikely under a transmission line due to shadow effects. Commenters have expressed experiencing interference with agricultural GPS navigation equipment from existing large transmission lines. Drones used for agricultural purposes might be subject to similar interference concerns. No GPS impacts are expected from the construction or operation of the project.[575]

470. Electronic interference from HVTLs can impact electronic communications like radios, television and microwave communications in three ways: corona noise, shadowing effect and gap discharge.[576]

471. Commission route permits contain the following mitigation related to electronic interference: "If interference with radio or television, satellite, wireless internet, GPS-based agriculture navigation systems or other communication devices is caused by the presence or operation of the Transmission Facility, the Permittee shall take whatever action is necessary to restore or provide reception equivalent to reception levels in the immediate area just prior to the construction of the Transmission Facility. The Permittee shall keep records of compliance with this section and provide them upon the request of Commerce or Commission staff."[577]

472. Should GPS interference occur, the Continuously Operating Reference Station is able to continuously provide survey grade positioning corrections via the internet. Users with Real-Time Kinematic capable equipment can receive real-time corrections to their geospatial positions, yielding a more accurate horizontal and vertical measurement.[578]

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[573] FEIS at 130, 131.
[574] FEIS at 130, 131.
[575] FEIS at 131.
[576] FEIS at 131.
[577] FEIS at 132.
[578] FEIS at 132.

C. Effects on Land-Based Economies

~~422.~~473. Minnesota's HVTL routing factors require consideration of the Project's impacts to land-based economies—specifically, agriculture, forestry, tourism, and mining.[579]

i. Agriculture

~~423.~~474. The ROI for the land-based economy of agriculture in the DEIS is the route width for the Project.[580] Agriculture is the predominant land-use within the ROI. [581] Potential impacts are assessed through consideration of total agricultural land use, presence of prime farmlands, and agricultural practices (for example, aerial spraying and use of center pivot irrigation systems).[582]

~~424.~~475. The average farm size within the Project Study Area ranges from 180 acres in Wright County to 608 acres in Renville County. In general, average farm sizes in the northeastern portion of the Project Study Area are smaller than farm sizes in the southwestern portion of the Project Study Area. Areas of prime farmland follow a similar pattern with the amount of prime farmland steadily increasing as the routes travel to the southwestern portion of the Project Study Area.[583]

~~425.~~476. The Applicant attempted to avoid, where practicable, specialty crops, organic farms, and center-pivot irrigation systems by reviewing publicly available data and aerial imagery during the route development process.[584]

477. During construction, impacts would include the limited use of fields or certain portions of fields for a specific time period, compacting soil, generating dust, damaging crops or drain tile, and causing erosion. Soil compaction would lower annual crop yields for longer than one year. Temporary impacts from annual transmission line inspections might include pedestrian or light vehicle access, which would be limited to the ROW and areas where obstructions might require access from off the ROW.[585]

478. Permanent impacts would also occur when the footprint of the structures directly impedes agricultural production and/or impedes efficiency of a farming operation

[579] Minn. Stat. § 216E.03, subd. 7(b)(5); Minn. R. 7850.4100, subp. C.
[580] Ex. EERA-12 at 129 (DEIS).
[581] Ex. Xcel-2 at 132 (RP Application).
[582] Ex. EERA-12 at 129 (DEIS).
[583] Ex. Xcel-2 at 132 (RP Application).
[584] Ex. Xcel-2 at 132 (RP Application).
[585] FEIS at 135.

as each structure must be carefully avoided during tillage, planting, spraying, and harvesting of fields. ~~Prudent routing minimizes potential impacts. Implementation of the AIMP would also minimize and mitigate impacts to agriculture.~~[586] Structures can impede the efficient use of farm equipment and can significantly limit the management options for agricultural operations. Presence of structures can also impede efficiency of a farming operation as each structure must be carefully avoided during tillage, planting, spraying, and harvesting of fields. Transmission line structures in agricultural fields could also potentially impede or eliminate the use of irrigation systems such as center pivot irrigation systems, either by necessitating reconfiguration of an irrigation system to accommodate structures or by reducing crop revenue because all or a portion of a field could not be irrigated using the same practice.[587]

479. Transmission line structures could limit the use of the airstrips within the ROI and could potentially affect the coverage and effectiveness of aerial spraying. Structures could limit the ability of aerial applicators to reach specific areas of fields by restricting those areas where applicators could safely fly. Additionally, if structures are constructed near airstrips, they could pose a hazard to aircraft during takeoff and landing. During operation, the presence of the transmission line could preclude installing new private airstrips in close proximity.[588]

~~426.~~480. Apiaries could be affected by EMF changes due to powerlines. Studies have found that EMF negatively affects honey bees, including their ability to learn, fly, and forage, their sense of balance, memory, and pollination behavior, increasing aggression, and changes in metabolism. Decreases in energy metabolism could result in lower honey production.[589]

~~427.~~481. Most land (60 percent or more) within the route widths of the different route segments in Region A is designated as agricultural land use (cultivated crops and hay/pasture). Route Segment A4 has the most prime farmland and is the longest route segment (18.1 miles). Route Segment A5 has the least prime farmland.[590] The anticipated alignment of Route Segment A4 crosses a portion of RIM land. The RIM Reserve program compensates landowners for granting conservation easements. No other anticipated alignment in this region crosses an easement area.[591]

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[586] Ex. EERA-12 at 204 (DEIS).
[587] FEIS at 136.
[588] FEIS at 136.
[589] FEIS at 136.
[590] Ex. EERA-12 at 204 (DEIS).
[591] FEIS at 214.

~~428.~~482. Most land (more than 70 percent) within the route widths of the route segments in Region B is designated as agricultural land use (cultivated crops and hay/pasture). Route Segment B4 (Blue Route) has the most prime farmland and is the longest route segment (75.3 miles). The other route segments have similar amounts prime farmland and are similar lengths (45.4 to 51.0 miles).[592] The anticipated alignments of all the route segments cross a portion of RIM/CREP land. Route Segment B4 (Blue Route) crosses the highest number of acres (403 acres).[593]

~~429.~~483. Most land (more than 60 percent) within the route widths of the route segments in Region C is designated as agricultural land use (cultivated crops and hay/pasture). Route Segment C4 (Blue Route) has the least prime farmland; it is also the shortest route segment (28.6 miles). The total acres of prime farmland in Route Segments C1 (Purple Route), C2, and C3 are comparable (within 6 percent of one another) and their lengths are also comparable (56.0 to 58.5 miles).[594] Center pivot irrigation systems present in Region C are shown on Map 11.2, Map 11.3, and Map 11.4. There are two center pivot irrigation systems located within the route width of Route Segment C1 (Purple Route). Route Segment C1 (Purple Route) is also located immediately adjacent to center pivot irrigation systems. The anticipated alignment avoids impacts to the center pivot irrigation systems. The anticipated alignment of Route Segment C4 (Blue Route) crosses two center pivot irrigation systems near one another. The northern of the two could likely not be avoided given the residence on the east side of the property line. The southern center pivot irrigation system could potentially be avoided during final design if the anticipated alignment were shifted slightly east within the route width. Commentors noted an apiary within a property crossed by the route width of Regional Segment C2 however, it is not clear whether the apiary is or is not within the route width.[595]

~~430.~~484. Most land (more than 70%) within the route widths of the route segments in Region D is designated as agricultural land use (cultivated crops and hay/pasture). Route Segment D7 has the most prime farmland and farmland of statewide importance and is the longest route segment (12.8 miles). Route Segments D1 (Purple Route) and D2 have the least prime farmland and are the shortest segments (9.1 and 9.2 miles).[596] Two center pivot irrigation systems are crossed by the anticipated alignments for Route Segments D4 (Blue Route), D5, D6, and D7. Both systems are centered within the route width and crossed by the anticipated alignment. The applicant indicated that impacts could be avoided or mitigated through adjustments if the route is selected. One center pivot irrigation system is

[592] Ex. EERA-12 at 244 (DEIS).
[593] FEIS at 257.
[594] Ex. EERA-12 at 289 (DEIS).
[595] FEIS at 305.
[596] Ex. EERA-12 at 322 (DEIS).

located within the route width of Route Segments D4 (Blue Route), D6, and D7. The anticipated alignment avoids impacts to the center pivot irrigation system.[597]

~~431.~~485. Most land (70 percent or more) within the route widths of the route segments in Region E is designated as agricultural land use (cultivated crops and hay/pasture). Route Segment E2 (Blue Route) has less prime farmland and farmland of statewide importance and is the shorter route segment (17.7 miles). Route Segment E2 (Blue Route) also parallels more existing infrastructure (52% of its total length).[598] Multiple center pivot irrigation systems are present in Region E. While not crossed by its anticipated alignment, one center pivot irrigation system is located within the route width of Route Segment E1 (Purple Route). The anticipated alignment avoids impacts to the center pivot irrigation systems. Route Segment E2 (Blue Route) has two center pivot irrigation systems located within its route width, however neither are crossed by the anticipated alignment. Commentors noted an apiary within the route width of Regional Segment E2 (Blue Route).[599]

~~432.~~486. More than 40 percent of the land within the route widths of Route Segments F2, F3, F4 (Blue Route), F5, F6, and F8 is designated as agricultural land use (cultivated crops and hay/pasture). For Route Segments F1 (Purple Route) and F7, agricultural land use is 40 percent or more within the route width. Route Segment F3 has the most prime farmland; Route Segment F4 (Blue Route) has the most farmland of statewide importance. Route Segment F7 has the least prime farmland; Route Segment F1 (Purple Route) has the least farmland of state importance.[600] Multiple center pivot irrigation systems are present in Region F. Route segments in Region F have at least three center pivot irrigation systems within the route width. The anticipated alignments avoid the center pivot irrigation systems in most cases. Two center pivot irrigation systems are crossed by the anticipated alignment of Route Segment F4 (Blue Route). The applicant indicated that impacts could be avoided or mitigated through adjustments if the route is selected.[601]

~~433.~~487. Most land (more than 50%) within the route widths of the route segments in Region G is designated as agricultural land use (cultivated crops and hay/pasture) for cultivated crops. Route Segment G4 has the most prime farmland and farmland of statewide importance. Route Segment G6 has the least prime farmland. Route Segment G2 has the least farmland of statewide importance.[602] Multiple center pivot irrigation systems (25 total) are present in Region G. In most cases, the anticipated

[597] FEIS at 338.
[598] Ex. EERA-12 at 346-347 (DEIS).
[599] FEIS at 362.
[600] Ex. EERA-12 at 374 (DEIS).
[601] FEIS at 390.
[602] Ex. EERA-12 at 403 (DEIS).

alignments avoid center pivot irrigation systems within the route widths. Route Segments G1, G2, and Route Segments G3, G5, and G6 might impact two or more center pivot irrigation systems. These impacts would be unavoidable.[603]

~~434. Some route segments would increase the likelihood of interference with center pivot irrigation systems. For example, Route Segments 237, 240, 249, and 114 increase the potential impacts to center pivot irrigation systems.[604]~~

488. The placement of transmission line structures in cultivated cropland has the potential to interfere with farming operations if paralleling field edges and roadways is not possible due to other routing constraints. The placement of a substation on land used for row crop cultivation would result in a permanent conversion from row crop production to industrial use for the life of a project.[605]

489. Commission route permits contain following mitigation related to land-based economies: "The Permittee shall work with landowners to locate the high-voltage transmission line to minimize the loss of agricultural land, forest, and wetlands, and to avoid homes and farmsteads."[606]

490. Impacts to agricultural operations could be mitigated by prudent routing. Specifically, prudent routing could include selecting route alternatives that prioritize paralleling existing infrastructure (including roads and transmission lines) to maximize potential opportunity for ROW sharing and minimize potential interruptions or impediments of the use of farm equipment. Prudent routing would secondarily prioritize following existing division lines (including field, parcel and section lines) where paralleling existing infrastructure is not an option. Following existing division lines could minimize impacts to the use of farm equipment if, for example, row crops start and stop along the division lines. However, in some cases, following a property line could still be burdensome to a farmer if the HVTL would cut through their field, as field lines might not follow parcel boundaries.[607]

~~435.~~ To further mitigate impacts to agriculture, the applicant would implement measures to reduce soil erosion and sedimentation by installing erosion control devices during construction in accordance with the project 139 SWPPP and would compensate farmers for crop damage. The applicant would work with individual landowners through the easement process to verify the locations of organic farms and center-pivot irrigation systems identified to date and to identify any additional

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603 FEIS at 421.
~~604 Xcel Energy Response to Hearing Comments (Dec. 13, 2024).~~
605 Ex. Xcel-2 at 135 (RP Application).
606 FEIS at 138.
607 FEIS at 138.

specialty crops or CREP/RIM easements that could be affected by the project. The applicant developed a Draft Agricultural Impact Mitigation Plan (AIMP) and would coordinate with the Minnesota Department of Agriculture (MDA) to finalize the AIMP for the project. Large, brightly colored balls or markers could be installed on overhead transmission line conductors to improve their visibility to pilots near fields where aerial applications of pesticides or fertilizers occur.[608]

491. Multiple commenters expressed concern that the voluntary easement agreement, as currently proposed by Xcel Energy, fails to recognize the perpetual costs of lost agricultural productivity and land use.[609]

ii. Forestry

~~436.~~492. The DEIS assessed potential forestry impacts with respect to the route widths of the studied routes. Potential impacts are assessed through identification of commercial operations. Few forested areas are found in the ROI because most of the land cover is agricultural. As such, potential impacts to land-based economies for forestry would be negligible with one potential exception. One Christmas tree farm was identified within the route width of Route Segment 244; no additional forestry resources were identified.[610] Xcel Energy stated that it would coordinate with the owner of the Christmas tree farm, if that route segment is selected.[611]

iii. Mining

~~437.~~493. The DEIS assessed potential impacts on mining with respect to the route widths of the studied routes. Potential impacts are assessed through identification of known, existing mining operations and assessing potential impacts to those operations given the potential introduction of the Project. The DEIS also noted documented prospect mines where present within the ROI.[612]

~~438.~~494. Mining does not comprise a major industry in the Project area; however, there are aggregate (typically sand or gravel) mining sites in the ROI including actives sites in Region F and Region G. There are prospective sites in Region B and Region C. These aggregates are primarily mined for local use such as making concrete for

[608] FEIS at 139.
[609] FEIS at 50.
[610] Ex. EERA-12 at 130 (DEIS); Ex. Xcel-2 at 136 (RP Application); Ex. Xcel-19 at 7 (Langan Surrebuttal).
[611] *E.g.*, Xcel Energy Response to Hearing Comments (Dec. 13, 2024).
[612] Ex. EERA-12 at 131 (DEIS).

highways, roads, bridges, and other construction projects.[613] These mining operations are owned either by citizens, private companies, or MnDOT.[614]

~~439.~~495. Construction of the Project would require sand and aggregate for structure backfill, concrete, and to maintain reliable access routes. Some of the aggregate material could come from local sources. Although demand would temporarily increase during construction, it is anticipated that no new aggregate source facilities would be constructed, nor would any existing facilities be expanded.[615]

~~440.~~496. Impacts to mining would be minimal. There are some gravel pit operations present within the route width of the routes studied in the DEIS, but oftentimes the final alignment is anticipated to be on the outer edge or across the road from the gravel pit. Route Segments F3 and F6 would be anticipated to interfere with the current gravel pit operations at MnDOT ASIS Number 73079.[616] Likewise, Route Connector 109 crosses an active gravel pit.[617] No other operation impacts to mining were identified.[618]

iv. Tourism

~~441.~~497. The ROI used in the DEIS for assessing potential impacts to the tourism land-based economy is the local vicinity of the Project. Potential impacts are assessed through identification of known resources utilized by non-residents that would likely be recreating in the area and bringing in non-local revenue (or tourism dollars) to the area.[619]

~~442.~~498. Tourism in the vicinity of the Project centers around outdoor recreational opportunities and various festivals and activities hosted by the larger cities near the route options, like Becker, Willmar, Granite Falls, Marshall, and Redwood Falls. Outside these municipalities, residents and tourists enjoy recreational opportunities at the WMAs, WPAs, state parks, city parks, Mississippi River, Crow River, and Minnesota River State Water Trails, and snowmobile trails.[620] Tourism opportunities within the ROI beyond outdoor activities were not identified in the DEIS.[621] The FEIS identified human-built tourism in the affected counties to include county fairs,

[613] Ex. EERA-12 at 131 (DEIS).
[614] Ex. Xcel-2 at 137 (RP Application).
[615] Ex. EERA-12 at 131 (DEIS).
[616] Ex. EERA-12 at 10 (DEIS).
[617] Xcel Energy Response to Hearing Comments (Dec. 13, 2024).
[618] FEIS at 10.
[619] Ex. EERA-12 at 131 (DEIS).
[620] Ex. Xcel-2 at 137 (RP Application).
[621] Ex. EERA-12 at 131 (DEIS).

arts and crafts fairs, farmers markets, battlefields, and smaller community events. These events and other opportunities for tourism are advertised in nearby incorporated towns and the activities are not located within the ROI.[622]

499. Impacts to the tourism economy are anticipated to be negligible to minimal and independent of route selected.[623] There are limited recreational resources within the route width; therefore, any direct impacts to recreation that would cause an indirect impact to tourism-based economies are anticipated to be negligible.[624]

~~443.~~500. Direct impacts to recreation can indirectly impact tourism. If the potential for temporary interference with public access to recreation areas is identified, the applicant would work with the owner or managing agency to minimize disruption to the extent practicable. The applicant would continue to work with the DNR to avoid and minimize impacts on recreational resources under DNR's jurisdiction.[625]

v. Effects on Land-Based Economies: Summary of Comparison of Route Alternatives

~~444.~~501. Most of the land within the Project area is used for agricultural purposes, and general impacts are not anticipated to vary significantly among route alternatives. Although a portion of the Blue Route (Routes C2, C3, and C4) could impact the Lux Airstrip, EERA staff recommends the Commission select Route Segment 223 to avoid these impacts. Xcel Energy identified a modified Route Segment 223 to avoid these impacts while still avoiding additional residential impacts. The northern portion of the Project also includes the highest concentration of center pivot irrigation systems; these systems exist on both the Blue and Purple Routes.[626]

~~445.~~502. Impacts to mining are anticipated to be minimal; there are some gravel pit operations present within the route width but often times the final alignment is anticipated to be on the outer edge or across the road from the gravel pit. Route Segments F3 and F6 would be anticipated to interfere with the current gravel pit operations at MnDOT ASIS Number 73079.~~although there are gravel pit operations in proximity to some route alternatives studied, it is anticipated that the final alignment would avoid such operations~~.[627]

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[622] FEIS at 135.
[623] Ex. EERA-12 at 134 (DEIS).
[624] Ex. EERA-12 at 10 (DEIS).
[625] FEIS at 139.
[626] Ex. EERA-12 at 9–10 (DEIS).
[627] ~~Ex. EERA-12 at 10 (DEIS)~~FEIS at 10.

~~446.~~503. Impacts on forestry and tourism do not vary significantly among~~amount~~ route alternatives.[628]

D. Effects on Archaeological and Historic Resources

~~447.~~504. Minnesota Rule 7850.4100, subp. D, requires consideration of the effects of the Project on historic and archaeological resources.

~~448.~~505. To determine potential impacts on cultural resources (historic and archaeological resources), known archaeological and historic sites within one mile of the Route Alternatives and the footprints of the Garvin Substation, the Intermediate Substation, and the Support Substation were identified through a review of the OSA's online portal and the Minnesota State Historic Preservation Office's (SHPO) online portal (MnSHIP).[629] Additional cultural resources, beyond those identified in existing records, might be identified during future survey efforts after a final route is selected by the Commission and/or prior to construction.[630]

506. On September 19, 2024, the Commission filed a letter authorizing Xcel Energy to initiate consultation with SHPO to assess the effects of the Project on designated historic properties as described in Minn. Stat. § 138.665.[631] Xcel Energy prepared a Phase 1a archaeological assessment in accordance with SHPO's recommendation and worked cooperatively with SHPO and interested Tribal Nations to design a strategy to conduct both a Phase I Cultural Resource Reconnaissance survey and an Architectural History Inventory survey.[632] On September 25, 2024, SHPO confirmed that that it had reviewed and concurred with the appropriateness of the proposed survey plan.[633]

507. Within the regional study areas, the highest densities of archaeological sites are consistent with the following patterns. • Archaeological resources are concentrated along the Cottonwood River in Region A. • Sites are concentrated along the Minnesota River near Franklin, along the Yellow Medicine River in Yellow Medicine County and around the Granite Falls lakeshores in Region B. • In Region C, the highest density of sites is along waterbody shores in northern Kandiyohi County. • There are no heavy site concentrations in Regions D, E, of F. • In Region G, most site concentrations are densest along the Mississippi River.[634]

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[628] Ex. EERA-12 at 7 (DEIS).
[629] Ex. EERA-12 at 10 and 138–39 (DEIS).
[630] Ex. EERA-12 at 11 (DEIS).
[631] Ex. PUC-10 (SHPO Authorization).
[632] Ex. Xcel-16 at 20:23–21:18 (Langan Direct).
[633] Ex. Xcel-19 at 2:13–18 and Schedule 1 (Langan Surrebuttal).
[634] FEIS at 143.

~~449.~~508. Historic architectural resources present within the study area include bridges, culverts, roadways, residential, commercial and industrial structures, government buildings, churches, schools, town halls, farmsteads and associated structure, railroads, etc. Most of these resources fall outside of the route widths but have the potential to be indirectly impacted by the project in terms of viewshed alteration. The HVTL and/or new substations could be visible from a number of these resources, primarily impacting those resources that are occupied by residents or frequented by visitors or commuters.[635]

~~450.~~509. Impacts to archaeological and historic resources could result from construction activities such as right-of-way clearing, removal of historic buildings or structures, placement of structures, the construction of new substations and new access roads, temporary construction areas, and vehicle and equipment operation. Additional impacts can result from transmission line location and operation, such as with placement within view of a resource (typically a historic building, structure, or traditional cultural properties) that results in a negative effect on the setting, feeling, and/or association of the resource in the viewshed. This issue is especially pertinent when considering cultural resources, where the surrounding environment plays a crucial role in defining their character and significance.[636]

~~451.~~510. Xcel Energy committed to conducting additional research to identify cultural resources and cemeteries, such as continued coordination with SHPO and Tribal Nations to design an appropriate survey strategy for the Project, and to avoid or mitigate potential effects on resources identified during these surveys.[637] The survey strategy would be expected to result in both a Phase I Cultural Resource Reconnaissance survey and an Architectural History Inventory (Phase I Survey).[638] If cultural resources or mortuary sites/cemeteries are identified during the Phase I Survey, avoidance would be the primary mitigation measure.[639] Avoidance of resources could include adjustments to the Project design and designation of sensitive areas to be left undisturbed or spanned by the Project.[640]

511. Section 5.3.15 of the Sample Route Permit contains the following condition related to archaeological and historic resources:

> The Permittee shall make every effort to avoid impacts to archaeological and historic resources when constructing the

[635] FEIS at 143.
[636] Ex. EERA-12 at 139 (DEIS).
[637] Ex. EERA-12 at 11 (DEIS).
[638] Ex. EERA-12 at 11 (DEIS).
[639] Ex. EERA-12 at 141 (DEIS).
[640] Ex. EERA-12 at 141 (DEIS).

Transmission Facility. In the event that a resource is encountered, the Permittee shall consult with the State Historic Preservation Office and the State Archaeologist. Where feasible, avoidance of the resource is required. Where not feasible, mitigation must include an effort to minimize Transmission Facility impacts on the resource consistent with State Historic Preservation Office and State Archaeologist requirements.

Prior to construction, the Permittee shall train workers about the need to avoid cultural properties, how to identify cultural properties, and procedures to follow if undocumented cultural properties, including gravesites, are found during construction. If human remains are encountered during construction, the Permittee shall immediately halt construction and promptly notify local law enforcement and the State Archaeologist. The Permittee shall not resume construction at such location until authorized by local law enforcement or the State Archaeologist. The Permittee shall keep records of compliance with this section and provide them upon the request of Commerce or Commission staff.[641]

512. The preferred means of mitigating impact to cultural resources is prudent routing or structure placement by avoiding known archaeological and historic resources. If archaeological resources are anticipated or known to exist within a specific part of a route, potential resource impacts could be mitigated by measures developed in consultation with the SHPO or THPO prior to construction.[642]

~~452.~~513. If human remains or suspected burial sites are discovered during construction, the state archaeologist and THPOs would be contacted, and construction would cease at the location until the applicant and the state archaeologist have developed adequate mitigation measures as per Minnesota Statute § 307.08. An Unanticipated Discoveries Plan would be available for use during construction of the project that outlines the procedures to be followed in the event unanticipated archaeological materials are found. Construction workers would

[641] Ex. EERA-12 at 140 (DEIS) and Appendix F (Sample Route Permit).
[642] FEIS at 144.

receive training to recognize archaeological resources in the field so that work is halted in the event of an accidental relevant resource discovery.[643]

i. Effects on Archaeological and Historic Resources: Summary of Comparison of Route Alternatives

~~453.~~514. Archaeological resources are concentrated near watercourses and waterbodies in Regions A, B, C, and G, some resources are unevaluated for listing on the National Register of Historic Places within the route widths.[644] There is limited differentiation in impacts to archaeological and historic resources between the Route Alternatives.[645]

~~454.~~515. Historic architectural resources such as bridges, culverts, roadways, residential, commercial and industrial structures, government buildings, churches, schools, town halls, farmsteads and associated structure, and railroads are not within the route widths, but are present within one mile of Project Area.[646] Impacts to historic architectural resources can be minimized through prudent routing or structure placement and by avoiding known archaeological and historic resources.[647]

~~455.~~516. Xcel Energy considered information regarding the location of previously documented cultural resources sites and designed the routes to minimize any physical impacts to all known cultural resources.[648] Impacts to known archaeological and historic resources within the route width will be avoided through prudent routing or structure placement.[649] Impacts to cultural resources or mortuary sites or cemeteries identified during the Phase I Survey will be avoided through adjustments to the Project design and designation of sensitive areas to be left undisturbed or spanned by the Project.[650] In addition, Xcel Energy will develop an Unanticipated Discoveries Plan for use during construction that outlines the procedures to be followed in the event unanticipated archaeological materials are found.[651]

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[643] FEIS at 144.
[644] Ex. EERA-12 at 10 (DEIS).
[645] Ex. EERA-12 at 458 (DEIS).
[646] Ex. EERA-12 at 139 (DEIS).
[647] Ex. EERA-12 at 140 (DEIS).
[648] Ex. Xcel-2 at 147 (RP Application).
[649] Ex. Xcel-2 at 145–47 (RP Application); Ex. EERA-12 at 456 (DEIS).
[650] Ex. EERA-12 at 141 (DEIS).
[651] Ex. Xcel-2 at 147 (RP Application).

E. Effect on Natural Environment

~~456.~~517. Minnesota's HVTL routing factors require consideration of the Project's effect on the natural environment, including effects on air and water quality resources and flora and fauna.[652]

[652] Minn. Stat. § 216E.03, subd. 7(b)(1)–(2); Minn. R. 7850.4100, subp. E.

i. Air Quality

~~457.1. Construction of the Project will result in intermittent and temporary emissions of criteria pollutants. These emissions generally include dust generated from soil disturbing activities, such as earthmoving and wind erosion associated with right-of-way clearing, combustion emissions from construction machinery engines, and indirect emissions attributable to construction workers commuting to and from work sites during construction. Construction emissions would be dependent upon weather conditions, the amount of equipment at any specific location, and the period of operation required for construction at that location.~~[653]

518. The Clean Air Act regulates air emissions from stationary and mobile sources and requires the U.S. Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for six criteria pollutants: ground-level ozone (O3), particulate matter (PM10/PM2.5), sulfur dioxide (SO2), nitrogen dioxide (NO2), carbon monoxide (CO), and lead (Pb).[654] The EPA classifies all counties traversed by the Route Alternatives as attainment areas, meaning that the air quality meets all NAAQS.[655]

519. Construction of the Project will result in intermittent and temporary emissions of criteria pollutants. These emissions generally include dust generated from soil disturbing activities, such as earthmoving and wind erosion associated with right-of-way clearing, combustion emissions from construction machinery engines, and indirect emissions attributable to construction workers commuting to and from work sites during construction. Construction emissions would be dependent upon weather conditions, the amount of equipment at any specific location, and the period of operation required for construction at that location.[656]

~~458.~~520. Potential impacts to air quality during construction would be intermittent, localized, short-term, and minimal.[657] Air emissions during construction would primarily consist of emissions from construction equipment and vehicles and would include pollutants such as CO2, nitrogen oxides (NOx), and PM.[658] Dust generated from earth disturbing activities also gives rise to PM10/PM2.[659] Construction emissions would be dependent upon weather conditions, the amount of equipment

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~~653 Ex. Xcel-2 at 148 (RP Application).~~
654 Ex. Xcel-2 at 148 (RP Application); Ex. EERA-12 at 141 (DEIS).
655 *See* Ex. EERA-12 at 141 (DEIS).
656 Ex. Xcel-2 at 148 (RP Application).
657 Ex. EERA-12 at 141 (DEIS).
658 Ex. EERA-12 at 142 (DEIS).
659 Ex. EERA-12 at 142 (DEIS).

at any specific location, and the period of operation required for construction at that location.[660]

~~459.~~521. During operations, small amounts of emissions would be associated with the intermittent project operation and maintenance activities via mobile combustion and particulate roadway dust generation.[661] Small amounts of nitrogen oxides (NOX) and O3 would be created due to corona (loss of electricity) from the operation of transmission lines.[662] Minimal emissions will be generated from fuel combustion during routine inspection and maintenance activities.[663] Project operation and maintenance activities via mobile combustion and particulate roadway dust generation.[664]

522. Dust control during construction could include application of water or other commercially available non-chloride dust control agents on unpaved areas subject to frequent vehicle traffic, reducing the speed of vehicular traffic on unpaved roads, and covering open-bodied haul trucks.[665] Potential impacts to air quality are expected to be similar to across the entire Project, regardless of route.[666] The DEIS did not assess air quality at the regional level because impacts are anticipated to largely be independent of the route selected.[667]

~~460.~~523. In their Natural Heritage Review response (MCE 2023-00890) the DNR recommended not using dust control products that contain chlorides to avoid the potential for chloride products accumulating to levels that are toxic to plants and wildlife.[668]

ii. Greenhouse Gas

524. Greenhouse Gas (GHG) are gases that trap heat in the atmosphere. Some of the solar radiation that reaches Earth's surface radiates back toward space as infrared radiation. GHGs trap heat in the atmosphere from the absorption of this infrared radiation, which causes a rise in the temperature of Earth's atmosphere. This warming process is known as the greenhouse effect.

525. The most common GHGs include carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), and fluorinated gases. GHG emissions are calculated as carbon

[660] Ex. Xcel-2 at 148 (RP Application).
[661] Ex. EERA-12 at 143 (DEIS).
[662] Ex. EERA-12 at 143–44 (DEIS).
[663] Ex. EERA-12 at 143 (DEIS).
[664] Ex. EERA-12 at 143 (DEIS).
[665] Ex. EERA-12 at 143 (DEIS).
[666] Ex. EERA-12 at 141 (DEIS).
[667] Ex. EERA-12 at 141 (DEIS).
[668] FEIS at 147.

dioxide equivalent (CO2e), which is equal to the global warming potential (GWP) for each pollutant multiplied by the potential pollutant emissions. CO2e normalizes all GHGs emissions to CO2 for comparability across different pollutants.[669]

526. GHG emissions associated with the construction and operation of the project consist of direct emissions generated from combustion sources (for example, mobile on- and off-road sources) and land use change. Indirect emissions associated with the construction and operation of the project include the GHG emissions associated with electrical consumption. GHG emissions for each route segment by region are summarized in Appendix H. Variability in total anticipated GHG emissions by route segment (be region) are a function of varying lengths and/or differences in anticipated land use change. Because the total length of route alternatives would be similar, and because the project area has limited variability in land use, GHG emissions are anticipated to be similar for each route alternative.[670]

~~461. Project construction activities will result in temporary and intermittent increases in greenhouse gas (GHG) emissions from fuel combustion in construction equipment and commuter vehicles.[671] These emissions would be short-term and dispersed over the right-of-way; therefore, total emissions would be minimal and would not result in a direct impact to any one location.[672]~~

527. Potential emissions from the use of fluorinated gas, sulfur hexafluoride (SF6), is also associated with this project. SF6 is used in high-voltage circuit breakers in transmission systems. It is a powerful GHG. The use of such a substance is common due to its stability and effectiveness at insulating electrical equipment. However, potential SF6 emissions from high-voltage circuit breakers are minimal and not expected routinely because they are largely attributed to faulty equipment and leakage. Equipment containing SF6 is designed to avoid SF6 emissions.[673]

~~462. The use of fluorinated gas, sulfur hexafluoride (SF6), in high-voltage circuit breakers may increase GHG emissions associated with the Project.[674] Potential emissions from SF6 are minimal and not expected routinely because they are largely attributed to faulty equipment and leakage.[675] Equipment containing SF6 is designed to avoid SF6 emissions.[676]~~

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[669] FEIS at 158.
[670] FEIS at 159.
~~[671] Ex. EERA-12 at 153 (DEIS).~~
~~[672] Ex. EERA-12 at 153 (DEIS).~~
[673] FEIS at 160.
~~[674] Ex. EERA-12 at 156 (DEIS).~~
~~[675] Ex. EERA-12 at 156 (DEIS).~~
~~[676] Ex. EERA-12 at 156 (DEIS).~~

~~The most common GHGs include carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), and fluorinated gases.[677] GHG emissions are calculated as carbon dioxide equivalent (CO2e), which is equal to the global warming potential for each pollutant multiplied by the potential pollutant emissions.[678]~~

~~463.~~528. Minimization efforts to reduce project construction GHG emissions would include limiting vehicle idling to only times when necessary.[679] Minimization efforts to reduce project operational GHG emissions from SF6 would include following safe handling practices during refilling, avoiding exposure to high temperatures, and monitoring for leaks.[680]

~~464.~~529. Variability in total anticipated GHG emissions by route segment (or region) are a function of varying lengths and/or differences in anticipated land use change.[681] Because the total length of the Route Alternatives would be similar, and because the Project area has limited variability in land use, GHG emissions are anticipated to be similar across the entire Project.[682]

iii. Climate Change

530. Climate change is observed as changes in temperature and precipitation patterns, increases in ocean temperatures and sea level, changes in extreme weather events, and ecosystem changes. These changes are largely attributed to the greenhouse effect. As the amount of GHGs in the Earth's atmosphere increases, the greenhouse effect causes the Earth to become warmer. There are also naturally occurring climate variations. These are cyclical patterns caused by variations in ocean circulation and atmospheric pressure patterns that occur on timescales of weeks to decades. Increased global surface temperatures could change these natural climate patterns and the resulting impact on regional precipitation and temperature anomalies.[683]

~~465.~~531. The impact analysis for climate considers existing patterns in the ten counties in which the Route Alternatives are located and how the Project could be impacted by climate change, as well as how the Project could affect climate

~~677 Ex. EERA-12 at 154 (DEIS).~~
~~678 Ex. EERA-12 at 154 (DEIS).~~
679 Ex. EERA-12, Exhibit L at Table 1 (DEIS).
680 Ex. EERA-12 at 156 (DEIS).
681 Ex. EERA-12 at 156 (DEIS).
682 Ex. EERA-12 at 156 (DEIS).
683 FEIS at 148.

change.[684] Table 4 below denotes climate change risks for the counties traversed by the Project.[685]

Table 4: Climate Change Risks for Counties Traversed by the Project

County	Flood Risk	Wildfire Risk	Wind Risk	Air Quality Risk	Heat Risk
Chippewa	Moderate	Moderate	Minimal	Moderate	Minor
Kandiyohi	Minor	Moderate	Minimal	Moderate	Minor
Lyon	Minor	Moderate	Minimal	Minor	Minor
Meeker	Minor	Moderate	Minimal	Moderate	Minimal
Redwood	Minor	Moderate	Minimal	Minor	Minor
Renville	Minor	Moderate	Minimal	Minor	Minor
Sherburne	Moderate	Moderate	Minimal	Moderate	Minor
Stearns	Moderate	Moderate	Minimal	Moderate	Minor
Wright	Major	Moderate	Minimal	Minor	Minor
Yellow Medicine	Moderate	Moderate	Minimal	Minor	Minor

532. The climate change risks most susceptible to the Project include increases in 100-Year storm frequencies and soil erosion from increased storm intensities.[686]

~~466.~~533. The project would result in GHG emissions that could minimally contribute to climate change impacts such as changes in temperature, precipitation, and extreme weather events. The climate change risks most susceptible to the project include increases in 100-year storm frequencies and soil erosion from increased storm intensities. The portion of the project located within Wright County could also be susceptible to the major flood risk. Tree and vegetation loss in the ROW from construction eliminates related climate resilience benefits, leading to more intense runoff during storms or flooding. The project could also be susceptible to more frequent high-winds and more frequent wildfires.[687]

~~467.~~534. The Project would be designed to be resilient under changing climatic factors. The Project's design incorporates elements that minimize impacts from more extreme weather events such as increased rainfall and flooding, storms, high winds, and heat waves that are expected to accompany a warming climate.[688] The Project design would include shield wire for lighting protection, and steel structures and twisted pair conductor to withstand more frequent and intense rain events.[689]

[684] Ex. EERA-12 at 144 (DEIS).
[685] Ex. EERA-12 at 150 (DEIS).
[686] Ex. EERA-12 at 150 (DEIS).
[687] FEIS at 154.
[688] Ex. EERA-12 at 150 (DEIS).
[689] Ex. EERA-12 at 151 (DEIS).

Xcel Energy would also design the top of concrete for the structure foundations to be one foot above the 100-Year floodplain elevation anywhere structures are installed in areas prone to flooding.[690]

iv. Geology and Topography

~~468.~~535. Construction and operation of transmission line projects have the potential to impact geology through temporary, construction-related impacts and/or long-term impacts.[691]

~~469.~~536. The Project area surface geology is dominated by quaternary aged glacial deposits.[692] Thickness of the glacial deposits vary depending on the location and type of deposit; thicknesses generally range from 50–650 feet, with some areas where bedrock outcrops or is present just below the surface.[693] The Project area bedrock consists of Cretaceous shale and sandstone, and Precambrian igneous and metamorphic rocks.[694]

~~470.~~537. Structure foundations have the potential to impact bedrock; however, impacts to topography along the Project right-of-way, such as the creation of abrupt elevation changes, are not expected given that original surface contours would be re-graded and revegetated to the extent feasible.[695] New substations could alter existing topography; however, permanent stormwater management measures would address drainage from newly established impervious areas and any changes in topography.[696]

~~471.~~538. The DEIS did not separately assess impacts to geology and topography at the regional level because impacts are anticipated to largely be independent of the route selected.[697]

v. Soils

~~472.~~539. Soil information for the Project right-of-way was obtained from the USDA-NRCS Soil Survey Geographic (SSURGO) database.[698] Soil mapped in the right-of-way generally includes four soil texture classes: loam, silty clay loam, sandy

[690] Ex. EERA-12 at 151 (DEIS).
[691] Ex. EERA-12 at 151 (DEIS).
[692] Ex. EERA-12 at 151 (DEIS).
[693] Ex. EERA-12 at 151 (DEIS).
[694] Ex. EERA-12 at 151 (DEIS).
[695] Ex. EERA-12 at 151 (DEIS).
[696] Ex. EERA-12 at 153 (DEIS).
[697] Ex. EERA-12 at 151 (DEIS).
[698] Ex. EERA-12 at 172 (DEIS).

loam, or clay loam.[699] The drainage classes of these soils range from very poorly drained to well drained.[700] Table 5 below denotes NRCS mapped soils within the right-of-way for each route segment by region.[701]

Table 5: Summary of NRCS mapped soils within right-of-way (acres)

Region	Route Segment	Length (mi)	Hydric Soils [1]	Compaction Prone [2]	Rutting Hazard [3]	Erosion Hazard (Off-Road, Off-Trail) [4]	Revegetation Concerns [5]
A	A1 (Purple Route)	17.49	78	96	318	39	0
	A2	17.58	76	89	320	35	0
	A3 (Blue Route)	14.59	81	57	265	9	0
	A4	18.14	81	74	330	11	0
	A5	15.11	63	91	274	30	0
	A6	14.54	81	67	264	12	0
	A7	14.56	79	56	264	10	0
B	B1 (Purple Route)	45.41	98	426	821	71	25
	B2	51.03	144	458	920	141	25
	B3	46.92	110	411	847	68	25
	B4 (Blue Route)	75.26	360	510	1,359	233	0
C	C1 (Purple Route)	55.98	209	435	1,018	64	51
	C2	58.53	350	286	1,064	36	12
	C3	57.9	214	323	1,053	29	29
	C4 (Blue Route)	28.61	164	99	521	26	0
D	D1 (Purple Route)	9.06	47	72	165	6	0
	D2	9.24	48	72	168	6	0
	D3	10.1	55	70	184	6	0
	D4 (Blue Route)	10.78	69	65	196	10	0
	D5	10.86	67	75	198	5	0
	D6	11.39	66	65	207	11	0
	D7	12.76	69	99	232	15	0
E	E1 (Purple Route)	17.68	64	225	320	30	0
	E2 (Blue Route)	16.55	56	193	301	21	0
F	F1 (Purple Route)	2.24	0	32	35	2	0
	F2	2.28	2	35	40	1	0
	F3	2.71	0	43	49	2	0
	F4 (Blue Route)	2.7	0	43	47	1	0
	F5	2.43	0	43	44	1	0
	F6	2.65	0	42	48	2	0
	F7	2.14	0	37	39	1	0
	F8	2.69	0	46	49	2	0
G	G1 (Blue Route)	25.43	9	220	460	6	0
	G2	24.63	7	208	445	8	0
	G3 (Purple Route)	22.7	9	257	410	29	130
	G4	25	10	304	451	32	130
	G5	24.25	10	271	438	32	130
	G6	22.74	9	273	411	38	130

[1] Hydric soil includes hydric soils (100 percent) and predominantly hydric soils (67–99 percent).
[2] Soils considered susceptible to Rutting Hazard include those with a rating of "moderate" or "severe."
[3] Soils considered to be compaction prone soils include those with a rating of "medium" or higher.
[4] Soils considered susceptible to erosion hazard soils include those with a rating of "medium," "severe," or "very severe".

[699] Ex. EERA-12 at 172–73 (DEIS).
[700] Ex. EERA-12 at 173 (DEIS).
[701] Ex. EERA-12 at Appendix E (DEIS, Route Alternatives Data Analysis Tables).

Region	Route Segment	Length (mi)	Hydric Soils [1]	Compaction Prone [2]	Rutting Hazard [3]	Erosion Hazard (Off-Road, Off-Trail) [4]	Revegetation Concerns [5]
[5] Soils considered to have revegetation concerns include soils with a non-irrigated land capability classification of three or greater.							

540. According to the USDA-Natural Resource Conservation Service (NRCS) Soil Survey Geographic (SSURGO) database, exposed soils within the ROW have a slight, moderate, or severe potential erosion hazard. Soil compaction susceptibility within the ROW ranges from low to high. Soil rutting potential within the ROW ranges from slight to severe. Soils with a low revegetation potential are within project ROW. Hydric soils are present throughout the ROW. A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil profile.[702]

541. Transmission line and substation projects have the potential to impact soils during construction and operation of the project. Construction might require some amount of grading to provide a level surface for the safe operation of construction equipment. In addition, potential topsoil and subsoil mixing might result from the excavation, stockpiling, and redistribution of soils during installation of transmission line structures and substation components. Localized soil erosion, compaction, and topsoil and subsoil mixing could affect revegetation within temporary work areas. Where the same access route is used to access multiple structure locations, the impacts could be more intense on that more heavily traveled route. During operation, soils could be temporarily disturbed for equipment access to the HVTL for maintenance.[703]

~~473. Construction and operation of the Project have the potential to impact soils within the right-of-way.[704] Construction might require some amount of grading to provide a level surface for safe operation of construction equipment.[705] In addition, potential topsoil and subsoil mixing might result from the excavation, stockpiling, and redistribution of soils during installation of transmission line structures and substation components.[706] During operation, soils could be temporarily disturbed for equipment access to the transmission line for maintenance.[707]~~

[702] FEIS at 178, 179.
[703] FEIS at 179.
~~[704] Ex. EERA-12 at 174 (DEIS).~~
~~[705] Ex. EERA-12 at 174 (DEIS).~~
~~[706] Ex. EERA-12 at 174 (DEIS).~~
~~[707] Ex. EERA-12 at 174 (DEIS).~~

~~474. Construction of new substations and modifications to existing substations would result in impacts to soils with the facility footprint.[708]~~

542. Modifications to two existing substations and construction of three new substations would result in permanent impacts to soils. Where present, operation of the substations would constitute a permanent loss of prime farmland soils. It is important to note that the prime farmland soil designation is independent of current land use at the proposed substation sites, which might have already been significantly modified by previous development.[709]

543. Commission route permits include the following measures to mitigate impacts to soils:

"The Permittee shall implement those erosion prevention and sediment control practices recommended by the Minnesota Pollution Control Agency Construction Stormwater Program. If construction of the Transmission Facility disturbs more than one acre of land or is sited in an area designated by the Minnesota Pollution Control Agency as having potential for impacts to water resources, the Permittee shall obtain a National Pollutant Discharge Elimination System/State Disposal System Construction Stormwater Permit from the Minnesota Pollution Control Agency that provides for the development of a Stormwater Pollution Prevention Plan that describes methods to control erosion and runoff.

The Permittee shall implement reasonable measures to minimize erosion and sedimentation during construction and shall employ perimeter sediment controls, protect exposed soil by promptly planting, seeding, using erosion control blankets and turf reinforcement mats, stabilizing slopes, protecting storm drain inlets, protecting soil stockpiles, and controlling vehicle tracking. Contours shall be graded as required so that all surfaces provide for proper drainage, blend with the natural terrain, and are left in a condition that will facilitate re-vegetation and prevent erosion. All areas disturbed during construction of the Transmission Facility shall be returned to pre-construction conditions."[710]

544. During construction of the transmission line, the applicant would implement measures to reduce soil compaction and has committed to soil decompaction during restoration of temporary workspaces, including travel lanes. Impacts to soils along the transmission line would be mitigated through the proper use and installation of

~~[708] Ex. EERA 12 at 174 (DEIS).~~
[709] FEIS at 179.
[710] FEIS at 179, 180.

BMPs, such as minimizing the number of vehicles trips and segregation of topsoil and subsoil.[711]

545. During construction and modification of the substations, the applicant indicated in the route permit application that the limit of disturbance would be within the footprint of the substations for both the foundation equipment and the concrete delivery trucks. Topsoil from the substation footprints would be moved to a pre-established storage area near the removal site, suitable for storage due to soil depth and grading that facilitates revegetation. Subsoil would be removed, if necessary, to a similarly suitable area for storage.[712]

546. ~~During construction of the transmission line, impacts to soils along the transmission line would be mitigated through the proper use and installation of best management practices, such as minimizing the number of vehicles trips and segregation of topsoil and subsoil.[713]~~ Xcel Energy has also committed to soil decompaction during restoration of temporary workspaces, including travel lanes.[714]

vi. Public and Designated Lands

~~475.~~ Public lands within the ROI include Wildlife Management Areas, Waterfowl Production Areas, and state game refuges. No other public lands such as local parks, state forests, or national forests were identified. Designated lands with easements within the ROI include: CREP and RIM easements, one designated Water Bank, and one Wild and Scenic River Bank.[715] Wildlife management areas are discussed in Fauna below.

547. The programs with conservation easements aim to establish native and permanent plant species and/or conserve and protect the natural habitat. Permanent clearing of vegetation within the conservation areas would impact the function and intent of these areas and potentially have long-term effects to the unique resources.[716]

548. Route Segment A4 includes a total of 13 acres of RIM reserve land, and its anticipated alignment crosses the designated land. Designated lands are present elsewhere (CREP within all but Route Segment A4, native prairie bank within Route

[711] FEIS at 180.
[712] FEIS at 180.
[713] ~~Ex. EERA-12 at 175 (DEIS).~~
[714] Ex. EERA-12 at 175 (DEIS).
[715] FEIS at 166.
[716] FEIS at 167.

Segment A5) but not crossed; these easements could be avoided during final design.[717]

549. There are CREP easements within the ROIs of all Route Segments, however Route Segment B2 crosses the fewest number of acres. All anticipated alignments would cross a portion of RIM Reserve Land. Route Segment B2 would cross the least amount of Rim Reserve Land. Route Segment B4 (Blue Route) would cross 122 acres of Native Prairie Bank.[718]

550. There are at least 15 acres of CREP easements within the ROIs of all Route Segments, except for Route Segment C4 (Blue Route) which has none. RIM Reserve Land is present within the ROIs of Route Segment C1 (Purple Route) and C3. No RIM reserve Land or CREP land is crossed by the anticipated alignments and their associated ROWs, and it is anticipated to be avoided during final design. There are no state game refuges in the ROI of Region C.[719]

551. There are no state game refuges, CREP easements, or RIM Reserve Land within Region D.[720]

552. Region E and F have no public or designated land within the route width.[721]

553. Designated lands with existing easements located within the route widths include 30 acres of a Wild and Scenic Riverbank crossed by Route Segments of G1 (Blue Route) and G2.[722]

554. The applicant avoided areas with designated easements as practicable and in some areas requested additional route width to allow for flexibility to avoid conservation easements. If easements are crossed, the applicant would work with landowners to determine measures to avoid and minimize impacts on these agricultural resources and to avoid interfering with landowner participation in the CREP or RIM programs. Additionally, the applicant would continue to coordinate potential easement crossings with BWSR.[723]

[717] FEIS at 235.
[718] FEIS at 281.
[719] FEIS at 323.
[720] FEIS at 351.
[721] FEIS at 376, 405.
[722] FEIS at 441.
[723] FEIS at 168.

~~vi.~~vii. *Water Quality and Resources*

~~476.~~555. The RP Application and ~~DEIS~~ FEIS analyzed impacts to water quality and resources, including groundwater, surface water, wetlands, impaired waters, and floodplains.

1) Groundwater

~~477.~~556. Installation of structure foundations could impact bedrock and groundwater if no avoidance or minimization measures are implemented. In addition, without avoidance and minimization measures, disturbance of soils and vegetative cover could affect water quality in adjacent groundwater resources.[724]

~~478.~~557. Wells exist throughout the Project area. There are approximately 20 active wells within the right-of-way of Route Alternatives, and approximately 80 active domestic water wells within the proposed substation siting areas.[725] In addition, route alternatives studied in the DEIS cross several Wellhead Protection Areas (WHPAs) and Drinking Water Supply Management Areas (DWSMAs).[726] WHPAs are areas surrounding public water supply wells that contribute groundwater to the well.[727] DWSMAs are delineated areas within the WHPA and are managed in a wellhead protection plan.[728]

558. Overall impacts to groundwater resources are not anticipated because water supply needs will be limited and any effects on water tables would be localized and short term. Based on the small proportion of increased impervious surface area that will be created by Project components (i.e., substations and structure foundations), the Project will have minimal impacts on regional groundwater recharge.[729]

559. Flowing wells and borings are drilled holes that encounter an aquifer with sufficient natural pressure to force water above the ground surface, so that water will flow without pumping. Flowing artesian conditions exist when a low permeability confining layer, such as clay or shale, overlies the aquifer. This puts the groundwater under pressure because the material doesn't permit water to flow through it. When ground disturbing activities (for example, a well, boring, or installation of a foundation for a transmission line structure) breach the confining layer, it creates a pressure relief valve which allows the water to rise above the top

[724] Ex. Xcel-2 at 156 (RP Application).
[725] Ex. EERA-12 at 158–59 (DEIS).
[726] Ex. EERA-12 at 159 (DEIS).
[727] Ex. EERA-12 at 159 (DEIS).
[728] Ex. EERA-12 at 159 (DEIS).
[729] Ex. EERA-12 at 157 (DEIS).

of the aquifer. If the pressure in the aquifer is great enough to force water to rise above the land surface, artesian groundwater conditions occur.[730]

560. When an unexpected artesian condition is found, it can have a substantial impact that could compromise the condition and use of the area in which the flow is encountered and could cause challenges with construction of transmission line tower foundations along the routes. Artesian groundwater conditions, when unintentionally encountered or created through the breach of the confining layer, can cause excavation stability issues and uncontrolled release of groundwater at the ground surface and to surface waters. If uncontrolled, artesian groundwater conditions can be extremely difficult to repair and in some instances are un-repairable. However, subsurface investigations and construction in artesian groundwater conditions can be completed successfully provided the pressurized conditions and extents are identified, understood, and a plan implemented to manage pressurized groundwater conditions should they be encountered.[731]

561. Installation of structure foundations would require dewatering to enable construction activities. Dewatering would cause temporary draw down of existing groundwater levels and could cause erosion or sedimentation when the water is discharged.[732]

~~479.~~562. When concrete foundations are used some portion of the soluble components of the cement paste can leach into groundwater prior to the setting and hardening of the concrete. This will change the pH of groundwater around the surface of the concrete but is not expected to extend far from the concrete foundation.[733]

~~480.~~563. Indirect impacts to groundwater can be mitigated by avoiding or minimizing impacts to surface waters.[734] Measures to control soil erosion and sedimentation would be implemented during construction activities.[735] Potential impacts to groundwater are expected to be similar to across the entire Project.[736] The DEIS did not assess ground water ~~ecology and topography~~ at the regional level because impacts are anticipated to largely be independent of the route selected.[737]

[730] FEIS at 164.
[731] FEIS at 165.
[732] FEIS at 164.
[733] FEIS at 165.
[734] Ex. EERA-12 at 161 (DEIS).
[735] Ex. EERA-12 at 161 (DEIS).
[736] Ex. EERA-12 at 211 (DEIS).
[737] Ex. EERA-12 at 211 (DEIS).

564. Xcel Energy would conduct geotechnical evaluations prior to Project construction to identify locations where potential groundwater impacts could occur and coordinate with the MDNR~~, as necessary,~~ to confirm that ground disturbing activities such as geotechnical investigation and structure installation placement does not disrupt groundwater hydrology.[738] The Applicant noted that if shallow depths to groundwater resources are identified during geotechnical design of the project, specialty structures with wider, shallower foundations could be used. EERA staff recommends these locations be shown on the plan and profile submitted for the project, and that appropriate mitigation measures be identified as part of the filing.[739]

565. The Applicant would assess any wells identified within the ROW during project construction to determine if they are open, and seal them, if necessary, in accordance with MDH requirements. They would also place project components, so they adhere to the MDH isolation distance from a water supply well rule.[740]

[738] ~~Ex. EERA 12 at 160 (DEIS)~~FEIS at 165.
[739] FEIS at 165.
[740] FEIS at 165.

2) Surface Water

~~481.~~566. The Project is within the Upper Mississippi and Minnesota River Basins. Surface waters in the route width include rivers and streams (watercourses) and lakes and ponds (waterbodies).[741] Many of these watercourses and waterbodies are designated as public watercourses and public water basins by MDNR in the public waters inventory (PWI).[742]

~~482.~~567. Major watercourses in the route width include: Meadow Creek; the Cottonwood River; the Redwood River; the Yellow Medicine River; the Crow River; the Clearwater River; the Minnesota River; and the Mississippi River[743] Several larger waterbodies within the route width include Belle Lake, Locke Lake, Lynden Lake, Wilcox Lake, Long Lake, and Sather Lake, among others.[744]

~~483.~~568. Table 6 below denotes the surface waters within the right-of-way and route widths of routes studied in the DEIS.[745]

Table 6: Surface Waters

Route Segment	Length (mi)	National Hydrography Dataset Waterbodies			Public Water Inventory Basins			National Hydrography Dataset Watercourse Types			Impaired Streams	National Hydrography Dataset Watercourses	Public Water Inventory Streams
								Perennial Stream/River	Intermittent Stream/River	Other Watercourse Type			
		Crossing Count	Within right-of-way Area (ac)	Within Route Width Area (ac)	Crossing Count	Within right-of-way Area (ac)	Within Route Width Area (ac)	Crossing Count	Crossing Count	Crossing Count	Crossing Count	Crossing Count	Crossing Count
A1 (Purple Route)	17.49	0	< 1	< 1	0	0	0	2	18	0	4	20	3
A2	17.58	0	0	0	0	0	0	2	15	0	4	17	4
A3 (Blue Route)	14.59	0	< 1	2	0	0	0	2	13	0	3	15	3
A4	18.14	1	< 1	4	0	< 1	5	3	17	0	3	20	3
A5	15.11	0	< 1	< 1	0	0	0	2	15	0	3	17	3
A6	14.54	0	< 1	1	0	0	0	2	14	0	3	16	3
A7	14.56	0	< 1	1	0	0	0	2	10	0	3	12	3
B1 (Purple Route)	45.41	2	1	9	0	0	0	4	7	22	10	33	16
B2	51.03	3	4	33	1	3	27	3	14	19	11	36	17
B3	46.92	1	1	6	0	0	0	4	5	21	10	30	16
B4 (Blue Route)	75.26	2	2	11	1	4	25	8	11	23	12	42	19
C1 (Purple Route)	55.98	0	0	2	0	0	0	2	4	34	5	40	11
C2	58.53	0	< 1	4	0	0	0	0	8	28	5	36	8

[741] Ex. EERA-12 at 176 (DEIS).
[742] Ex. EERA-12 at 176 (DEIS).
[743] Ex. EERA-12 at 175–76 and Map 14 (DEIS).
[744] Ex. EERA-12 at 176 and Map 14 (DEIS).
[745] Ex. EERA-12 at Appendix E (DEIS; Route Alternatives Data Analysis Tables).

Route Segment	Length (mi)	National Hydrography Dataset Waterbodies			Public Water Inventory Basins			National Hydrography Dataset Watercourse Types			Impaired Streams	National Hydrography Dataset Watercourses	Public Water Inventory Streams
								Perennial Stream/River	Intermittent Stream/River	Other Watercourse Type			
		Crossing Count	Within right-of-way Area (ac)	Within Route Width Area (ac)	Crossing Count	Within right-of-way Area (ac)	Within Route Width Area (ac)	Crossing Count	Crossing Count	Crossing Count	Crossing Count	Crossing Count	Crossing Count
C3	57.9	0	< 1	4	0	0	0	2	10	39	6	51	9
C4 (Blue Route)	28.61	0	< 1	4	0	0	0	0	8	14	4	22	6
D1 (Purple Route)	9.06	1	3	13	0	0	0	0	3	4	2	7	2
D2	9.24	0	< 1	2	0	0	0	0	6	3	2	9	6
D3	10.1	1	3	13	0	0	0	0	5	4	2	9	2
D4 (Blue Route)	10.78	0	0	< 1	0	0	3	3	4	4	2	11	2
D5	10.86	0	0	1	0	0	3	3	4	7	2	14	2
D6	11.39	0	0	< 1	0	0	3	3	3	4	2	10	2
D7	12.76	0	0	< 1	0	0	3	3	2	4	2	9	2
E1 (Purple Route)	17.68	2	3	22	0	0	0	0	7	5	0	12	1
E2 (Blue Route)	16.55	2	2	9	0	0	2	0	2	2	1	4	1
F1 (Purple Route)	2.24	2	5	40	0	0	0	0	0	0	0	0	0
F2	2.28	2	4	15	0	0	0	0	0	0	0	0	0
F3	2.71	0	< 1	11	0	0	0	0	0	0	0	0	0
F4 (Blue Route)	2.7	2	3	14	1	1	5	0	0	0	0	0	0
F5	2.43	0	< 1	1	0	0	0	0	0	0	0	0	0
F6	2.65	0	< 1	6	0	0	0	0	0	0	0	0	0
F7	2.14	0	< 1	6	0	0	0	0	0	0	0	0	0
F8	2.69	0	< 1	1	0	0	0	0	0	0	0	0	0
G1 (Blue Route)	25.43	1	1	10	0	0	0	2	2	2	3	6	4
G2	24.63	1	1	26	0	0	10	2	2	2	3	6	4
G3 (Purple Route)	22.7	1	1	30	0	< 1	11	6	2	3	6	11	8
G4	25	1	1	27	0	< 1	11	3	2	3	2	8	4
G5	24.25	1	1	30	0	< 1	11	6	3	4	6	13	10
G6	22.74	1	1	30	0	< 1	11	6	2	3	6	11	8

~~484.~~569. There are no trout streams, state-designated outstanding resource value waters, or state and federal wild and scenic and recreational rivers crossed by the route segments in Region A.[746] Except for Route Segment A2, waterbodies are present within the route width of all route segments in Region A.[747] One waterbody in Region A is designated as PWI basin, which is within the route width of Route Segments A4, but is not crossed by the Project.[748] The total count of watercourse crossings by the anticipated alignments of route segments in Region A varies between 12 and 20. All route segments cross three to four PWI watercourses

[746] Ex. EERA-12 at ~~215~~ 176 (DEIS).
[747] Ex. EERA-12 at 215 (DEIS).
[748] Ex. EERA-12 at 215 (DEIS).

including the Cottonwood River, Meadow Creek, and three unnamed streams. Route Segments A1 (Purple Route) and A2 parallel an unnamed stream reach (connected to Lake Marshall, a public water basin) on the eastern edge of the route width. No in-water work would occur.[749]

~~485.~~ There are no trout streams crossed by the route segments in Region B.[750] All route segments in Region B cross the Minnesota River, which is a state-designated outstanding resource value water and a state-designated wild and scenic river, where existing transmission lines are present.[751] Both crossing locations (the western crossing for Route Segments B1 (Purple Route), B2, and B3) and the eastern crossing (Route Segment B4 (Blue Route))would be parallel to existing transmission lines but would likely require additional tree clearing.[752] The total count of watercourse crossings by the anticipated alignments of route segments in Region B varies between 30 and 42, most of which are classified as ephemeral streams. All route segments cross the Minnesota River, a state-designated outstanding resource value water and state water trail. The route segments all cross a similar number of PWI watercourses (between 16 and 19 each), including the Minnesota River, Cottonwood River, Yellow Medicine River, and Redwood River. Route Segments B2 and B4 (Blue Route) cross a PWI basin: Tyson Lake or Doubs Lake and would span the waterbodies. Route Segment B4 (Blue Route) crosses more perennial watercourses (8), more PWI watercourses (19), a PWI basin (Doubs Lake), and more total waterways (42). Also, Wabasha Creek, a PWI watercourse, parallels Route Segment B4 (Blue Route). All waterbodies and watercourses could be spanned by the project. No in-water work would occur.[753]

~~486.~~570. There are no trout streams, state-designated outstanding resource value waters, or state and federal wild and scenic and recreational rivers crossed by the route segments in Region C.[754] The major PWI watercourses crossed in Region C include the Crow River South Fork, Chetomba Creek, Hawk Creek, and Belle Creek.[755] The total count of watercourse crossings by the anticipated alignments of the route segments in Region C varies between 22 and 51, most watercourses are classified as ephemeral streams. The route segments in Region C have between six and eleven PWI watercourse crossings (Crow River South Fork, Chetomba Creek, Hawk Creek, and Belle Creek) and between four and six impaired watercourse crossings Route Segment C4 (Blue Route) has the fewest watercourse crossings

[749] FEIS at 235.
[750] Ex. EERA-12 at 259 (DEIS).
[751] Ex. EERA-12 at 259 (DEIS).
[752] Ex. EERA-12 at 259 (DEIS).
[753] FEIS at 282.
[754] Ex. EERA-12 at 299 (DEIS).
[755] Ex. EERA-12 at 300 (DEIS).

while Route Segment C3 has the most watercourse crossings. Two unnamed agricultural drainageways parallel Route Segment C3 No waterbodies are crossed, and watercourses could be spanned by the project. No in-water work would occur.[756]

~~487.~~571. There are no trout streams crossed by the route segments in Region D. All route segments in Region D cross the Crow River, which is a state-designated outstanding resource value water and a state-designated wild and scenic river.[757] The route width of each route segment within Region D includes one waterbody.[758] All route segments in Region D have two impaired watercourse crossings, with the exception of Route Segment D2 which has six impaired watercourse crossings.[759] The total count of watercourse crossings by the anticipated alignments of route segments in Region D varies between seven to 14 watercourses, most are classified as intermittent streams. Route Segments D1 (Purple Route) and D3 cross the least watercourses and avoid crossing the PWI basin (Half Moon Lake). All route segments cross the Crow River, a state-designated outstanding resource value water. All waterbodies and watercourses could be spanned by the project. No in-water work would occur.[760]

~~488.~~572. There are no trout streams, state-designated outstanding resource value waters, or state and federal wild and scenic and recreational rivers crossed by the route segments in Region E.[761] Each route segment includes two waterbodies within its route width.[762] Route Segment E1 (Purple Route) has three times as many watercourse crossings as Route Segment E2 (Blue Route). Most of the watercourses crossed are intermittent or ephemeral streams. An unnamed tributary of Eden Brook parallels the anticipated alignment of Route Segment E1 within the route width. If the anticipated alignment parallels this stream, the potential for impacts (such as erosion or sedimentation) during construction could increase. All waterbodies and watercourses could be spanned by the project. No in-water work would occur.[763]

~~489.~~573. Route segments in Region F cross watercourses, trout streams, state-designated outstanding resource value waters, and state-designated wild, scenic, and recreational rivers.[764] Route Segments F1 (Purple Route), F2, and F4 (Blue Route)

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[756] FEIS at 323.
[757] Ex. EERA-12 at 328 (DEIS).
[758] Ex. EERA-12 at 329 (DEIS).
[759] Ex. EERA-12 at 329 (DEIS).
[760] FEIS at 351.
[761] Ex. EERA-12 at 353 (DEIS).
[762] Ex. EERA-12 at 353 (DEIS).
[763] FEIS at 376.
[764] Ex. EERA-12 at 382 (DEIS).

include two waterbodies within their route width.[765] Route Segments F1 (Purple Route), F2, and F4 (Blue Route) include waterbodies (2 each) in the route width. Of the waterbodies in the route width, Route Segment F4 (Blue Route) includes a waterbody (School Section Lake) designated as a PWI basin. All waterbodies and watercourses could be spanned by the project. No in-water work would occur.[766]

~~490.~~574. Two trout streams, Johnson Creek and Fairhaven Creek, are crossed by the route segments in Region G.[767] Region G route segments also cross the Mississippi River, which is a state-designated outstanding resource value water and a state-designated wild, scenic, and recreational river.[768] All route segments, with the exception of Route Segment G4, cross a designated trout stream.[769] The total count of watercourse crossings by the anticipated alignments of route segments within Region G varies between 6 and 13, most of which are classified as perennial streams. All route segments cross the Mississippi River, a state-designated outstanding resource value water. All route segments, except G4, cross a trout stream. Route segments cross between 4 and 10 PWI watercourses each, including the Mississippi River, Fairhaven Creek, Three Mile Creek, Clearwater River, and three unnamed streams. Each route segment includes one waterbody within the route width. Route Segments G1 (Blue Route) and G2 cross the fewest perennial watercourses (2 each), total watercourses (6 each), and PWI watercourses (4 each). All waterbodies and watercourses could be spanned by the project. No in-water work would occur.[770]

~~491.~~575. The crossing distance for all watercourses and waterbodies in the Project area is less than 1,000 feet (the typical transmission line span for the project), meaning that the Project is expected to be able to span all watercourses and waterbodies.[771] Thus, no structures would be placed within these features, and no direct impacts on watercourses and waterbodies are anticipated.[772] Removal of vegetation and soil cover could result in short-term water quality impacts due to increased turbidity.[773] Construction impacts could also remove riparian or shoreline forest areas within the right-of-way that currently assist with water attenuation and decreasing erosion impacts.[774]

[765] Ex. EERA-12 at 382 (DEIS).
[766] FEIS at 405.
[767] Ex. EERA-12 at 415 (DEIS).
[768] Ex. EERA-12 at 415 (DEIS).
[769] Ex. EERA-12 at 415 (DEIS).
[770] FEIS at 441.
[771] Ex. EERA-12 at 178 (DEIS).
[772] Ex. EERA-12 at 178 (DEIS).
[773] Ex. EERA-12 at 178 (DEIS).
[774] Ex. EERA-12 at 178–79 (DEIS).

~~492.~~576. Multiple comments were received regarding the Project's crossing of the Mississippi River. MDNR prefers a crossing of the Mississippi River that uses an existing crossing (the Purple Route (Route G3) or Route Segment 246). Xcel Energy, however, supports the Blue/Preferred Route crossing of the Mississippi River because it reduces residential impacts as compared to the Purple Route and Route Segment 246. Xcel Energy stated that it will use a horizontal configuration for the Mississippi River crossing, particularly given that the Preferred Route is not an existing crossing. Xcel Energy also described the ways in which the Blue/Preferred Route avoids and minimizes impacts to sensitive resources on the southwest side of the Mississippi River that would be crossed by the Purple Route (*i.e.*, the Fish Creek Basin area). Xcel Energy further supports the Blue/Preferred Route in this area because it results in a better crossing of the North Fork of the Crow River (which is also a wild and scenic riverway)--crossing along an existing highway instead of a local road.[775]

~~493.~~577. Indirect impacts to surface waters could be avoided by prudent routing and implementation of applicable best management practices.[776] Mitigation measures are anticipated to prevent and minimize impacts to watercourses and waterbodies. Xcel Energy would obtain a National Pollutant Discharge Elimination System (NPDES) Construction Stormwater permit from the MPCA for construction of the project which requires development of a Stormwater Pollution Prevention Plan (SWPPP) that identifies best management practices to be used during construction to minimize erosion and sedimentation.[777] Per the stormwater permit, additional best management practices would be required for work near special waters which include impaired waters and trout streams.[778]

3) Wetlands

~~494.~~578. The Project could temporarily or permanently impact wetlands if they cannot be avoided through Project design. In most cases, wetlands can be spanned to avoid placing structures within the wetland.[779] When a wetland cannot be spanned, construction would occur within the wetland.[780]

~~495.~~579. The National Wetlands Inventory (NWI), as updated by MDNR, identifies numerous wetland complexes and small isolated wetlands throughout the route widths studied in the DEIS.[781] In general, wetlands are more prevalent in the

[775] Xcel Energy Response to Hearing Comments (Dec. 13, 2024).
[776] Ex. EERA-12 at 13 (DEIS).
[777] Ex. EERA-12 at 179 (DEIS).
[778] Ex. EERA-12 at 179 (DEIS).
[779] Ex. EERA-12 at 185 (DEIS).
[780] Ex. EERA-12 at 185 (DEIS).
[781] Ex. EERA-12 at 14 (DEIS)

northeast portion of the Project compared to the southwest portion. All route segments would intersect wetlands.[782]

~~496.~~580. One calcareous fen is located within five miles of the Purple Route; no fens are within five miles of either the Blue Route or the Preferred Route.[783] Calcareous fens are rare and distinctive peat-accumulating wetland that receive hydrology from groundwater that is rich in calcium and other minerals.[784]

~~497.~~581. Table 7 below denotes the total acres of wetlands within the right-of-way and route width of the route segments.[785]

Table 7. National Wetland Inventory Wetlands

Route Segment	Length (mi)	All	Forested		Non Forested		Total	
		Crossing (> 1,000 ft span) Count	Within right-of-way Area (ac)	Within Route Width Area (ac)	Within right-of-way Area (ac)	Within Route Width Area (ac)	Within right-of-way Area (ac)	Within Route Width Area (ac)
A1 (Purple Route)	17.49	0	1	17	7	68	8	85
A2	17.58	0	1	18	6	53	7	71
A3 (Blue Route)	14.59	0	2	11	6	43	7	55
A4	18.14	1	1	7	11	97	11	104
A5	15.11	0	1	13	8	52	9	65
A6	14.54	0	2	18	6	52	8	70
A7	14.56	0	2	16	5	45	7	61
B1 (Purple Route)	45.41	1	1	16	25	210	26	226
B2	51.03	0	3	25	21	189	24	214
B3	46.92	1	3	18	26	193	28	211
B4 (Blue Route)	75.26	4	4	46	49	453	53	499
C1 (Purple Route)	55.98	0	2	14	20	187	22	201
C2	58.53	2	4	20	34	215	38	234
C3	57.9	0	4	17	17	112	21	130
C4 (Blue Route)	28.61	0	2	9	17	112	20	121
D1 (Purple Route)	9.06	0	2	13	11	73	13	87
D2	9.24	0	2	14	8	70	10	83
D3	10.1	0	2	20	12	83	14	103
D4 (Blue Route)	10.78	0	2	12	7	57	9	69
D5	10.86	0	2	16	8	78	10	94
D6	11.39	0	2	12	7	66	9	78
D7	12.76	0	1	13	7	57	8	70
E1 (Purple Route)	17.68	0	1	10	27	190	28	201
E2 (Blue Route)	16.55	1	4	33	29	224	33	257
F1 (Purple Route)	2.24	0	0	0	4	42	4	42
F2	2.28	0	1	6	4	27	6	32
F3	2.71	0	0	0	1	20	1	20
F4 (Blue Route)	2.7	0	0	0	4	29	4	29
F5	2.43	0	0	0	< 1	13	< 1	13
F6	2.65	0	0	0	1	19	1	19
F7	2.14	0	0	0	< 1	15	< 1	15

[782] Ex. EERA-12 at 14 (DEIS)
[783] Ex. EERA-12 at 184 (DEIS); Ex. Xcel-19 at 8:3–4 (Langan Surrebuttal).
[784] Ex. EERA-12 at 184 (DEIS).
[785] Ex. EERA-12 at Appendix E (DEIS, Route Alternatives Data Analysis Tables).

Route Segment	Length (mi)	All	Forested		Non Forested		Total	
		Crossing (> 1,000 ft span) Count	Within right-of-way Area (ac)	Within Route Width Area (ac)	Within right-of-way Area (ac)	Within Route Width Area (ac)	Within right-of-way Area (ac)	Within Route Width Area (ac)
F8	2.69	0	0	0	< 1	13	< 1	13
G1 (Blue Route)	25.43	1	3	23	23	177	27	201
G2	24.63	1	3	24	20	189	23	213
G3 (Purple Route)	22.7	2	11	80	24	203	34	283
G4	25	2	7	72	28	260	35	332
G5	24.25	2	5	48	33	260	38	308
G6	22.74	1	2	29	23	201	25	230

582. Transmission line and substation sites could temporarily or permanently impact wetlands if they cannot be avoided through project design. In most cases, wetlands can be spanned to avoid placing structures within the wetland. When a wetland cannot be spanned, construction would occur within the wetland. Transmission line structure construction typically includes vegetation clearing, movement of soils, and construction traffic. These activities could alter or impair wetland function. Even small changes in hydrology (for example, periods of inundation, changes in flow, sedimentation) can impair wetland function. Any wetland that would receive permanent HVTL infrastructure would also be impacted long term during operation of the project due to equipment access through the wetland for maintenance.[786]

583. Wetlands can also be impacted by soil erosion and sediment deposition during construction. Sedimentation and ground disturbance in wetlands can make them more susceptible to establishment of invasive plant species, such as reed canary grass, which would adversely impact wetland function by reducing vegetative biodiversity and altering wildlife habitat.[787]

584. Forested wetlands within the transmission line ROW would likely undergo a permanent change of vegetation type as a result of the project. Transmission lines cannot be safely or reliably operated with trees growing within their ROW. Therefore, existing trees must be removed throughout the ROW, including within forested wetlands. The applicant may be required to provide wetland mitigation for the conversion of forested wetlands to non-forested wetlands that occurs as a result of the project.[788]

585. Commission route permits include the following measures to mitigate impacts to wetlands: • Develop wetland impact avoidance measures and implement them during construction of the project. • Space and place the structures at variable distances to span and avoid wetlands. • Limit unavoidable wetland impacts as a result

[786] FEIS at 191.
[787] FEIS at 191.
[788] FEIS at 191.

of the placement of structures to the immediate area around the structures. Construct in wetland areas during frozen ground conditions where practicable and according to permit requirements by the applicable permitting authority. • Use wooden or composite mats to protect wetland vegetation when construction during winter is not possible. • Contain soil excavated from the wetlands and not place it back into the wetland. • Access wetlands using the shortest route possible in order to minimize travel through wetland areas and prevent unnecessary impacts. • Not place staging or stringing set up areas within or adjacent to wetlands, as practicable. Assemble structures on upland areas before they are brought to the site for installation. • Restore wetland areas disturbed by construction activities to pre-construction conditions in accordance with the requirements of applicable state and federal permits or laws and landowner agreements. • Meet the USACE, DNR, Minnesota BWSR, and local units of government wetland requirements.

586. In their Natural Heritage Review response, the DNR recommended the following to minimize potential impacts to water resources, including wetlands: • Employing directional boring techniques to install cable under the area or attaching the cable to roadway bridges passing over such areas. • Work in watercourses should be conducted during low flow whenever possible. • If possible, conduct the work under frozen ground conditions. • Wetland basins, lake beds, and stream/riverbeds should be restored to preconstruction contours. The work should not promote wetland drainage. • Appropriate wildlife-friendly erosion control measures, such as fabric, straw bales, mulch, and silt fences, should be used to prevent sedimentation of adjacent wetlands, lakes, or watercourses. • Impacts to existing vegetation should be kept to a minimum. Disturbed soil areas should be reseeded with native species suitable to the local habitat immediately upon project completion. • In order to avoid impacting or altering the Gennessee 21 fen, the applicant would need to obtain a no-effect concurrence decision from the DNR prior to construction should a route be chosen that is within 5 miles of the fen. The applicant would need to demonstrate that any temporary or permanent disturbance from any project-related activities, including dewatering (amount, timing, and duration), are avoided. In their comment on the draft EIS, the DNR requests a special permit condition requiring that the applicant must work with the DNR to determine if any impacts to the fen will occur during any phase of the project. If the project is anticipated to impact any calcareous fens, the applicant must develop a Calcareous Fen Management Plan in coordination with the DNR, as specified in Minn. Stat. § 103G.223.[789]

~~498.~~587. Impacts to wetlands would be avoided or minimized to the extent practicable. The Project is designed to span wetlands where feasible, and substations

[789] FEIS at 193.

would be sited to avoid impacts to wetlands.[790] Where impacts to wetlands cannot be avoided by transmission line structures and clearing of trees within the 150-foot-wide right-of-way, several mitigation strategies can be implemented, including:

- Scheduling construction during frozen conditions;
- Use of construction mats when construction during frozen conditions is not feasible;
- Use of all-terrain construction equipment that is designed to minimize soil impact in damp areas;
- Use of the shortest route to the pole location in the wetland; and
- Assembling structures in upland areas, when feasible, before they are brought to the site for installation.[791]

4) Impaired Waters

~~499.~~588. MPCA is responsible for assessing the water quality of Minnesota's waters and listing impaired waters as required by the federal Clean Water Act.[792] Impaired waters are crossed by the Purple and Blue Routes.[793] Most of the impairments are related to aquatic life, mercury in fish tissue, sediment, bacteria, insecticides, and nutrients/eutrophication.[794] Of the impaired waters crossed by the Project, the only applicable impairment parameter is turbidity and total suspended solids.[795]

~~500.~~589. Impacts to impaired waters would be associated with the soils from areas disturbed during construction being washed by stormwater into adjacent waters during rainstorm events.[796] These impacts would be temporary and would not significantly alter water quality conditions due to appropriately installed best management practices.[797]

~~501.~~590. The avoidance and minimization measures discussed with respect to surface waters also apply to impaired waters.[798]

[790] Ex. EERA-12 at 186 (DEIS).
[791] Ex. Xcel-2 at 171–72 (RP Application).
[792] *See* 33 U.S.C. § 1313.
[793] Ex. EERA-12 at 177 (DEIS).
[794] Ex. EERA-12 at 177 (DEIS).
[795] Ex. Xcel-2 at 169 (RP Application).
[796] Ex. Xcel-2 at 169 (RP Application).
[797] Ex. Xcel-2 at 169 (RP Application).
[798] Ex. EERA-12 at 179 (DEIS).

5) Floodplains

~~502.~~591. The Purple and Blue Routes cross Federal Emergency Management Administration (FEMA) designated 100-Year and 500-Year floodplains.[799] Waterbodies associated with the 100-year floodplains crossed by the Project include the Mississippi River, Clearwater River, Crow River, Grove Creek, three unnamed perennial ditches, one unnamed intermittent ditch, Hawk Creek, Minnesota River, one unnamed stream, Yellow Medicine River, Threemile Creek, Redwood River, Meadow Creek, Half Moon Lake Creek, and Cottonwood River.[800] FEMA-designated 500-Year floodplains are less prevalent and primarily located along wide, bottom-land terraces associated with large rivers along the route options.[801] Waterbodies associated with the 500-year floodplains crossed by the Project are the Minnesota River, one unnamed intermittent stream, and Meadow Creek.[802]

~~503.~~592. The Project is designed to span waterbodies and floodplains where practicable and to minimize the number of structures in surface water resources where these resources cannot be spanned.[803] Impacts to floodplains during construction would include soil disturbance and removal of vegetation.[804] Vegetation clearing within a floodplain, especially tree removal, can greatly destabilize the area, make it more prone to ongoing erosion and sediment issues, and further contribute to water quality issues.[805]

593. There are approximately ten floodplain crossings that exceed 1,000 feet.[806] The Project might require that transmission line structures be placed within FEMA-designated floodplain. However, the placement of transmission line structures in floodplains is not anticipated to alter the flood storage capacity of the floodplain based on the minimal size of individual transmission line structures.[807] No impacts to the overall function of watersheds are expected. Any impacts that might occur from installation of structure foundations would be minimal and localized.[808]

~~504.~~594. The applicant would design the top of concrete for the structure foundations to be one foot above the 100-year floodplain elevation anywhere structures are installed in areas prone to flooding. If flooding were to exceed the

[799] Ex. EERA-12 at 176 (DEIS).
[800] Ex. EERA-12 at 176 (DEIS).
[801] Ex. Xcel-2 at 167 (RP Application).
[802] Ex. EERA-12 at 176 (DEIS).
[803] Ex. EERA-12 at 179 (DEIS).
[804] Ex. EERA-12 at 179 (DEIS).
[805] FEIS at 184.
[806] Ex. EERA-12 at 179 (DEIS).
[807] Ex. EERA-12 at 179 (DEIS).
[808] FEIS at 99.

100-year flood level, the structures and foundations have the resilience to resist the flood loads. This includes flood-prone areas in Wright County.[809]

~~505.~~595. Substations would not be sited within floodplains; therefore, no impacts on floodplains are anticipated from construction and operation of the Project substations and no mitigation measures are proposed.[810]

~~vii.~~viii. Flora

~~506.~~596. Vegetation resources across the Project are dominated by herbaceous agricultural vegetation and crops including corn, soybeans, potatoes, forage, and sugar beets.[811] According to the National Landcover Database (NLCD), areas of natural vegetation including wetlands and native plant communities, such as prairies and forests, are scattered across the Project area with the highest concentrations of forested areas in Region G near the northern end of the Project.[812]

~~507.~~597. Construction of the Project would result in short-term impacts on existing vegetation, including localized physical disturbance and soil compaction.[813] Construction activities involving establishment and use of access roads, staging, and stringing areas would also have short-term impacts on vegetation by concentrating surface disturbance and equipment use.[814] Vegetation would be permanently removed where structures would be installed.[815]

~~508.~~598. The applicant would permanently convert forested areas to low-stature vegetation by clearing woody vegetation throughout the entire ROW where it occurs. The clearing of woody vegetation within the ROW would result in the widening of existing corridors or bisecting (fragmenting) forests to establish new ROW. However, given the predominance of agricultural vegetation in the region, forest fragmentation is anticipated to be minimal for the project.[816]~~Construction would result in long-term impacts to vegetation by permanently removing high growing and forested vegetation within the right-of-way where present.[817] However, given the predominance of agricultural vegetation in the region, forest fragmentation is anticipated to be minimal for the Project.[818]~~

[809] FEIS at 155.
[810] Ex. EERA-12 at 179 (DEIS).
[811] Ex. EERA-12 at 182 (DEIS).
[812] Ex. EERA-12 at 182 (DEIS).
[813] Ex. EERA-12 at 182 (DEIS).
[814] Ex. EERA-12 at 182 (DEIS).
[815] FEIS at 188.
[816] FEIS at 188.
[817] ~~Ex. EERA-12 at 182 (DEIS).~~
[818] ~~Ex. EERA-12 at 182 (DEIS).~~

~~509.~~599. Conversion from forest to open habitats in the right-of-way could have indirect impacts on native vegetation by altering environmental conditions, such as light penetration; this could alter the vegetation community adjacent to the right-of-way and increase the potential spread of noxious weeds and other non-native species.[819] Activities that could potentially lead to the introduction of noxious weeds and other non-native species include ground disturbance that leaves soils exposed for extended periods, introduction of topsoil contaminated with weed seeds, vehicles importing weed seed, and conversion of landscape type, particularly from forested to open settings.[820]

~~510.~~600. Most of the existing vegetation in the right-of-way across all of the regions consists of herbaceous agricultural vegetation.[821] Table 8 below summarizes the landcover types within the right-of-way of each route segment.[822]

Table 8. Summary of landcover types within right-of-way (acres in right-of-way)

Region	Route Segment	Length (mi)	Agricultural (cultivated crops; hay and pasture)	Forest (upland and wetland)	Herbaceous (upland and wetland)	Developed (low-med-high intensity; open space)
A	A1 (Purple Route)	17.49	197	0	12	110
	A2	17.58	193	0	14	113
	A3 (Blue Route)	14.59	219	5	2	39
	A4	18.14	259	5	6	60
	A5	15.11	218	1	12	43
	A6	14.54	185	3	4	73
	A7	14.56	177	3	2	83
B	B1 (Purple Route)	45.41	665	2	30	127
	B2	51.03	695	1	24	203
	B3	46.92	615	2	27	208
	B4 (Blue Route)	75.26	1,082	7	50	225
C	C1 (Purple Route)	55.98	827	< 1	8	183
	C2	58.53	740	1	19	304
	C3	57.9	913	1	5	133
	C4 (Blue Route)	28.61	354	1	5	161
D	D1 (Purple Route)	9.06	129	1	3	30
	D2	9.24	128	1	2	38
	D3	10.1	148	< 1	4	29
	D4 (Blue Route)	10.78	152	< 1	5	39
	D5	10.86	152	1	5	40
	D6	11.39	151	< 1	5	51
	D7	12.76	186	1	3	42
E	E1 (Purple Route)	17.68	275	3	13	31

[819] Ex. EERA-12 at 182 (DEIS).
[820] Ex. EERA-12 at 182 (DEIS).
[821] Ex. EERA-12 at 14 (DEIS).
[822] Ex. EERA-12 at Appendix E (DEIS, Route Alternatives Data Analysis Tables).

Region	Route Segment	Length (mi)	Agricultural (cultivated crops; hay and pasture)	Forest (upland and wetland)	Herbaceous (upland and wetland)	Developed (low-med-high intensity; open space)
	E2 (Blue Route)	16.55	211	3	8	79
F	F1 (Purple Route)	2.24	20	1	< 1	17
	F2	2.28	27	1	1	12
	F3	2.71	39	< 1	< 1	8
	F4 (Blue Route)	2.7	46	< 1	1	1
	F5	2.43	27	1	< 1	17
	F6	2.65	44	< 1	0	2
	F7	2.14	17	1	< 1	21
	F8	2.69	35	1	0	14
G	G1 (Blue Route)	25.43	281	29	14	135
	G2	24.63	261	29	14	140
	G3 (Purple Route)	22.7	256	44	19	90
	G4	25	297	30	24	101
	G5	24.25	263	41	23	111
	G6	22.74	257	36	19	98

~~511.~~601. Mitigation and minimization measures for potential impacts to vegetation resources are standard Commission route permit conditions included in Section 5.3.10 of the Sample Route Permit~~.~~[823] and include: • Minimize number of trees to be removed in selecting the ROW specifically preserving to the maximum extent practicable windbreaks, shelterbelts, living snow fences, and vegetation in areas such as trail and stream crossings where vegetative screening could minimize aesthetic impacts; • Remove tall growing species located within the transmission line ROW that endanger the safe and reliable operation of the transmission line. Leave undisturbed, to the extent possible, existing low growing species in the ROW or replant such species in ROW to blend the difference between the ROW and adjacent areas, to the extent that the low growing vegetation that will not pose a threat to the transmission line or impede construction; • Employ BMPs to avoid the potential introduction and spread of invasive species on lands disturbed by construction activities. Develop an Invasive Species Prevention Plan and file with the Commission prior to construction. Take all precautions against the spread of noxious weeds during construction. Site appropriate seed certified to be free of noxious weeds should be used and the extent possible, native seed mixes should be used; • Restrict pesticide use to those pesticides and methods of application approved by the Minnesota Department of Agriculture, DNR, and the U.S. EPA. Selective foliage or basal application shall be used when practicable.[824]

~~[823] Ex. EERA 12 at Appendix F (DEIS, Sample Route Permit).~~

[824] FEIS at 189.

~~512.~~602. Xcel Energy filed a draft vegetation management plan with the RP Application.[825] No comments were provided on that plan as part of this proceeding.

603. Xcel Energy has committed to implementing mitigation measures to minimize the potential for the introduction or spread of noxious weeds and invasive species.[826] These measures include: • Disturbed areas would be revegetated using weed-free seed mixes and weed-free straw and hay for erosion control; • Invasive species/noxious weeds would be removed via herbicide or manual means in accordance with the easement conditions and landowner restrictions; • Where possible, the ROW could be mowed before noxious weeds and invasive species go to seed, if present; • Construction vehicles would be inspected and cleaned to remove dirt, mud, plants, and debris from vehicles prior to arriving at and leaving construction sites.[827]

~~513.~~604. These above BMPs would be included in the project's Vegetation Management Plan, which the Applicant would prepare in coordination with applicable agencies prior to construction, as provided in the Applicant's route permit application. Furthermore, the Applicant, in coordination with landowners, would implement integrated vegetation management plans associated with its existing pollinator initiative, which was created to enhance pollinator habitat; these plans minimize chemical use by avoiding broadcast applications and employ spot treatments for control of invasive species. Finally, all revegetation would be subject to SWPPP requirements and monitored until the requirements are met.[828]

~~viii.~~ix. *Fauna*

605. Wildlife inhabiting in the vicinity of the Project is typical of those found in disturbed habitats associated with agriculture and rural and suburban residential development.[829] Watercourses and waterbodies and areas of natural vegetation, such as forest, wetlands, and open herbaceous areas also provide habitat for wildlife in the area.[830] Suitable habitat for migratory birds is present throughout the Project's landscapes.[831] Typical wildlife species inhabiting the route width include mammals such as deer, fox, squirrels, and racoons; songbirds, such as robins and red-winged blackbirds; waterfowl, such as eagles and wood ducks; reptiles, such as garter snakes

[825] Ex. Xcel-7 at Appendix K (RP Application, Draft Vegetation Management Plan).
[826] Ex. EERA-12 at 183–184 (DEIS).
[827] FEIS at 190.
[828] FEIS at 190.
[829] Ex. EERA-12 at 187 (DEIS).
[830] Ex. EERA-12 at 187(DEIS).
[831] Ex. EERA-12 at 187 (DEIS).

and painted turtles; amphibians, such as American toads and western chorus frogs; and aquatic biota such as fish and mussels.[832]

~~514.~~606. The state of Minnesota is in the Central Flyway of North America. The Central Flyway is a bird migration route that encompasses the Great Plains of the U.S. and Canada. Migratory birds use portions of the Central Flyway as resting grounds during spring and fall migration, as well as breeding and nesting grounds throughout the summer. Suitable habitat for migratory birds is present throughout the project's landscapes. Many commenters on the draft EIS mentioned these migratory paths.[833]

~~515.~~607. Construction activities that generate noise, dust, or disturbance of habitat could result in short-term, indirect impacts on wildlife.[834] During construction of the Project, wildlife would generally be displaced within and adjacent to the right-of-way and footprints of associated facilities including the substations.[835] Clearing and grading activities could also affect birds' eggs or nestlings and small mammals that might be unable to avoid equipment.[836] Many wildlife species would likely avoid the immediate area during construction and possibly not return following construction; the distance that animals would be displaced depends on the species and the tolerance level of each animal. However, comparable habitat is available adjacent to the project.[837]

~~516.~~608. Potential impacts to avian species could occur due to collision with transmission line conductors.[838] The risk of collision is influenced by several factors including habitat, flyways, foraging areas, and bird size.[839] Electrocution can also occur; however, it is relatively more likely to occur in smaller sized lines. Electrocution occurs more frequently with larger bird species, such as hawks, because they have wider wingspans that are more likely to create contact with the conductors.[840]

~~517.~~609. Several lands that are preserved or managed for wildlife and associated habitat are scattered throughout the Project's local vicinity, including MDNR Wildlife Management Areas (WMAs), MDNR state game refuges, lakes that are part of MDNR Shallow Lakes Program, FWS Grassland Bird Conservation Areas, FWS

[832] Ex. EERA-12 at 187 (DEIS).
[833] FEIS at 194.
[834] Ex. EERA-12 at 188 (DEIS).
[835] Ex. EERA-12 at 188 (DEIS).
[836] Ex. EERA-12 at 188 (DEIS).
[837] FEIS at 195.
[838] Ex. EERA-12 at 189 (DEIS).
[839] Ex. EERA-12 at 189 (DEIS).
[840] FEIS at 195.

Waterfowl Production Areas, and National Audubon Society Important Bird Areas.[841] Table 9 below summarizes the wildlife resources within the route width of each route segment.[842]

[841] Ex. EERA-12 at 188 (DEIS) and Map 16 (Wildlife Resources).
[842] Ex. EERA-12 at Appendix E (DEIS, Route Alternatives Data Analysis Tables).

Table 9. Wildlife Management and Conservation Areas within route width

Region	Route Segment	National Audubon Society Important Bird Areas (acres)	MDNR			FWS		Wildlife Action Network (acres)			
			Shallow Wildlife Lakes (count)	WMAs (acres)	Game Refuge (acres)	Grassland Bird Conservation Area (acres)	Waterfowl Production Areas (acres)	High or Medium-High Rank	Medium Rank	Low or Medium-Low Rank	Total
A	A1 (Purple Route)	0	0	1	0	540	0	39	4	1,529	1,572
	A2	0	0	1	0	282	0	39	4	1,288	1,332
	A3 (Blue Route)	0	0	0	0	0	0	37	225	830	1,092
	A4	0	1	25	0	439	0	35	224	777	1,037
	A5	0	0	0	0	404	0	35	155	822	1,011
	A6	0	0	0	0	0	0	54	229	684	967
	A7	0	0	0	0	0	0	55	231	715	1,001
B	B1 (Purple Route)	523	0	43	0	753	7	30	217	75	322
	B2	523	4	3	0	484	7	30	320	267	617
	B3	526	0	43	0	686	7	30	218	81	328
	B4 (Blue Route)	432	1	19	0	2,692	0	74	160	79	313
C	C1 (Purple Route)	0	0	21	0	1,058	42	0	0	0	0
	C2	0	1	0	0	416	72	0	0	0	0
	C3	0	1	20	0	0	72	0	0	0	0
	C4 (Blue Route)	0	1	0	0	0	72	0	0	0	0
D	D1 (Purple Route)	0	0	0	0	< 1	0	0	0	0	0
	D2	0	0	0	0	< 1	0	0	0	0	0
	D3	0	0	0	0	117	0	0	0	0	0
	D4 (Blue Route)	0	1	0	0	117	0	0	0	0	0
	D5	0	1	0	0	117	0	0	0	0	0
	D6	0	1	0	0	157	0	0	0	0	0
	D7	0	1	0	0	< 1	0	0	0	0	0
E	E1 (Purple Route)	0	1	2	0	892	0	0	0	0	0
	E2 (Blue Route)	0	2	2	0	1,481	81	0	148	2	150
F	F1 (Purple Route)	0	0	0	4	287	0	0	0	0	0
	F2	0	0	0	35	291	0	0	0	0	0
	F3	0	0	0	28	340	0	0	0	0	0
	F4 (Blue Route)	0	1	0	62	242	0	0	0	0	0
	F5	0	0	0	4	209	0	0	0	0	0
	F6	0	0	0	28	232	0	0	0	0	0
	F7	0	0	0	4	274	0	0	0	0	0
	F8	0	0	0	4	234	0	0	0	0	0
G	G1 (Blue Route)	0	0	0	238	1,807	0	0	0	0	0
	G2	0	0	0	194	1,784	51	0	0	0	0
	G3 (Purple Route)	0	0	0	155	1,964	0	36	158	158	352
	G4	0	0	0	44	1,662	0	36	158	158	352
	G5	0	0	0	190	2,145	0	36	158	158	352
	G6	0	0	0	161	1,958	0	36	158	158	352

~~518.~~610. Xcel Energy designs its transmission line facilities to comply with Avian Power Line Interaction Committee recommended guidance to reduce the potential for avian electrocutions.[843] Xcel Energy will coordinate with MDNR and FWS to identify any wildlife migration pathways, particularly avian flyways crossed by the route options and to identify areas where the line should be marked to minimize avian interactions.[844] Conductor marking devices will be installed if required.[845] These marking devices may include bird flight diverters or air navigational markers.[846]

611. Mitigation and minimization measures for potential impacts to avian species, including federally and/or state protected avian species are standard Commission route permit conditions included in Section 5.3.16 of the Sample Route Permit.[847]

612. As summarized in its route permit application, the applicant has committed to the following measures to minimize the potential for impacts to wildlife and wildlife habitat: • Designing the route to avoid wildlife habitat identified during a constraints analysis completed during the routing process; • Implementation of several BMPs to minimize impacts to wildlife, including wildlife training for construction personnel, posted speed limits, spill prevention measures, and general construction housekeeping such as trash removal and maintaining a clean work area; • Implementation of specific BMPs for protected species that will also be beneficial to wildlife in general.

613. In their Natural Heritage Review response (MCE 2023-00890 (Appendix M); scoping comment #285) the DNR recommended use of downward facing lights on associated facilities to minimize potential impacts to wildlife. In addition, the DNR recommended that if LED lights are used, that the applicant follow the MnDOT Approved Products for luminaries, which limits the uplight rating to 0. A nominal color temperature below 2700K is preferable for wildlife; as such, the DNR also recommends choosing products that have the lowest number for backlight and glare.[848]

~~519.~~614. The DNR recommended use of wildlife friendly erosion control and that erosion control blankets be limited to "bio-netting" or "natural netting" types, and

[843] Ex. Xcel-2 at 179 (RP Application).
[844] Ex. Xcel-2 at 179 (RP Application).
[845] Ex. Xcel-2 at 60 (RP Application).
[846] Ex. Xcel-2 at 60 (RP Application).
[847] Ex. EERA-12 at 189 (DEIS) and Appendix F (Sample Route Permit).
[848] FEIS at 197.

specifically not products containing plastic mesh netting or other plastic components.[849]

~~ix.~~x. *Effects on Natural Environment: Summary of Comparison of Route Alternatives*

~~520.~~615. The Project crosses various soil types; potential impacts would primarily be short-term during construction, and Xcel Energy would implement the measures described in the Route Permit Application to avoid and minimize impacts. Impacts to soil are not anticipated to differ materially among route alternatives and depend primarily on soil type.

~~521.~~616. Route alternatives generally cross surface waters—most significantly, the Mississippi, Minnesota, and North Fork of the Crow Rivers. The Purple Route crosses the Mississippi and Minnesota Rivers following existing lines; the Blue/Preferred Route crosses the Mississippi River at a new location and the Minnesota River following an existing line. Although MDNR prefers the Purple Route's crossing of the Mississippi River, Xcel Energy supports the Blue/Preferred Route's crossing of the Mississippi River because of reduced residential impacts and the crossing at a narrow channel of the river, as well as avoidance of sensitive resources crossed by the Purple Route on the southwest side of the Mississippi River, including the previously disturbed Fish Creek Basin. Both the Preferred/Blue and Purple Routes cross the North Fork of the Crow Wing River along existing roads; the Preferred/Blue Route follows a state highway for this crossing, and the Purple Route follows a local road.[850]

~~522.~~617. In Region A, the incorporation of Route Segment 202 (*i.e.*, Route A6) would reduce impacts to the Cottonwood River.[851]

~~523.~~618. In Region B, Route Segments 211 and 219 reduce impacts to the Cottonwood River. Xcel Energy prefers Route Segments 211 because Route Segment 219 (supported by MDNR) would require additional angle structures, with associated costs. Although supported by MDNR, Route Segment 214 is not supported by the record because it would result in additional impacts on an existing BWSR easement.[852]

~~524.~~619. All route segments would intersect wetlands. Xcel Energy's Preferred Route includes 138 acres of NWI wetlands within its right-of-way, as compared to:

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[849] FEIS at 198.
[850] Xcel Energy Response to Hearing Comments (Dec. 13, 2024).
[851] Ex. Xcel-16 at 16:13-25 (Langan Direct).
[852] Ex. Xcel-16, Schedule 2 at 6 (Langan Direct).

145 acres within the MDNR proxy end-to-end route, 152 acres within the Blue Route, and 135 acres within the Purple Route.[853] The Preferred Route as modified by EERA staff intersects 134 acres of wetlands.

~~525.~~620. Most of the existing vegetation in the right-of-way across all of the route regions consists of herbaceous agricultural vegetation. Forested vegetation is limited, with most route segments having 1 acre or less within their right-of-way. Forested vegetation is most abundant in Region G.[854]

~~526.~~621. Along the route alternatives analyzed, wildlife ~~were~~are generally typical of those found in disturbed habitats associated with agriculture and rural and suburban residential development.[855]

~~527.~~622. Impacts on the natural environment with respect to air quality, climate change, geology, topography, floodplains, and groundwater do not vary significantly among route alternatives analyzed.[856]

F. Effects on Rare and Unique Natural Resources

~~528.~~623. Minnesota's HVTL routing factors require consideration of the Project's effect on rare and unique natural resources.[857]

~~529.~~624. Rare and unique natural resources encompass protected species and sensitive ecological resources.[858] The DEIS evaluated potential impacts to protected species by reviewing documented occurrences of these species within one mile of the Project area.[859] The DEIS also evaluated potential impacts to sensitive ecological resources, which could provide suitable habitat for protected species, by assessing the presence of these resources within the route width.[860]

[853] Xcel Energy Response to Hearing Comments (Dec. 13, 2024).
[854] Ex. EERA-12 at 15 (DEIS).
[855] Ex. EERA-12 at 15 (DEIS).
[856] Ex. EERA-12 at 7 (DEIS).
[857] Minn. Stat. § 216E.03, subd. 7(b)(1); Minn. R. 7850.4100, subp. F.
[858] Ex. EERA-12 at 163 (DEIS).
[859] Ex. EERA-12 at 163 (DEIS).
[860] Ex. EERA-12 at 163 (DEIS).

i. Protected Species

~~530.~~625. The FWS Information for Planning and Consultation (IPaC) online tool was queried on June 3, 2024, for a list of federally threatened and endangered species, proposed species, candidate species, and designated critical habitat that could be present within the vicinity of the Project.[861] The IPaC query identified six federal species that could potentially be within the Project area: northern long-eared bat (*Myotis septentrionalis*; endangered), prairie bush clover (*Lespedeza leptostachya*; threatened), tricolored bat (*Perimyotis subflavus*; proposed endangered), salamander mussel (*Simpsonaias ambigua*; proposed endangered), monarch butterfly (*Danaus plexippus*; candidate), and whooping crane (*Grus americana*; experimental population, non-essential).[862] The Project does not traverse federally designated critical habitat.[863] Impacts to federally protected species are anticipated to be minimal.[864]

626. The MDNR's Natural Heritage Inventory System (NHIS) database was queried in June 2024 (Barr License Agreement LA-2022-008), to determine if any state endangered, threatened, or special concern species have been documented within one mile of the Project area.[865] The NHIS database identified records for seven endangered, 11 threatened, and 28 special concern species within one mile of the Project area.[866] Some state threatened and endangered species have been documented within the right-of-way of various route segments within the regions, including the state and federally endangered Poweshiek skipperling butterfly (*Oarisma Poweshiek*; Region A), state endangered king rail bird (*Rallus elegans*; Region B), three state threatened mussel species: mucket (*Actinonaias ligamentina*; Region B), spike (*Eurynia dilatate*; Region B), and fluted-shell (*Lasmigona costata*; Region B), and the state threatened Blanding's turtle (*Emydoidea blandingii*; Regions F and G).[867]

627. All route segments within Region A have one documented record of a threatened/endangered species within a mile and several route segments have record of Poweshiek skipperling in the ROW but as explained in Section 6.6.7.1, it is unlikely to be found.[868]

628. Route Segment B4 (Blue Route) has the least number of documented records of threatened/endangered species within a mile (3) and none are in the ROW or route width. All other route segments have between eight and nine documented records

[861] Ex. EERA-12 at 164 (DEIS).
[862] Ex. EERA-12 at 164 (DEIS).
[863] Ex. EERA-12 at 164 (DEIS).
[864] Ex. EERA-12 at 168 (DEIS).
[865] Ex. EERA-12 at 164 (DEIS).
[866] Ex. EERA-12 at 164 (DEIS).
[867] Ex. EERA-12 at 12 and 165 (DEIS), and Appendix M (Threatened and Endangered Species).
[868] FEIS at 236.

of threatened/endangered species and a few have been documented within ROW or route width but they are mostly mussels so impacts would be avoided.[869]

~~531.~~ There are no documented records of threatened/endangered species within 1 mile of any of the route segments in Region C or D.[870]

629. Documented record of Blanding's turtle (state threatened) found within 1 mile of both route segments. Documented record of loggerhead shrike (state endangered) was also found in the ROW of Route Segment E2 (Blue Route). However, this is a mobile species and could be found in the ROW of either route segment.[871]

630. The Blanding's turtle (state threatened) has been documented within a mile of all route segments and within the ROW of Route Segments F1 (Purple Route), F2, F3, and F7.[872]

631. All route segments within Region G have two to three documented records of state threatened/endangered species within 1 mile.[873]

~~532.~~632. The primary means to mitigate potential impacts to federally and state protected species is to avoid routing through habitat used by these species.[874] Additionally, impacts can be mitigated by incorporating species (or species type) specific best management practices in coordination with the FWS and/or the MDNR.[875]

ii. Sensitive Ecological Resources

~~533.~~633. The MDNR Conservation Explorer online tool was used to assess the presence of sensitive ecological resources in the Project area.[876] The MDNR has established several classifications for sensitive ecological resources across the state, many of which are scattered throughout the Project area.[877] Some of these sensitive ecological resources intersect the right-of-way or are crossed by various route segments within the regions, including Sites of Biodiversity Significance (Regions A, B, C, E, and G), native plant communities (Regions A, B, and C), railroad rights-of-

[869] FEIS at 282.
[870] FEIS at 324, 352.
[871] FEIS at 377.
[872] FEIS at 406.
[873] FEIS at 442.
[874] Ex. EERA-12 at 213 (DEIS).
[875] Ex. EERA-12 at 213 (DEIS).
[876] Ex. EERA-12 at 164 (DEIS).
[877] Ex. EERA-12 at 166 (DEIS) and Map 12 (Sensitive Ecological Resources).

way prairies (Regions B and C), prairie bank easements (Regions A and B), and Lakes of Biological Significance Region B).[878]

634. The MDNR designates Scientific and Natural Areas to protect natural features with exceptional scientific or educational value including native plant communities, populations of rare species, and geologic features. Scientific and Natural Areas are scattered across the Project area; however, none would intersect Project's route width.[879] The primary means to mitigate impacts to sensitive ecological resources is prudent routing—that is, by avoiding and/or spanning these communities if possible.[880] In addition, following existing rights-of way and division lines such as roads, existing transmission lines, and field lines, would reduce the potential for fragmentation of these resources.[881]

635. The route width of all route segments in Region A intersect Sites of Biodiversity Significance and native plant communities, but the anticipated alignments of Route Segments A1 (Purple Route) and A3 (Blue Route) would have the most crossings greater than 1,000 feet. Route Segment A2 is the only route segment that could span all sensitive ecological resources it would cross. The route width of Route Segment A5 intersects the most Sites of Biodiversity Significance, native plant communities, and is the only one to intersect a prairie bank easement.[882]

636. The route width of Route Segment B4 (Blue Route) would intersect the most Sites of Biodiversity Significance acres and its alignment would have the most crossings >1,000 feet (8 versus 2-3 crossings for the other route segments). Its alignment also crosses a prairie bank easement. The route width of Route Segment B1 (Purple Route) would intersect the most acres of native plant communities (65 acres versus 10-23 acres for the others). The route width of Route Segment B2 is the only one that does not intersect railroad prairies, but it is also the only one that does intersect Lakes of Biological Significance. Additionally, its alignment would crosses one of these lakes.[883]

637. The route width of Route Segment C1 (Purple Route) would intersect the most acres of Sites of Biodiversity Significance, native plant communities, and railroad ROW prairie. The route width of the other three route segments would generally avoid these areas or insect less than 1 acre.[884]

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[878] Ex. EERA-12 at 12 and 166 (DEIS).
[879] Ex. EERA-12 at 168 (DEIS).
[880] Ex. EERA-12 at 170 (DEIS).
[881] Ex. EERA-12 at 170 (DEIS).
[882] FEIS at 236.
[883] FEIS at 282.
[884] FEIS at 324.

638. Route widths of Route Segments D1 (Purple Route), D2, and D7 would intersect 6 acres of an SBS and a native plant community; none of their alignments would cross these resources.[885]

639. The route width of both route segments would intersect Sites of Biodiversity Significance ranked "below". Route Segment E2 (Blue Route) would intersect a few more acres and its anticipated alignment would cross it.[886]

640. None of the route widths in Region F intersect sensitive ecological resources.[887]

~~534.~~641. The route width of all route segments in Region G would intersect Sites of Biodiversity Significance, with Route Segment G4 intersecting the most acreage and Route Segments G3 (Purple Route), G5, and G6 intersecting the least and only intersecting Sites of Biodiversity Significance ranked "below". The anticipated alignments of all route segments in Region G would cross Sites of Biodiversity Significance ranked "below". Route Segments G3 (Purple Route) through G6 would cross the edge of a Site of Biodiversity Significance in an area wider than 1,000 feet and might require placement of one or more structures within it.[888]

iii. Effects on Rare and Unique Natural Resources: Summary of Comparison of Route Alternatives.

~~535.~~642. Protected species are generally potentially present within the route alternatives analyzed. Regardless of the route selected, Xcel Energy will comply with applicable requirements of state and federal agencies regarding protected species, continue coordination with those agencies, and implement the best management practices described in the Route Permit Application.

~~536.~~643. MDNR has established several classifications for sensitive ecological resources across the state, many of which are scattered throughout the project, including Sites of Biodiversity Significance, native plant communities, railroad rights-of-way prairies, prairie bank easements, and Lakes of Biological Significance. Some of these sensitive ecological resources intersect the right-of-way or are crossed by the anticipated alignments of various route segments. As described in the Route Permit Application, the Blue and Purple Routes were both developed to avoid sensitive resources. And, as compared to the Blue Route, the Preferred Route further reduces impacts to native plant communities and Sites of Biodiversity Significance.[889] Regardless of route selected, Xcel Energy will implement the best

[885] FEIS at 352.
[886] FEIS at 377.
[887] FEIS at 406.
[888] FEIS at 442.
[889] Ex. Xcel-16 at 16:13–25 and Schedule 4 (Langan Direct).

management practices described in the Route Permit Application to avoid and minimize potential impacts.

G. Application of Various Design Considerations

~~537.~~644. Minnesota's HVTL routing factors require consideration of the Project's applied design options that maximize energy efficiencies, mitigate adverse environmental effects, and could accommodate expansion of the transmission system in the area.[890]

~~538.~~645. The Project is designed to maximize the use of existing right-of-way to the extent practicable.[891] For example, the Green Route Segment, a new single-circuit 3.1-mile 345 kV transmission line between the existing Sherco Solar West will be co-located with applicant's existing Line 5651, occupying the open position on the existing double-circuit-capable structures.[892] The Green Route Segment would not require additional right-of-way because the existing 150-foot right-of-way is sufficient for adding a second circuit to Xcel Energy's existing Line 5651.[893]

~~539.~~646. The Project is also designed to meet current and projected future needs of the local and regional transmission network.[894]

~~540.~~647. For the Garvin Substation, Xcel Energy secured purchase options with two landowners for a total of 160 acres that could be used for selecting the final 40–acre substation site to provide siting flexibility and setbacks from residences and to accommodate interconnections from future wind generation in the area.[895]

~~541.~~648. For the intermediate substation, Xcel Energy would seek to purchase property that is approximately 40 to 80 acres in size to accommodate the substation footprint and additional acreage that might be needed for future line connections, including connections for new generators.[896]

~~542.~~649. The support substation would be a new 345 kV voltage substation approximately 80 miles south of the Sherco Solar West Substation, near the approximate midpoint of the transmission line. For this substation, Xcel Energy would seek to purchase property that is approximately 40 to 80 acres in size to

[890] Minn. Stat. § 216E.03, subd. 7(b)(2); Minn. R. 7850.4100, subp. G.
[891] Ex. EERA-12 at 48–51 (DEIS).
[892] Ex. EERA-12 at 18 (DEIS).
[893] Ex. EERA-12 at 42–43 (DEIS).
[894] Ex. EERA-12 at 41–46 (DEIS).
[895] Ex. EERA-12 at 45 (DEIS).
[896] Ex. EERA-12 at 45 (DEIS).

accommodate the substation footprint and additional acreage that might be needed for transmission line connections.[897]

~~543.~~650. Xcel Energy has identified a proposed site with a willing landowner for the voltage support substation along the Preferred/Blue Route. The site is currently agricultural land and would not impact wetlands, conservation easements, or forested areas, and no sensitive habitat or species are anticipated to be present. Xcel Energy stated that it is continuing landowner outreach to acquire a site for the voltage support substation on the Purple Route, to the extent the Purple Route is selected by the Commission.[898]

H. Use or Paralleling of Existing Rights-of-Way, Survey Lines, Natural Division Lines, and Agricultural Field Boundaries

~~544.~~651. Minnesota's HVTL routing factors require consideration of the Project's use of or paralleling of existing right-of-way, survey lines, natural division lines, and agricultural field boundaries.[899]

~~545.~~652. Route Segment A5 parallels the most existing transmission lines (3.7 miles and 24% of its length). Route Segments A1 (Purple Route), A2, and A4 parallel existing transmission lines for one mile or more (6 to 8% of their length). The other Route Segments do not parallel existing transmission line.[900] Route Segment A2 parallels the most existing road ROW (15.6 miles, 89% of its length). Route Segments A1 (Purple Route), A5, A6 and A7 parallel existing road for between 55% and 75% of their lengths. The remaining route segments parallel existing road ROW for 38% of their length or less.[901] All route segments in Region A parallel existing division lines for 92 percent or more of their lengths.[902]

~~546.~~653. All Route Segments parallel existing transmission line. Route Segment B3 (Blue Route) parallels the most existing transmission lines (14.7 miles and 20% of its length). Route Segments B1 (Purple Route), B2, and B3 parallel existing transmission lines for five miles or more (11 to 13% of their length). Route Segment B2 parallels the most existing road ROW (30.6 miles, 60% of its length). Route Segments B1 (Purple Route), B3, B4 (Blue Route) parallel existing road for between 39% and 57% of their lengths. None of the Route Segments parallel existing

[897] Ex. EERA-12 at 46 (DEIS).
[898] Xcel Energy DEIS comments at 7 (Nov. 25, 2024) (eDocket No. 202411-212383-01).
[899] Minn. Stat. § 216E.03, subd. 7(b)(9); Minn. R. 7850.4100, subp. H.
[900] FEIS at 236.
[901] FEIS at 236.
[902] Ex. EERA-12 at 226 (DEIS).

railroads. [903]All Route Segments in Region B parallel existing division lines for 91 percent or more of their lengths, except for Route Segment B1(Purple Route) (54 percent).[904]

~~547.~~654. Route Segment C1 (Purple Route) is the only segment that parallels existing transmission line (6.1 miles and 11%). The other route segments do not parallel existing transmission line. Route Segment C2 parallels the most existing road ROW (45.6 miles, 78% of its length). Route Segments C1 (Purple Route), C3, C4 (Blue Route) parallel existing road for between 29% and 68% of their lengths.[905] All route segments in Region C parallel existing division lines for 89 percent or more of their lengths.[906]

~~548.~~655. None of the Route Segments in Region D parallel existing transmission line for any portion of their length. Route Segments D4 (Blue Route), D5 and D7 parallel the least amount of road ROW (4.3 to 5.5 miles and 34% to 42%). Route Segment D2 parallels the most existing road ROW (7.1 miles and 77%). [907]All route segments parallel division lines for 79 percent or more of their lengths. Route Segment D2 parallels the largest amount of division lines (8.5 miles and 92 percent of its length).[908]

~~549.~~656. Neither route segment in Region E parallels existing transmission line. Route Segment E1 (Purple Route) parallels less road ROW (3.0 miles and 17%). Route Segment E2 (Blue Route) parallels more existing road ROW (8.7 miles and 52%).[909] Route Segment E1 (Purple Route) parallels division lines for 15.6 miles and 88 percent of its length. Route Segment E2 (Blue Route) parallels 14.2 miles and 86 percent of its length.[910]

~~550.~~657. None of the route segments parallel existing transmission line.[911] Route Segment F7 parallels the most existing roads (2.1 miles and 99 percent). Route Segments F1 (Purple Route), F2, and F5 parallel roads for between 60 and 72 percent of its length. F3, F6, and F8 parallel a smaller percentage of roads (28 percent, 10 percent, and 48 percent, respectively). F4 (Blue Route) does not parallel any road.[912] Route Segments F1 (Purple Route), F2, F4 (Blue Route), F5, F7 and F8

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[903] FEIS at 283.
[904] Ex. EERA-12 at 271 (DEIS).
[905] FEIS at 324.
[906] Ex. EERA-12 at 309 (DEIS).
[907] FEIS at 352.
[908] Ex. EERA-12 at 337 (DEIS).
[909] FEIS at 377.
[910] Ex. EERA-12 at 362 (DEIS).
[911] FEIS at 406.
[912] Ex. EERA-12 at 391 (DEIS).

parallel division lines for 85% or more of their lengths. F3 and F6 follow division lines for 63% of their lengths.[913]

~~551.~~658. Route Segments G3 (Purple Route), G4, G5, and G6 all parallel between 14 and 15% of existing transmission line. G1 (Blue Route) and G2 parallel 10% of existing transmission line. Route Segment G5 parallels roads for 16.1 miles and 66% of its length. The rest of the Route Segments parallel roads for between 55 and 60% of their lengths. All route segments parallel roads for between 55 and 66% of their lengths.[914] All Route Segments in Region G parallel division lines for 85 percent or more of their length.[915]

~~552.~~659. All route options would parallel existing survey lines, natural division lines, and/or agricultural boundaries for the majority of their length (89 to 95 percent).[916]

I. Use of Existing Transportation, Pipeline, and Electrical Transmission System Rights-of-Way

~~553.~~660. Minnesota HVTL routing factors require consideration of the Project's use of existing transportation, pipeline, and electrical transmission system right-of-way.[917]

~~554.~~661. The only opportunity for right-of-way sharing and double-circuiting with existing transmission lines for the Project is the Green Route Segment, which adds a second circuit to the applicant's existing Line 5651 gen-tie line between the Sherco Solar West Substation and the Sherco Substation. As such, the Green Route Segment would not require any additional new right-of-way.[918]

662. Right-of-way sharing with railroads would not be feasible given the potential for AC interference. There is minimal opportunity (less than 5 miles) for right-of-way sharing with pipelines. Right-of-way sharing with pipelines would require further studies to understand potential AC interference impacts.[919]

~~555.~~663. The applicant indicates it would work with public road authorities to overlap portions of road ROW where feasible. Placing transmission line structures adjacent to and outside public road ROW can help reduce the amount of new ROW on adjacent land parcels needed while minimizing the potential relocation of the

[913] FEIS at 406.
[914] FEIS at 442.
[915] Ex. EERA-12 at 425 (DEIS).
[916] ~~Ex. EERA-12 at 467 (DEIS).~~
[917] Minn. Stat. § 216E.03, subd. 7(b)(8); Minn. R. 7850.4100, subp. J.
[918] Ex. EERA-12 at 191 (DEIS).
[919] Ex. EERA-12 at 191 (DEIS).

transmission line in the future due to road projects. Such ROW sharing is subject to the local road authority's approval.[920]

~~556.~~664. Some members of the public provided comments supporting following existing transmission line or road rights-of-way. However, other members of the public also commented on the potential to increase Project impacts by following existing rights-of-way. In particular, for example, while some members of the public expressed support for paralleling the existing CapX line where possible, other landowners crossed by CapX opposed another transmission line right-of-way in the same area.[921]

~~557.~~665. Xcel Energy's Preferred Route and the MDNR proxy route following existing rights-of-way and/or parcel, section, and division lines for approximately 91 percent of their length, as compared to approximately 89 percent for the Blue and Purple Routes.[922] The Preferred Route as modified by EERA staff also follows existing rights-of-way and/or parcel, section, and division lines for approximately 91 percent of its length.

J. Electrical System Reliability

~~558.~~666. Minnesota's HVTL routing factors require consideration of the Project's impact on electrical system reliability.[923]

~~559.~~667. The North American Electric Reliability Corporation (NERC) has established mandatory reliability standards for American utilities. For new transmission lines, these standards require the utility to evaluate whether the grid would continue to operate adequately under various contingencies. Two contingency categories apply to the Project. Under Category C, NERC requires utilities to analyze the consequences of a single storm or other event that causes simultaneous outages of both circuits on a double-circuit transmission line. The applicable Category D contingencies are loss of all transmission lines along a common ROW and loss of an entire voltage level at a substation. The effects of these transmission contingencies on the system, and the transmission system's ability to serve load, must be monitored and managed by utilities. Route permits issued by the Commission require permittees to comply with NERC standards.[924]

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[920] FEIS at 199.

[921] *See* Public Comments (R. and D. Schabel) (Nov. 25, 2024) (eDocket No. 202411-212380-01); Public Comments (K. Sharkey) (Nov. 12, 2024) (eDocket No. 202411-211805-01).

[922] Xcel Energy Response to Hearing Comments at 19 (Dec. 13, 2024). These values do not include the Green Segment, which follows an existing right-of-way for its entire length.

[923] Minn. Stat. § 216E.03, subd. 7(b)(5)–(6); Minn. R. 7850.4100, subp. K.

[924] Ex. EERA-12 at 192 (DEIS).

~~560.~~668. Line crossings are when one transmission line has to cross over another transmission line, placing the conductors of one transmission line physically over the conductors of the other transmission line. When line crossings occur, there is a risk it can impact system reliability because the outage of one line can result in an outage of the second line at the same time, thereby reducing system resiliency. It can also result in structural damage to both transmission lines complicating and increasing restoration times. Line crossings also create safety concerns because under normal operating conditions, one line may need to remain energized while maintenance work is occurring on the other transmission line at the same location. Taking multiple circuits out of service can stress the remaining system components and lead to overloads and voltage issues, and potentially stability concerns should there be a contingency ("loss of") of another system element at the same time. Because of the safety and reliability impacts of crossings, good utility practice is to minimize new line crossings when routing new high voltage transmission lines.[925]

~~561.~~669. High voltage transmission lines are designed to be highly reliable. The design for the Project consists of concrete foundations, steel structures, twisted pair conductor and shield wire for lighting protection.[926] As described in Standing Direct, however, circuits that cross over one another present operational and maintenance challenges. For example, both lines may need to be removed from service for a maintenance crew to work safely on one of the lines. Accordingly, Xcel Energy has sought to minimize the number of times the project crosses other high voltage transmission lines.[927]

670. In developing possible routes, Xcel Energy analyzed whether these routes created reliability concerns. There can be reliability concerns with additional transmission line crossings and therefore the number of new crossings should be limited to the extent practical. However, the Project overall supports and enhances the reliability of the regional electrical system.[928]

671. The FEIS identified crossings of transmission lines greater than 100 kV.[929]

Route Segment	Transmission Line Crossing Count (over 100kV)
A1 (Purple Route)	2

[925] Ex. Xcel-18 at 7:19–21 (Standing Direct).

[926] Ex. EERA-12, Appendix O at Supplemental Information Inquiry #4 (DEIS, Supplemental Information Inquiry Responses).

[927] Ex. EERA-12, Appendix O at Supplemental Information Inquiry #4 (DEIS, Supplemental Information Inquiry Responses).

[928] Ex. EERA-12 at 193 (DEIS).

[929] FEIS at 200, 201.

Route Segment	Transmission Line Crossing Count (over 100kV)
A2	4
A3-Blue	2
A4	2
A5	2
A6	2
A7	2
B1 (Purple Route)	11
B2	9
B3	11
B4 (Blue Route)	3
C1 (Purple Route)	3
C2	1
C3	1
C4 (Blue Route)	0
D1 (Purple Route)	1
D2	1
D3	1
D4 (Blue Route)	1
D5	1
D6	1
D7	1
E1(Purple Route)	1
E2 (Blue Route)	1
F1 (Purple Route)	0
F2	0
F3	0
F4 (Blue Route)	0
F5	0
F6	0
F7	0
F8	0
G1 (Blue Route)	2
G2	2

Route Segment	Transmission Line Crossing Count (over 100kV)
G3 (Purple Route)	2
G4	2
G5	2
G6	2

~~562.~~672. The Preferred Route, Blue Route, and MDNR proxy route would each require 12 crossings of existing transmission lines 115-kV or greater. The Purple Route would require 23 such crossings.[930] The Preferred Route as modified by EERA staff makes seven crossings.

i. Reliability: Summary of Comparison of Route Alternatives

~~563.~~673. Regardless of the route selected, Xcel Energy will construct and operate the Project consistent with applicable requirements and standards.

~~564.~~674. Xcel Energy's Preferred Route minimizes reliability risks with respect to crossings of existing lines. The Purple Route (including its crossing of the Mississippi River) has approximately twice as many line crossings as the Preferred Route.[931] The Preferred Route as modified by EERA staff further reduces the number of crossings.

K. Costs of Constructing, Operating, and Maintaining the Facility

~~565.~~675. Minnesota's HVTL routing factors require consideration of the Project's cost of construction, operation, and maintenance.[932]

~~566.~~676. Xcel Energy developed route-specific costs based on the estimates developed for the CN Application for a 160- to 180-mile-long route.[933] There are several main components of the cost estimates, including (1) transmission line structures and materials; (2) transmission line construction and restoration; (3) transmission line permitting and design; (4) transmission line and substation right-of-way acquisition; and (5) substation materials, permitting, design, and

[930] Xcel Energy Response to Hearing Comments at 31 (Dec. 13, 2024).
[931] Ex. Xcel-16 at Schedule 4 (Langan Direct).
[932] Minn. R. 7850.4100, subp. L.
[933] Ex. EERA-12 at 56 (DEIS).

construction.[934] Each of these components also includes a risk contingency and financing expenses.[935]

~~567.~~677. In the CN Application, Xcel Energy estimated that construction of the Project, along with substation construction and all substation equipment, including STATCOMs and series compensation, at $1.14 billion.[936] This cost estimate was developed specifically for the Purple Route and Blue Route proposed in the RP Application and represents the sum of the expenditures over the life of the Project.[937]

~~568.~~678. Project cost estimates are affected by multiple factors, including land values, anticipated distribution relocations and transmission crossings, and commodity prices.[938] The final Project costs will be dependent on additional factors, including the final route, soil conditions, and materials pricing.[939]

~~569.~~679. The estimated total Project costs for the Preferred Route range from $1.274 billion to $1.302 billion, including escalation and AFUDC.[940] These costs include all transmission line costs, right-of-way costs, risk contingencies for the transmission line and cost for substation modifications at the Sherco Solar West, Sherco, Voltage Support, Intermediate, and Garvin substations.[941] The transmission line is expected to cost approximately $4.4 million per mile (including land acquisition).[942]

~~570.~~680. Annual inspections are the principal operating and maintenance cost.[943] The aerial inspections cost approximately $35 to $55 per mile, and the ground inspections cost approximately $200 to $400 per mile.[944] Actual line-specific maintenance costs depend on the setting, the amount of vegetation management necessary, storm damage occurrences, structure types, materials used, and the age of the line.[945]

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[934] Ex. EERA-12 at 56 (DEIS).
[935] Ex. EERA-12 at 56 (DEIS).
[936] Ex. EERA-12 at 57 (DEIS).
[937] Ex. EERA-12 at 57 (DEIS).
[938] Ex-Xcel-17 at 4:2–5 (Samuel Direct).
[939] Ex-Xcel-17 at 4:8–9 (Samuel Direct).
[940] Ex-Xcel-17 at 4:14–17 (Samuel Direct).
[941] Ex-Xcel-17 at 4:16–20 (Samuel Direct).
[942] Ex-Xcel-17 at 4:20–21 (Samuel Direct). Ex-Xcel-20 at 4:20–21 (Samuel Surrebuttal).
[943] Ex. EERA-12 at 58 (DEIS).
[944] Ex. EERA-12 at 58 (DEIS).
[945] Ex. EERA-12 at 58 (DEIS).

~~571.~~681. The estimated costs vary between each alternative due to the following variables which are considered when estimating costs.[946]

- Terrain – topographic changes along a route can impact transmission structure spacing and height which can impact transmission costs.

- Alignment – the alignment of a HVTL can have an impact on transmission construction costs. Linear alignments are more economical to construct. Introduction of angles and corner structures have additional costs.

- Soil Conditions – the type of soil can impact the size of a foundation or potential for specialty foundations needed to support the transmission structures.

- Micro-routing to avoid specific features– site specific routing modifications to avoid specific human or environmental features can also have an impact to transmission costs.

- Existing Transmission Crossings – crossing of existing HVTLs can impact the number of transmission structures and height required for a crossing. Each line crossing needs to be reviewed for safe operations of the existing and new HVTL.

- Pipeline & Railroads – construction of high voltage HVTLs in close proximity to pipelines or railroads might require AC induction mitigation. The cost of mitigation would be dependent on the amount of AC induction and acceptable mitigation measures by the pipeline company or railroad.

- Distribution Line Relocation – If a HVTL is routed in the same location as an existing electric distribution line, the distribution line might need to be relocated so it does not interfere with the operation and maintenance of the new HVTL.

- Material Pricing – market fluctuations in material pricing can have a substantial impact to the cost of transmission projects.

[946] Ex. EERA-12 at 193–94 (DEIS).

- Right of Way – Changes in land values between Project proposal and easement acquisition and the number of voluntary easements would affect Project costs.

- Specialized construction practices & mitigation – areas which require specialized construction or avoidance/minimization measures can also increase costs to the extent they require additional equipment, etc. (for example - matting).

- Length – The overall length of a HVTL can impact the overall cost. However, a longer, straight HVTL using single, tangent structures can be less expensive than a shorter line that includes double angle structures, poor soils, and other cost escalating features.[947]

i. Costs: Summary of Comparison of Route Alternatives

~~572.~~682. The cost of the Preferred and Blue Routes compares favorably to the other end-to-end routes analyzed.

~~573.~~683. In its Response to Hearing Comments, Xcel Energy estimated the following costs for the route analyzed in the DEIS, as well as the Applicant's Preferred Route and an end-to-end route based on MDNR's route preferences. Table 10 reflects those cost estimates.[948]

[947] *See* Xcel Energy Response to Hearing Comments at Attachment A (Dec. 13, 2024).

[948] *See* Xcel Energy Response to Hearing Comments at 31 (Dec. 13, 2024); Ex. Xcel-20 at Schedule 1 (Samuel Surrebuttal). The cost figures in this table differ from the values in the DEIS; as described in the Surrebuttal Testimony of Joseph Samuel, the DEIS values appear to be based solely on a cost per mile. However, the DEIS values do not account for the additional variables that impact the cost of a route, although Xcel Energy conducted this analysis. Further, Xcel Energy has since updated the estimated cost per mile for the Project. The values above do not reflect those updates, but Xcel Energy anticipates that the cost update would affect the route alternatives by generally the same magnitude. *See* Ex. Xcel-20 at 5:11–21 and Schedule 1 (Samuel Surrebuttal).

Table 10

	~~Preferred Route~~	~~MDNR Route~~	~~Blue Route~~	~~Purple Route~~	~~Route Option C~~	~~Route Option D~~
~~Total (rounded to nearest million)~~	~~$773 million~~	~~$802 million~~	~~$767 million~~	~~$787 million~~	~~$815 million~~	~~$805 million~~

Preferred Route	MDNR Route	EERA Route	Blue Route	Purple Route	Route Option C	Route Option D
$773 million	$802 million	$787 million	$767 million	$787 million	$815 million	$805 million

L. Adverse Human and Natural Environmental Effects that Cannot be Avoided

~~574.~~684. Minnesota's HVTL routing factors require consideration of the adverse human and natural environmental effects that cannot be avoided.[949]

~~575.~~685. Transmission lines are infrastructure projects that have unavoidable adverse human and environmental impacts.[950] Resource impacts are unavoidable when an impact cannot be avoided even with mitigation strategies.[951] Unavoidable adverse impacts associated with construction of the proposed Project include possible traffic delays and fugitive dust on roadways; visual and noise disturbances; potential impacts to agricultural operations such as crop losses, soil compaction and erosion, and vegetative clearing; changes to forested wetland type and function; disturbance and temporary displacement of wildlife, as well as direct impacts to wildlife inadvertently struck or crushed during structure placement or other activities, minor amounts of habitat loss; converting the underlying land use to an industrial use (substation locations); and GHG emissions.[952]

[949] Minn. Stat. § 216E.03, subd. 7(b)(6); Minn. R. 7850.4100, subp. M.
[950] Ex. EERA-12 at 449 (DEIS).
[951] Ex. EERA-12 at 449 (DEIS).
[952] Ex. EERA-12 at 449 (DEIS).

~~576.~~686. Unavoidable adverse impacts associated with the operation of the proposed project include visual impact of structures, conductors, and substations; change in landscape character at the substation locations; loss of land use for other purposes, such as agriculture, where structures and the substations are placed; injury or death of avian species that collide with, or are electrocuted by, conductors; and continued maintenance of tall-growing vegetation. [953]

M. Irreversible and Irretrievable Commitments of Resources

~~577.~~687. Minnesota's HVTL routing factors require consideration of the irreversible and irretrievable commitments of resources that are necessary for the Project.[954]

~~578.~~688. 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.[955]

~~579.~~689. Irreversible impacts include the land required to construct the transmission line.[956] Certain land uses within the right-of-way will no longer be able to occur, especially at the substation.[957] While it is possible that the right-of-way could be restored to previous conditions, this is unlikely to happen in the reasonably foreseeable future (approximately 50 years).[958] The loss of forested wetlands is considered irreversible, because replacing these wetlands would take a significant amount of time.[959]

~~580.~~690. Irretrievable impacts are primarily related to Project construction, including the use of water, aggregate, hydrocarbons, steel, concrete, wood, and other consumable resources.[960] The commitment of labor and fiscal resources is also considered irretrievable.[961] However, the estimated Project construction cost assumes Xcel Energy would pay prevailing wages for applicable positions during Project construction.[962]

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[953] Ex. EERA-12 at 449 (DEIS).
[954] Minn. Stat. § 216E.03, subd. 7(b)(11); Minn. R. 7850.4100, subp. N.
[955] Ex. EERA-12 at 450 (DEIS).
[956] Ex. EERA-12 at 450 (DEIS).
[957] Ex. EERA-12 at 450 (DEIS).
[958] Ex. EERA-12 at 450 (DEIS).
[959] Ex. EERA-12 at 450 (DEIS).
[960] Ex. EERA-12 at 450 (DEIS).
[961] Ex. EERA-12 at 450 (DEIS).
[962] Ex. EERA-12 at 193 (DEIS).

N. Summary

~~581.~~691. Table 17-2 of the DEIS provides a comparison of the Blue and Purple Routes , and Route Options C and D, based routing criteria analyzed in the DEIS.[963]

~~582.~~692. In its Response to Hearing Comments, Xcel Energy also provided a comparison of Xcel Energy's Preferred Route, the Blue Route, the Purple Route, and a proxy MDNR end-to-end route. The table included in Xcel Energy's comments is replicated below for reference. Xcel Energy acknowledged that the table does not include a comparison of every resource category, but instead, includes the criteria for which, in Xcel Energy's view, there are more material differences among the routes. In its January 29, 2025, EERA Comments on Xcel Energy's Proposed Findings of Fact, Conclusions of Law, and Recommendations, EERA staff made its route recommendations as compared to the Applicant's Preferred Route and is included in Table 11.

Table 11

	Xcel Energy ~~Preferred~~ Route	MDNR Route	Blue Route	Purple Route	EERA Route
Mileage[964]	175	175	174	171	175
Residences 0-75 feet	0	0	0	0	0
Residences 76-150 feet	16	13	16	19	15
Residences 151-300 feet	72	82	72	72	76
Residences 301-500 feet	58	77	57	68	55
Total residences 0-500 feet	146	172	145	159	146
BWSR easements crossed by right-of-way (number)	6	8	6	7	7
NWI wetlands within right-of-way (acres)	138	145	152	135	134
Following existing right-of-way, parcel, section, division lines (percent)[965]	91	91	89	89	91

[963] Ex. EERA-12 at 461–63 (DEIS).
[964] Does not include Green Segment.
[965] The values in this row reflect the values from the RP Application and do not include the green segment.

Crossings of existing transmission lines 115-kV or greater (number)	12	12	12	23	9
Estimated cost[966] (rounded to nearest million)	$773 million	$802 million	$767 million	$787 million	$787 million

~~583.~~693. Based on the Route Permit Application and the DEIS, the Preferred Route as modified by EERA staff is consistent with the Commission's routing criteria and best balances and minimizes potential impacts, considering each of those criteria (including, but not limited to, residential impacts, natural resources, reliability, and cost). The original Preferred Route, Blue Route, Purple Route, and an MDNR route may offer benefits to one routing factor or another, but with negative impacts on other factors.

XI. CONSIDERATION OF ISSUES PRESENTED BY STATE AGENCIES AND LOCAL UNITES OF GOVERNMENT

~~584.~~694. Minnesota Statute § 216E.03, subd. 7(b)(12) requires the Commission to examine, when appropriate, issues presented by federal and state agencies and local entities. The issues presented by federal, state, and local units of government are addressed in the findings above as part of the analysis of the Commission's routing factors.

XII. DRAFT ROUTE PERMIT

695. Xcel Energy proposes revisions to the Draft Route Permit to reflect Project-specific details and reflect anticipated construction timelines and procedures for the Project. Specifically, Xcel Energy proposes revisions to the following sections of the Draft Route Permit: 4, 5, 5.3.1, 5.3.11, 9.1, and 9.2. Xcel Energy also proposes two new special conditions: 6.1 (regarding vegetation removal prior to a plan and profile submission), and 6.2 (regarding substation construction). In its Response to Hearing Comments, Xcel Energy detailed the reason for each of its requested revisions.

~~585.~~696. EERA staff recommended changes to Xcel Energy's new special permit condition 6.1 regarding vegetation removal. EERA staff recommends that in addition to any vegetation management plan being provided, that any required permits be provided prior to the vegetation clearing.

[966] *See* note on cost estimates in Section K(i), above.

697. The revisions requested by Xcel Energy, as modified by EERA staff, are reasonable and, with the revisions requested by Xcel Energy, the Draft Route Permit is reasonable and remains protective of human and environmental features. The record supports the revisions requested by Xcel Energy in its December 13, 2024, Response to Hearing Comments.

698. The FEIS discussed measures to mitigate potential impacts. EERA staff recommended the following permit conditions:

If the Commission selects a route including Route Segment G1 (Blue Route) or Route Segment G2, further coordination with the city of Augusta would be required to further understand potential mitigation required for impacts to the city's ongoing residential development. Proof of this coordination shall be filed 14 days prior to the plan and profile submittal for this location.

The Permittee shall file a public version of its public safety emergency response plan 14 days prior to its last plan and profile submittal.

The Permittee shall conduct geotechnical evaluations prior to project construction to identify locations where potential groundwater impacts could occur. If shallow depths to groundwater resources are identified during geotechnical design of the project, the Permittee shall employ specialty structures with wider, shallower foundations. These locations shall be shown on the plan and profile submitted for the project, and appropriate mitigation measures be identified as part of the filing.

The Permittee shall coordinate with the DNR to avoid adverse impacts to protected species and implement appropriate, species-specific BMPs if project activities take place during any of the species' active seasons. Proof of this coordination shall be filed with the respective plan and profile submittal(s) for the Project.

The Permittee shall utilize downward facing lighting on associated facilities. If LED lights are used, the Permittee shall follow MnDOT Approved Products for luminaries and a nominal color temperature below 2700K. If available, the Permittee shall choose products that have the lowest number for backlight and glare.

The Permittee shall not use dust control products that contain chlorides to avoid the potential for chloride products accumulating to levels that are toxic to plants and wildlife.

The Permittee shall file a decommissioning plan 14 days prior to the last pre-construction meeting for the Project.

The Permittee shall utilize wildlife friendly erosion and sediment control materials throughout the Project.

~~586.~~699. The special permit conditions recommended by EERA staff are reasonable.

XIII. NOTICE

~~587.~~700. Minnesota statutes and rules require an applicant for a Route Permit to provide certain notice to the public as well as to local governments before and during the Application for a Route Permit process.[967]

~~588.~~701. The Applicant provided notice to the public and to local governments in satisfaction of Minnesota statutory and rule requirements.[968]

~~589.~~702. Minnesota statutes and rules also require the EERA and the Commission to provide certain notice to the public throughout the Route Permit process. The EERA and the Commission provided the notice in satisfaction of Minnesota statutes and rules.[969]

XIV. ADEQUACY OF THE EIS

~~590.~~703. The Commission is required to determine the adequacy of the EIS.[970]

~~591.~~704. The EIS addresses the issues and alternatives raised in scoping to a reasonable extent considering the availability of information and the time limitations for considering the permit application.

~~592.~~705. The EIS provides responses to the comments received during the draft environmental impact statement review process.

~~593.~~706. The EIS was prepared in compliance with the procedures in parts 7850.1000 to 7850.5600.

Based on the foregoing Findings of Fact and the record in this proceeding, the Administrative Law Judge makes the following:

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[967] Minn. Stat. § 216E.03, subd. 3a and 4; Minn. R. 7850.2100, subp. 2 and 4.

[968] Exs. Xcel-10 (Notice of Filing RP Application) and Xcel-12 (Compliance Filing – Rule 7850 Notice).

[969] Minn. Stat. § 216E.03, subd. 6; Minn. R. 7850.2300, subp. 2, .2500, subp. 2 and 7–9; Exs. PUC-2 (Notice of Comment Period on Application Completeness), PUC-4 (Notice of Public Information and EIS Scoping Meetings), PUC-7 (Notice of and Order for Hearing), and PUC-11 (Notice of Informational Meetings, Public and Evidentiary Hearings, and Availability of DEIS); Exs. EERA-8 (Notice of EIS Scoping Decision), and EERA-10 (*EQB Monitor* Notice).

[970] Minn. R. 7850.2500, subp. 10.

CONCLUSIONS OF LAW

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 to consider the Applicant's Route Permit Application.

3. The Commission determined that the CN Application was substantially complete and accepted the CN Application on May 2, 2023.

4. The Commission determined that the RP Application was substantially complete and accepted the RP Application on January 16, 2024.

~~5. EERA has conducted an appropriate environmental analysis for the Project for purposes of these proceeding and the EIS satisfies applicable law, including Minn. R. 7849.0230 and Minn. R. 7850.2500.~~

~~6.~~5. The Applicant gave notice as required by Minn. Stat. § 216E.03, subd. 3a and 4; Minn. Stat. § 216E.04, subd. 4; Minn. R. 7850.2100, subp. 2 and 4; and Minn. R. Ch. 7829, as applicable.

~~7.~~6. The Commission and/or EERA gave notice as required by Minn. Stat. § 216B.243, Minn. Stat. § 216E.03, subd. 6, Minn. R. 7850.2300, subp. 2, and Minn. R. 7850.2500, subp. 2 and 7-9; Minn. R. 7849.1400; and Minn. R. 7849.0230.

~~8.~~7. EERA has conducted an appropriate environmental analysis for the Project for purposes of this Certificate of Need and Route Permit proceeding and the Final EIS satisfies Minn. R. 7849.0230 and Minn. R. 7850.2500.

~~9.~~8. Public hearings were conducted in communities along the proposed routes. The Applicant and the Commission gave proper notice of the public hearings, as required by Minn. Stat. § 216B.243 and Minn. Stat. § 216E.04, subd. 6, and the public was given the opportunity to appear at the hearings or submit written comments.

~~10.~~9. All procedural requirements for processing the Certificate of Need and Route Permit have been met.

~~11.~~10. The record evidence demonstrates that the Project meets the criteria for the issuance of a Certificate of Need, as set forth in Minn. Stat. § 216B.243, subd. 3, and Minn. R. 7849.0120.

~~12.~~11. The record evidence demonstrates that the Applicant's Preferred Route satisfies the Route Permit criteria set forth in Minn. Stat. § 216E.03, subd. 7(a) and Minn. R. 7850.4100 based on the factors in Minn. Stat. § 216E.03, subd. 7 and Minn. R. 7850.4000.

~~13.~~12. The record evidence demonstrates that the Applicant's Preferred Route as modified by EERA staff is the best route alternative for the Project.

~~14.~~13. The record evidence demonstrates that constructing the Project along the Applicant's Preferred Route as modified by EERA staff does not present a potential for significant adverse environmental effects pursuant to the Minnesota Environmental Rights Acts, Minn. Stat. §§ 116B.01-116B.13, and the Minnesota Environmental Policy Act, Minn. Stat. §§ 116D.01-116D.11.

~~15.~~14. There is no feasible and prudent alternative to the construction of the Project, and the Project is consistent with and reasonably required for the promotion of public health and welfare in light of the state's concern for the protection of its air, water, land, and other natural resources as expressed in the Minnesota Environmental Rights Act.

~~16.~~15. The Applicant's requested route widths are reasonable and appropriate for the Project.

~~17.~~16. The Applicant's request for a right-of-way generally of 150 feet, and up to 250 feet where specialty structures are used, for operation and maintenance of the double circuit 345 kV transmission line is reasonable and appropriate.

~~18.~~17. The evidence in the record demonstrates that the general Route Permit conditions are appropriate for the Project, as modified in Section XII herein.

~~19.~~18. The evidence in the record demonstrates that Xcel Energy's requested condition regarding costs, which is supported by DER is appropriate for the Certificate of Need.

~~20. Any Findings more properly designated as Conclusions are adopted as such.~~

Based upon these Conclusions, the Administrative Law Judge makes the following:

RECOMMENDATION

Based upon these Findings of Fact and Conclusions of Law, the Administrative Law Judge recommends that the Commission issue a Certificate of

Need and Route Permit for the Applicant's Preferred Route as modified by EERA staff to Xcel Energy to construct and operate the Project and associated facilities in Sherburne, Stearns, Kandiyohi, Wright, Meeker, Chippewa, Yellow Medicine, Renville, Redwood, and Lyon counties in Minnesota, and that the permit include the draft route permit conditions amended as set forth in the Conclusions above.

THIS REPORT IS NOT AN ORDER AND NO AUTHORITY IS GRANTED HEREIN. THE MINNESOTA PUBLIC UTILITIES COMMISSION WILL ISSUE THE ORDER THAT MAY ADOPT OR DIFFER FROM THE PRECEDING RECOMMENDATION.

Dated on _____

_____

Suzanne Todnem
Administrative Law Judge