MINNESOTA
PUBLIC UTILITIES COMMISSION

August 15, 2025

VIA EDOCKETS

The Honorable Ann O'Reilly
Court of Administrative Hearings
600 North Robert Street
P.O. Box 64620
Saint Paul, MN 55164-0620

RE: Comments Concerning Applicant's Proposed Findings
Mankato to Mississippi River Transmission Line Project
CAH Docket No. 65-2500-40099
PUC Docket Nos. E-002/CN-22-532 and E-002/TL-23-157

Dear Judge O'Reilly:

Energy Infrastructure Permitting (EIP) staff provides the attached edits to Xcel Energy's *Proposed Findings of Fact, Conclusions of Law, and Recommendations* for the project referenced above (Attachment A). Edits are shown in red with an underline or 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 and other documents that make up the project record.

EIP staff has reviewed the preferred route identified by Xcel Energy in its proposed findings. Staff believes that the segments identified by Xcel Energy are consistent with the routing criteria found in Minn. Statute 216E.03, Subd. 7 and Minn Rule 7850.4100.

Segment	Xcel Energy Preferred Route	EIP Route Recommendations
1	Segment 1 North (with Route Segment 18 and Alternative Alignment 2)	Segment 1 North (with Route Segment 18 and Alternative Alignment 2)
2	Segment 2 North, Connector Segment 2G, and Segment 2 South	Segment 2 North, Connector Segment 2G, and Segment 2 South
3	Segment 3 (as proposed)	Segment 3 (as proposed)
4	Segment 4 West Modification and south-south option near Highway 52 or Route Segment 12 (CapX Co-Locate Option)	Route Segment 12 (CapX Co-Locate Option)

Segment 1
Segment 1 North could double circuit with existing transmission lines for 96 percent of its total length. With existing transmission line rights-of-way already in place, impacts to resources such as aesthetics, vegetation, wetlands, soils, and wildlife will be minimal compared to establishing a new transmission right of way (ROW). Segment 1 North has 154 residences within 1,600 feet of the anticipated alignment

in comparison to Segment 1 South which has 323 residences within 1,600 feet of the anticipated alignment.

Segment 2
Segment 2 North, Connector Segment 2G, and Segment 2 South (Xcel's preferred Segment 2) will parallel transmission lines, roads, railroads, pipelines, parcel lines, section lines, and division lines, for 83 percent of its length; this percentage is lower than other configurations of the Segment 2 North and Segment 2 South portion of the project. Xcel's preferred Segment 2 has 82 residences within 1,600 feet of the anticipated alignment as compared to Segment 2 North-North option (198 residences) and Segment 2 South-North option (180 residences). Xcel's preferred Segment 2 has the fewest impacts to several natural resources: stream crossings, PWI crossings, total and forested wetlands, forested landcover, biodiversity sites, and wildlife management areas. Xcel's preferred Segment 2 also avoids significant impacts to recreational resources when compared to other Segment 2 configurations.

Staff believes that Xcel's preferred Segment 1 and Segment 2 are relatively more consistent with the Commission's routing criteria than Route Segment 17 (Highway 14 Option) for several reasons:

- Route Segment 17 (Highway 14 Option) is 19.2 miles longer than Xcel's preferred Segment 1 and preferred Segment 2, which would result in an increase in costs of approximately $55.2 million to construct the Route Segment 17 (Highway 14 Option). The additional length of Route Segment 17 (Highway 14 Option) results in greater impacts to agricultural lands and prime farmland.
- In their post-hearing brief, Xcel stated that future transmission expansion at the existing West Faribault Substation would likely incorporate the Mankato to Mississippi River 345 kV Transmission line. With Xcel's preferred Segment 1 and Segment 2, the Mankato to Mississippi River 345 kV line will be approximately 0.13 miles from the West Faribault Substation. If Route Segment 17 (Highway 14 Option) is selected and constructed, any future connection to the West Faribault Station will require an additional 15 miles of new 345 kV transmission line to be constructed from Route Segment 17 (Highway 14 Option) to the West Faribault Substation.
- Route Segment 17 (Highway 14 Option) has relatively more residences (254) within 1,600 feet of the anticipated alignment, as well as four (4) residences within the anticipated ROW. Xcel's preferred Segment 1 and 2 has 218 residences within 1,600 feet of the anticipated alignment, and no residences within the anticipated ROW.
- Route Segment 17 (Highway 14 Option) has 64 acres of State Game Refuge lands within the anticipated ROW, and 428 acres of State Game Refuge lands within the route width. Xcel's preferred Segment 1 and 2 has 17 acres of State Game Refuge lands within the anticipated ROW, and 127 acres of State Game Refuge lands within the route width.

Segment 3
Segment 3, as proposed, is the only route option for this portion of the proposed transmission line, and will involve the construction of an additional 345 kV line to be placed on structures that currently existed within a previously permitted transmission route.

Segment 4

Staff recommends Route Segment 12 (CapX Co-Locate Option) be selected for the Segment 4 portion of the project. Staff believes that Route Segment 12 is relatively more consistent with the Commission's routing criteria than other routing options in this area. The anticipated alignment for Route Segment 12 will parallel the existing CapX 345 kV transmission line for 84 percent of its length, which is greater than all other Segment 4 routing options. Route Segment 12 has the fewest number of residences (40) within 1,600 feet of the anticipated alignment; the other three Segment 4 routing options have 172, 196, and 234 residences within 1,600 feet of their anticipated alignments. Route Segment 12 is also the shortest of the Segment 4 routing options, which results in a budget that is approximately $13.3 million lower than the next Segment 4 route option.

Staff recommends that should the Commission issue a route permit for the project it should do so along Xcel Energy's preferred route in Segments 1, 2, and 3, and Route Segment 12 (CapX Co-Locate Option) for Segment 4. Staff generally concurs with Xcel Energy's recommended changes to the sample route permit issued for the project including the special permit conditions identified in the proposed findings.

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

Sincerely,

Richard Davis
Environmental Review Manager

Enclosure

Attachment A

Edited Findings of Facts, Conclusions of Law, and Recommendations

MPUC Docket No. E002/TL-23-157
CAH Docket No. 65-2500-40099

STATE OF MINNESOTA
BEFORE THE COURT OF ADMINISTRATIVE HEARINGS
FOR THE PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION FOR A ROUTE PERMIT FOR THE MANKATO TO MISSISSIPPI RIVER 345 KV TRANSMISSION PROJECT IN SOUTHERN MINNESOTA

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

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CAH Docket No. 65-2500-40099

STATE OF MINNESOTA
BEFORE THE COURT OF ADMINISTRATIVE HEARINGS
FOR THE PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION FOR A ROUTE PERMIT FOR THE MANKATO TO MISSISSIPPI RIVER 345 KV TRANSMISSION PROJECT IN SOUTHERN MINNESOTA

~~XCEL ENERGY'S~~ ENERGY INFRASTRUCTURE PERMITTING STAFF PROPOSED FINDINGS OF FACT, CONCLUSIONS OF LAW, AND RECOMMENDATIONS

This matter was assigned to Administrative Law Judge (ALJ) Ann C. O'Reilly to conduct public hearings on the Certificate of Need and Route Permit Application (Application) of Northern States Power Company, doing business as Xcel Energy (Xcel Energy, the Company, or the Applicant) to construct the Mankato – Mississippi River Transmission Project (Project) in Blue Earth, Le Sueur, Waseca, Rice, Dodge, Olmsted, Goodhue, Winona, and Wabasha counties.[1] The Minnesota Public Utilities Commission (Commission) also requested that the ALJ prepare findings of fact, conclusions of law, and provide recommendations related to the proposed Route Permit. The Commission directed that the Certificate of Need portion of the Application be handled through the Commission's informal process.

Public hearings were held before Judge O'Reilly on May 27, 28, and 29, 2025 in the above-captioned matter. In the morning of May 27, 2025, a public hearing was held at Country Inn and Suites by Radisson, 1900 Premier Dr., Mankato, Minnesota. In the evening of May 27, 2025, a public hearing was held at Waterville High School, 500 Paquin St. E, Waterville, Minnesota. In the morning of May 28, 2025, a public hearing was held at Eagles Club Owatonna, 141 E Rose St., Owatonna, Minnesota. In the evening of May 28, 2025, a public hearing was held at Zumbrota VFW, 25 E 1st St., Zumbrota, Minnesota. In the morning of May 29, 2025, a virtual public hearing was held via conference call and WebEx. In the evening of May 29, 2025, a public hearing was held at Faribault American Legion, 112 5th Street NE, Faribault, Minnesota. An evidentiary hearing was held in the morning of May 30, 2025 at the Public Utilities Commission, 121 7th Place, 3rd Floor, St. Paul, Minnesota. Written public comments were received until June 10, 2025.

[1] This list of counties includes all counties where the Applicant's proposed route alternatives are located.

The following appearances were made:

Valerie T. Herring, Taft Stettinius & Hollister, LLP, Lauren Steinhaeuser, Assistant General Counsel, and Ellen Heine, Principal Siting and Land Rights Agent, appeared on behalf of Xcel Energy.

Richard Dornfeld, Assistant Attorney General, appeared on behalf of the Minnesota Department of Commerce (Department). Richard Davis, Environmental Review Manager for the Energy Environmental Review and Analysis unit (EERA),[2] and Jamie MacAlister, Director of Regulatory Affairs for the Division of Energy Resources (DER), also appeared on behalf of the Department.

Bret Eknes and Cezar Panait appeared on behalf of Commission staff.

~~Amelia Vohs and Abigail Hencheck appeared on the behalf of t~~The Minnesota Center for Environmental Advocacy, Fresh Energy, and Clean Grid Alliance (collectively, the Clean Energy Organizations or CEOs) are a party in the case, but did not appear at the evidentiary hearing.

~~Carol Overland appeared on behalf of~~ NoCapX 2020 and the Prehn Family, represented by Carol Overland, are a party in the case, but did not appear at the evidentiary hearing.

~~Bret Eknes and Cezar Panait appeared on behalf of Commission staff.~~

STATEMENT OF ISSUES

Has Xcel Energy satisfied the criteria established in Minn. Stat. Ch. 216E[3] and Minn. R. Ch. 7850 for a Route Permit for Project?

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

SUMMARY OF RECOMMENDATIONS

The ALJ 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

[2] On July 1, 2025, the Minnesota Energy Infrastructure Permitting Act, Minn. Stat. Ch. 216I, took effect and consolidated EERA staff and the Commission's Energy Facilities Permitting staff into one unit, the Energy Infrastructure Permitting (EIP) unit. This filing refers to EERA rather than EIP as the majority of the filings in this docket were made by EERA prior to July 1, 2025.

[3] As the Application for this Project was filed prior to July 1, 2025, the Application is being reviewed under Minn. Stat. Ch. 216E and Minn. R. Ch. 7850 rather than Minn. Stat. Ch. 216I. *See* Notice of Legislative Changes (July 9, 2025) (eDocket No. 20257-220799-01).

Commission grant a Route Permit for Route Option B, incorporating Route Segment 18 and Alignment Alternative 2, in Segments 1 and 2, Segment 3, and either Route Option A or Route Option D for Segment 4.[4]

The ALJ 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 Application, and provides responses to the comments received during the draft EIS review process.

Based on the information in the Application, the EIS, testimony at the public hearings, written comments, exhibits received in this proceeding, and other evidence in the record, the ALJ makes the following:

FINDINGS OF FACT

I. 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.[5] In Minnesota, Xcel Energy provides electric service to 1.5 million customers.[6] 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, known together as the NSP Companies.[7] The NSP Companies are vertically integrated transmission-owning members of Midcontinent Independent System Operator, Inc. (MISO).[8] Together, the NSP Companies have over 46,000 conductor miles of transmission lines and approximately 550 transmission and distribution substations.[9]

2. Segments of the Project will either be individually or jointly owned by Xcel Energy, Dairyland Power Cooperative, Southern Minnesota Municipal Power Agency, and the City of Rochester, Minnesota, acting through its Public Utility Board.[10] As the Project Manager for the Project, Xcel Energy will be responsible for the construction

[4] These route options are described in the Final Environmental Impact Statement (FEIS). Ex. ~~EERA-10~~PUC-31 at 518 and 794 (FEIS). A map of the Segment 1 and 2 route options is provided as Map 47 of the FEIS and a map of the route options for Segment 4 is provided as Map 74 in the FEIS.
[5] Ex. Xcel-15 at 11 (Application).
[6] Ex. Xcel-15 at 11 (Application).
[7] Ex. Xcel-15 at 11 (Application).
[8] Ex. Xcel-15 at 11 (Application).
[9] Ex. Xcel-15 at 11 (Application).
[10] Ex. Xcel-15 at 11 (Application).

of the proposed transmission facilities, and as such, Xcel Energy is the sole Applicant for the Certificate of Need and Route Permit for the Project and will be the sole permittee for the Project.[11]

II. PROCEDURAL HISTORY

3. On April 2, 2024, the Applicant filed the Certificate of Need and Route Permit Application.[12]

4. On April 8, 2024, the Commission issued a Notice of Comment Period on Application Completeness, requesting initial comments by April 22, 2024, reply comments by April 29, 2024, and supplemental comments by May 6, 2024.[13]

5. On April 19, 2024, the Commission received public comments requesting the Commission consider residential impacts on route options.[14]

6. On April 22, 2024, the EERA filed comments and recommendations on completeness of the Application.[15] EERA recommended that the Commission accept the Application as substantially complete after the Applicant files a new set of maps that accurately displays all lakes, public waters, watercourses, and public road throughout the Project area.[16] EERA further recommended that the Commission combine the proceedings for the Certificate of Need and Route Permit, and take no action on an advisory task force.[17]

7. NoCapX 2020 and the Prehn Family also filed comments on April 22, 2024 on completeness and recommended the Commission find the Application incomplete, appoint an advisory task force to identify route alternatives, and direct the Executive Secretary to issue an authorization to the Applicant to initiate consultation with the State Historic Preservation Office (SHPO).[18]

8. The Operating Engineers Local 49 and North Central States Regional Council of Carpenters (IUOE Local 49/NCSRC of Carpenters) also filed comments noting the importance of timely permitting and deployment of projects like this one to

[11] Ex. Xcel-15 at 11 (Application).
[12] Ex. Xcel-15 (Application).
[13] Ex. PUC-6 (Notice of Comment Period on Application Completeness).
[14] Public Comment (April 19, 2024) (eDocket No. 20244-205732-01); Public Comment (Trevor Scrabeck) (April 19, 2024) (eDocket No. 20244-205687-01).
[15] Ex. EERA-1 (Comments and Recommendations on Application Completeness Extension Variance Request).
[16] Ex. EERA-1 (Comments and Recommendations on Application Completeness Extension Variance Request).
[17] Ex. EERA-1 (Comments and Recommendations on Application Completeness Extension Variance Request).
[18] Comments (Prehn Family and NoCapX 2020) (April 22, 2024) (eDocket No. 20244-205817-02).

meet Minnesota's energy goals in a reliable manner.[19] IUOE Local 49/NCSRC of Carpenters also conclude that an advisory task force is not warranted at this time.[20]

9. Comments were also filed by two landowners. Trevor Scrabeck filed comments related to potential impacts of the Project on his personal use airport in New Haven Township.[21] Dale Thomforde, Supervisor on the New Haven Township Board, filed comments on potential route impacts and recommendations for route alternatives.[22]

10. On April 29, 2024, the Applicant filed reply comments responding to the Department, Division of Energy Resources, EERA, NoCapX 2020 and the Prehn Family, commenters in the Certificate of Need proceeding, and the two landowners.[23] The Applicant requested the Commission find the Application to be complete, evaluate the Certificate of Need Application using the Commission's informal process, order the Certificate of Need and Route Permit be processed jointly, decline to appoint an advisory task force, and delegate authority to the Executive Secretary to issue delegation of authority to the Applicant for Minnesota SHPO consultation.[24] NoCapX 2020 and Prehn Family also filed reply comments responding to comments from MISO, the Department, Division of Energy Resources, EERA, and from the members of the public.[25] Lastly, the Mayor of Oronoco provided comments related to potential impacts to Lake Shady and supporting an alternative route for the 161 kV transmission line along the existing CapX2020 345 kV line.[26] The City Council of Oronoco filed a resolution requesting supporting evaluation of an alternative route for the 161 kV transmission line along the existing CapX2020 345 kV line.[27]

11. On May 6, 2024, the Applicant filed supplemental comments responding to NoCapX 2020 and the Prehn Family, the City and Mayor of Oronoco, and commenters in the Certificate of Need proceeding.[28] The Applicant reiterated its prior recommendations and suggested that the route alternative proposed by the City and Mayor of Oronoco be evaluated during the scoping process.[29]

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[19] Comments (IUOE Local 49 and NCSRC of Carpenters) (April 26, 2024) (eDocket No. 20244-206045-01).
[20] Comments (IUOE Local 49 and NCSRC of Carpenters) (April 26, 2024) (eDocket No. 20244-206045-01).
[21] Public Comment (Trevor Scrabeck) (April 22, 2024) (eDocket Nos. 20244-205759-01 and 20244-205756-01).
[22] Public Comment (Dale Thomforde) (April 23, 2024) (eDocket No. 20244-205870-01).
[23] Ex. Xcel-19 (Reply Comments).
[24] Ex. Xcel-19 (Reply Comments).
[25] Comments (Reply Comments of the Prehn Family and NoCapX 2020) (April 29, 2024) (eDocket No. 20244-206134-02).
[26] Public Comments (Mayor of Oronoco) (April 29, 2024) (eDocket No. 20244-206072-01).
[27] Public Comment (City of Oronoco, City Council Resolution) (April 29, 2024) (eDocket No. 20244-206073-01).
[28] Ex. Xcel-20 (Supplemental Comments).
[29] Ex. Xcel-20 at 5 (Supplemental Comments).

12. On May 17, 2024, Xcel Energy submitted a compliance filing demonstrating that the notices required by Minn. Stat. § 216E.03, subd. 4 and Minn. R. 7850.2100, subps. 2 and 4 were published or mailed.[30] The Commission also issued a notice of Commission agenda meetings for May 28 and May 30, 2024.[31]

13. On May 22, 2024, the Commission filed a sample Route Permit.[32] The Commission also filed on this same day its Briefing Papers for its May 30, 2024 agenda meeting.[33] On May 23, 2024, the Commission filed Briefing Papers with revised staff decision options for its May 30, 2024 agenda to discuss Application completeness.[34] On May 30, 2024, the Commission filed Briefing Papers with second revised decision options and the Commission met to consider the completeness of the Application.[35]

14. On June 24, 2024, the Commission and the Department issued a Notice of Public Information and EIS Scoping Meetings.[36]

15. On June 26, 2024, the Commission issued an Order: (1) accepting the Certificate of Need portion of the Application as substantially complete and directing that the Certificate of Need Application be reviewed using the ~~information~~ informal review process; (2) accepting the Route Permit portion of the Application as substantially complete and referring the Route Permit matter to the Office of Administrative Hearings (OAH) for a contested case; (3) authorizing joint hearings and combined environmental review of the Certificate of Need and Route Permit applications; (4) denying the request to establish an advisory task force; and (5) authorizing the Executive Secretary to issue an authorization to the Applicant to initiate consultation with SHPO.[37]

16. On June 26, 2024, the Notice of Public Information and EIS Scoping Meetings was published in the *Environmental Quality Board (EQB) Monitor*.[38]

17. On July 3, 2024, the Applicant filed comments on the scope of the EIS recommending the EIS evaluate a route alternative for Segment 4 that would involve double-circuiting the 161 kV line with the existing North Rochester – Northern Hills

[30] Ex. Xcel-21 (Notice of Filing of Application Compliance Filing).
[31] Ex. PUC-8 (Notice of May 28 and 30, 2024 Agenda Meeting).
[32] Ex. PUC-9 (Sample Route Permit).
[33] Ex. PUC-10 (May 30, 2024 Agenda Briefing Papers).
[34] Ex. PUC-11 (May 30, 2024 Agenda - Revised Staff Decision Options).
[35] Ex. PUC-12 (May 30, 2024 Agenda – 2nd Revised Decision Options).
[36] Ex. PUC-13 (Public Information and Environmental Impact Statement Scoping Meetings).
[37] Ex. PUC-15 (Accepting Applications as Complete, Establishing Procedural Requirements, and Notice of and Order for Hearing).
[38] Ex. PUC-14 (EQB Monitor).

161 kV line for a portion of its length, referred to as Segment 4 West Modification in the EIS.[39]

18. On July 8, 2024, public information and EIS scoping meetings were held at Country Inn and Suites, 1900 Premier Drive, Mankato, Minnesota in the morning, and at Waterville-Elysian-Morristown High School, 500 Paquin Street East, Waterville, Minnesota in the evening.

19. On July 9, 2024, public information and EIS scoping meetings were held at the American Legion – Faribault, 112 5th St NE, Faribault, Minnesota in the morning, and at the Pine Island Public School, High School Commons, 223 1st Avenue SE, Pine Island, Minnesota in the evening.

20. On July 10, 2024, a public information and EIS scoping meeting was held at St. Agnes Church Hall, 115 West Belvidere Avenue, Kellogg, Minnesota in the evening.

21. On July 11, 2024, virtual public information and EIS scoping meetings were held via WebEx, one meeting was held in the afternoon and a second meeting was held in the evening.

~~18.~~22. On July 29, 2024, NoCapX 2020 and the Prehn Family filed comments on the scope of the EIS.[40]

~~19.~~23. On July 30, 2024, the Commission filed public comments from Dale Thomforde and Gerald Rausch regarding the scope of the EIS.[41]

~~20.~~24. On July 31, 2024, the Minnesota Department of Natural Resources (MnDNR) filed comments regarding the scope of the EIS and proposed conditions for the Route Permit.[42]

~~21.~~25. On August 1, 2024, the Commission filed the presentation used at the public information and EIS scoping meetings.[43] On this same day, the EERA filed written public comments received at public meetings and tribal and agency comments.[44] A public comment was also filed by Michael Collins.[45] The Minnesota Department of

[39] Ex. Xcel-22 (Comments on Scope of Environmental Impact Statement).
[40] Comments (Scoping Comments – Prehn Family and NoCapX 2020) (July 29, 2024) (eDocket No. 20247-209032-01).
[41] Public Comment (Dale Thomforde) (July 30, 2024) (eDocket No. 20247-209097-02); Public Comment (Gerald Rausch) (July 30, 2024) (eDocket No. 20247-209102-01).
[42] Minnesota Department of Natural Resources Comments (July 31, 2024) (eDocket No. 20247-209122-01).
[43] Ex. PUC-16 (Public Meeting Presentation).
[44] Written Public Comments Received at Public Meetings (August 1, 2024) (eDocket No. 20248-209559-03); Tribal and Agency Comments (August 1, 2024) (eDocket No. 20248-209559-01).
[45] Public Comment (Michael Collins) (Aug. 1, 2024) (eDocket No. 20247-209158-01).

Transportation (MnDOT) filed comments on the scope of the EIS.[46] The Citizens for Environmental Rights & Safety (CFERS) also filed comments on the scope of the EIS.[47] Lastly, the OAH issued an order for prehearing conference.[48]

~~22.~~26. On August 5, 2024, the first prehearing conference was held.[49] Also on August 5, 2024, the Commission filed the minutes from the May 30, 2024 agenda meeting.[50]

~~23.~~27. On August 6, 2024, OAH issued an order for a continued prehearing conference.[51]

~~24.~~28. On August 5 and 7, 2024, the CFERS filed additional comments and a notice of appearance.[52]

~~25.~~29. On August 12, 2024, the Applicant filed affidavits of publication and newspaper tear sheets for the Notice of Public Information and EIS Scoping Meetings.[53]

~~26.~~30. On August 13, 2024, the EERA filed comments received via email, mail, and internet form.[54] The EERA also filed public meeting minutes from the public information and EIS scoping meetings.[55]

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[46] Comments (Minnesota Department of Transportation) (Aug. 1, 2024) (eDocket No. 20248-209198-01).
[47] Comments (Scoping Comments for EIS) (Citizens for Environmental Rights and Safety) (Aug. 1, 2024) (eDocket No. 20247-209158-01); Notice of Appearance (Citizens for Environmental Rights and Safety) (Aug. 7, 2024) (eDocket No. 20248-209330-01).
[48] Order for Prehearing Conference (Aug. 1, 2024) (eDocket No. 20248-209204-01).
[49] Prehearing Tr. (August 5, 2025) (eDocket No. 20248-209635-02).
[50] Ex. PUC-17 (May 30, 2024, Minutes).
[51] Order for Continued Prehearing Conference (Aug. 6, 2024) (eDocket No. 20248-209284-01).
[52] Other (Aug. 5, 2024) (eDocket No. 20248-209253-01); Public Comment (Page 1 of 6) (Aug. 7, 2024) (eDocket No. 20248-209329-02); Public Comment (Page 2 of 6) (Aug. 7, 2024) (eDocket No. 20248-209329-04); Public Comment (Page 3 of 6) (Aug. 7, 2024) (eDocket No. 20248-209329-06); Public Comment (Page 4 of 6) (Aug. 7, 2024) (eDocket No. 20248-209329-08); Public Comment (Page 5 of 6) (Aug. 7, 2024) (eDocket No. 20248-209329-10); Public Comment (Page 6 of 6) (Aug. 7, 2024) (eDocket No. 20248-209329-12).
[53] Ex. Xcel-24 (Affidavit of Publication for Notice of Public Information and Environmental Impact Statement Scoping Meetings).
[54] Public Comments (Received Email, Mail, Internet Form, and eDockets Part 1 of 7) (Aug. 13, 2024) (eDocket No. 20248-209459-01); Public Comments (Received Email, Mail, Internet Form, and eDockets Part 2 of 7) (Aug. 13, 2024) (eDocket No. 20248-209459-03); Public Comments (Received Email, Mail, Internet Form, and eDockets Part 3 of 7) (Aug. 13, 2024) (eDocket No. 20248-209459-05); Public Comments (Received Email, Mail, Internet Form, and eDockets Part 4 of 7) (Aug. 13, 2024) (eDocket No. 20248-209459-07); Public Comments (Received Email, Mail, Internet Form, and eDockets Part 5 of 7) (Aug. 13, 2024) (eDocket No. 20248-209459-09); Public Comments (Received Email, Mail, Internet Form, and eDockets Part 6 of 7) (Aug. 13, 2024) (eDocket No. 20248-209459-11); Public Comments (Received Email, Mail, Internet Form, and eDockets Part 7 of 7) (Aug. 13, 2024) (eDocket No. 20248-209459-13).
[55] Public Comment (Public Meeting Minutes) (Aug. 13, 2024) (eDocket No. 20248-209459-15).

~~27.~~31. On August 14, 2024, the second prehearing conference was held.[56]

~~28.~~32. On August 27, 2024, NoCapX 2020 and the Prehn Family petitioned the OAH to intervene in the contested case proceeding.[57]

~~29.~~33. On August 28, 2024, OAH filed its first prehearing order.[58] The Applicant also filed comments responding to comments on the scope of the EIS.[59]

~~30.~~34. On September 9, 2024, the OAH issued an order granting the petition to intervene from NoCapX 2020 and the Prehn Family.[60]

~~31.~~35. On September 13, 2024, the EERA filed public comments and a comment from the Putrah Family filed outside of the public comment period.[61]

~~32.~~36. On September 19, 2024, the EERA filed its summary of the scoping process and its recommendations for the scope of the EIS.[62]

~~33.~~37. On September 20, 2024, the Commission filed its notice of Commission meeting for October 3, 2024.[63]

~~34.~~38. On September 21, 2024, NoCapX 2020 and the Prehn Family filed comments on the Commission's meeting notice.[64]

~~35.~~39. On September 26, 2024, the CFERS provided additional comments on route options.[65] On the same day, the Commission filed briefing papers for its October 3, 2024, agenda meeting.[66]

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[56] Prehearing Tr. (August 14, 2024) (eDocket No. 20248-209635-02).
[57] Intervention (NoCapX 2020 and the Prehn Family) (August 27, 2024) (eDocket No. 20248-209823-02).
[58] First Prehearing Order (Aug. 28, 2024) (eDocket No. 20248-209844-02).
[59] Ex. Xcel-25 (Response to Environmental Impact Statement Scoping Comments).
[60] Order Granting Petition to Intervene by NoCapX 2020 and the Prehn Family (Sept. 9, 2024) (eDocket No. 20249-210073-02).
[61] Public Comment (Putrah Family - Comment Outside Comment Period) (Sept. 13, 2024) (eDocket No. 20249-210197-02); Public Comment (Public Comments 1-26) (Sept. 13, 2024) (eDocket No. 20249-210198-04); Public Comments (Public Comments 27-49) (Sept. 13, 2024) (eDocket No. 20249-210198-06); Public Comment (Public Comments 50-96) (Sept. 13, 2024) (eDocket No. 20249-210198-08).
[62] Ex. EERA-5 (Scoping Summary and Recommendations).
[63] Ex. PUC-18 (Notice of Commission Meeting).
[64] Comments (Omissions from Commission Mtg Notice – Prehn Family and NoCapX 2020) (Sept. 21, 2024) (eDocket No. 20249-210398-02).
[65] Citizens for Environmental Rights & Safety Comments (Sept. 26, 2024) (eDocket No. 20249-210505-01).
[66] Ex. PUC-19 (October 3, 2024 Agenda Briefing Papers).

~~36.~~40. On October 1, 2024, the Commission filed a new decision option from Commissioner Tuma.[67] An attachment to the new decision option was filed on October 3, 2024, and that same day the Commission met to consider the scope of the EIS.[68]

~~37.~~41. On October 9, 2024, the Commission issued an order adopting the system alternatives and route alternatives recommended by EERA for inclusion in the EIS and adding one additional alternative to the scope of the EIS.[69]

~~38.~~42. On October 15, 2024, the Commission filed a letter authorizing the Applicant to initiate consultation with the Minnesota SHPO.[70]

~~39.~~43. On November 8, 2024, the Applicant filed a letter to request to remove Segment Alternative 1L.[71]

~~40.~~44. On November 19, 2024, NoCapX 2020 and the Prehn Family filed comments with additional information to consider for the EIS.[72]

~~41.~~45. On December 2, 2024, the EERA filed the scoping decision for the EIS.[73] On December 11, 2024, the EERA filed notice of the EIS scoping decision.[74]

~~42.~~46. On December 18, 2024, the Commission~~ed~~ filed minutes from its October 3, 2024 agenda meeting.[75]

~~43.~~47. On December 23, 2024, the Clean Energy Organizations filed a petition for intervention with the OAH.[76]

~~44.~~48. On January 3, 2025, the OAH granted the Clean Energy Organizations' petition for intervention.[77]

~~45.~~49. On January 8, 2025, the OAH issued its second prehearing order.[78]

~~46.~~50. Between January 31, 2025 and February 12, 2025, the Applicant mailed notice of the EIS scoping decision to landowners with property located either on one

[67] Ex. PUC-20 (October 3, 2024 Agenda – New Decision Option – Commissioner Tuma).
[68] Ex. PUC-21 (October 3, 2024 Agenda – Attachment to Decision Option – Commissioner Tuma).
[69] Ex. PUC-22 (Order Adding Alternative to Scope of Environmental Impact Statement).
[70] Ex. PUC-23 (Letter).
[71] Ex. Xcel-26 (Response to Environmental Impact Statement Scoping Comments).
[72] Comments (Info for DEIS) (Nov. 19, 2024) (eDocket No. 202411-212167-01).
[73] Ex. EERA-6 (Environmental Impact Statement Scoping Decision).
[74] Ex. EERA-7 (Notice of Environmental Statement Scoping Decisions).
[75] Ex. PUC-24 (October 3, 2024 Minutes).
[76] Clean Energy Organizations Petition for Intervention (Dec. 23, 2024) (eDocket No. 202412-213285-01).
[77] Order on Petition to Intervene by the Clean Energy Organizations (Jan. 3, 2025) (eDocket No. 20251-213528-01).
[78] Second Prehearing Order (Jan. 8, 2025) (eDocket No. 20251-213668-01).

of the newly added route or alignment alternatives or on one of the routes originally proposed in the Application.[79] The Applicant also sent this mailing to local government units.[80]

~~47.~~51. On March 10, 2025, comments were filed by MnDOT and No CapX 2020 and the Prehn Family.[81]

~~48.~~52. On March 28, 2025, the Applicant filed Direct Testimony and Schedules of Ellen Heine and Tony Wendland.[82]

~~49.~~53. On May 1, 2025, the OAH issued its third prehearing order.[83]

~~50.~~54. On May 5, 2025, the Applicant filed a letter requesting to expand width for portions of proposed Route Option 2 North and Route Option 2 South.[84]

~~51.~~55. On May 5, 2025, the EERA filed its draft EIS (DEIS).[85]

~~52.~~56. On May 6, 2025, the Commission filed a Notice of Informational Meetings, Public and Evidentiary Hearings, and Availability of DEIS with written comments accepted through June 10, 2025.[86]

~~53.~~57. On May 7, 2025, the Commission filed an affidavit of publication documenting that it had published Notice of Informational Meetings, Public and Evidentiary Hearings, and Availability of DEIS in the *EQB Monitor*.[87]

~~54.~~58. On May 8, 2025, EERA filed a letter explaining that mailed notice of the EIS scoping decision and a New Landowner Packet inadvertently did not get mailed to landowners that were newly affected by the route and alignment alternatives included in the EIS scoping decision in December 2024.[88] EERA explained that this mailing is not required by statute or rule and that it decided against providing this mailing in May 2025 as doing so may cause additional confusion as the notice of the DEIS would arrive around the same time.[89]

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[79] Ex. Xcel-34 (Letter Regarding Mailed Notice of Scoping Decision).
[80] Ex. Xcel-29 at Schedule 4 (E. Heine Direct Testimony and Schedules).
[81] Comments (Minnesota Department of Transportation) (March 10, 2025) (eDocket No. 20253-216230-01); Comments (No CapX 2020 and the Prehn Family) (March 10, 2025) (eDocket No. 20253-216250-01).
[82] Ex. Xcel-29 (E. Heine Direct Testimony and Schedules); Ex. Xcel-30 (T. Wendland Direct Testimony and Schedules).
[83] Third Prehearing Order (May 1, 2025) (eDocket No. 20255-218443-01).
[84] Ex. Xcel-32 (Request to Expand Width).
[85] Ex. EERA-8 (Draft Environmental Impact Statement).
[86] Ex. PUC-26 (Notice of Informational Meetings, Public and Evidentiary Hearings, and Availability of DEIS).
[87] Ex. PUC-27 (Affidavit of Publication).
[88] Letter (May 8, 2025) (eDocket No. 20255-218717-01).
[89] EERA Letter (May 8, 2025) (eDocket No. 20255-218717-01).

~~55.~~59. On May 9, 2025, the OAH issued an order for a prehearing conference.[90]

~~56.~~60. On May 12, 2025, the Applicant filed Rebuttal Testimony of Company witness Heine.[91] On the same day, NoCapX 2020 and the Prehn Family filed comments on notice to landowners.[92]

~~57.~~61. On May 13, 2025, the Applicant filed a letter stating that the Applicant sent a mailing to landowners with property located either on one of the newly added route or alignment alternatives or on one of the routes originally proposed in the Application.[93] This notice was sent to 2,878 landowners, including all of the 1,341 landowners that were not sent the EERA's New Landowner Packet.[94]

~~58.~~62. Also on May 13, 2025, the Commission filed a certificate of service for a mailing of the Notice of Informational Meetings, Public and Evidentiary Hearings, and Availability of DEIS to landowners, federal and state representatives, local governments, and tribal representatives.[95]

~~59.~~63. On May 14, 2025, NoCapX 2020 and the Prehn Family filed comments on the notices provided to the new landowners.[96]

~~60.~~64. On May 16, 2025, the Commission provided an affidavit of mailing of the New Landowner Packet to newly affected landowners.[97]

~~61.~~65. On May 19, 2025, the Applicant filed Surrebuttal Testimony of Company witness Wendland.[98]

~~62.~~66. On May 20, 2025, the EERA filed its certificate of mailing the DEIS and cover letter to public libraries.[99]

~~63.~~67. On May 21, 2025, the Commission filed comments from Duane Tiede.[100]

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[90] Order for Prehearing Conference (May 9, 2025) (eDocket No. 20255-218768-01).
[91] Ex. Xcel-33 (E. Heine Rebuttal Testimony and Schedules).
[92] Comments (May 12, 2025) (eDocket No. 20255-218810-01).
[93] Ex. Xcel-34 (Letter Regarding Mailed Notice of Scoping Decision).
[94] Ex. Xcel-34 (Letter Regarding Mailed Notice of Scoping Decision).
[95] Ex. PUC-28 (Certificate of Service to Paper Recipients).
[96] Comments (May 14, 2025) (eDocket No. 20255-218922-01).
[97] Ex. PUC-29 (Mailing to Newly Affected Landowners).
[98] Ex. Xcel-35 (T. Wendland Surrebuttal).
[99] Ex. EERA-9 (Certificate of Mailing DEIS to Libraries).
[100] Public Comment (Duane Tiede) (May 21, 2025) (eDocket No. 20255-219149-01)

~~64.~~68. On May 27, 2025, a public hearing was held at 11:00 a.m. in Mankato, Minnesota[101] and 6:00 p.~~m~~p. in Waterville, Minnesota.[102] Also on May 27, 2025, the Commission filed its presentation used by Commission Staff at public hearings.[103]

~~65.~~69. On May 28, 2025, a public hearing was held at 11:00 a.m. in Owatonna, Minnesota[104] and at 6:00 p.m. in Zumbrota, Minnesota.[105] Also on May 28, 2025, the Applicant filed a witness list, witness summaries, and a draft exhibit list,[106] and the Commission filed comments from Ryland Eichhorst, Mayor of the City of Oronoco.[107]

~~66.~~70. On May 28, 2025, a public meeting was held virtually at 11:00 a.m.,[108] and in-person at 6:00 p.m. in Faribault, Minnesota.[109] Also on May 29, 2025, the Commission filed three public comments.[110]

~~67.~~71. On May 30, 2025, the ALJ held the evidentiary hearing at the Commission large hearing room in St. Paul, Minnesota.[111] On the same day, the Applicant filed a map of its preferred route,[112] and the Commission filed 11 public comments.[113]

~~68.~~72. Between June 3, 2025 and June 10, 2025, the Commission filed numerous public comments it received on the Application.[114]

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[101] Mankato Pub. Hr. Tr. (May 27, 2025) (eDocket No. 20256-220419-01).
[102] Waterville Pub. Hr. Tr. (May 27, 2025) (eDocket No. 20256-220419-02).
[103] Ex. PUC-30 (Public Hearing Presentation).
[104] Owatonna Pub. Hr. Tr. (May 28, 2025) (eDocket No. 20256-220419-03).
[105] Zumbrota Pub. Hr. Tr. (May 28, 2025) (eDocket No. 20256-220419-04).
[106] Ex. Xcel-37 (Witness List, Witness Summaries, and Draft Exhibit List).
[107] Public Comment (Ryland Eichhorst) (May 28, 2025) (eDocket No. 20255-219315-01).
[108] Virtual Pub. Hr. Tr. (May 29, 2025) (eDocket No. 20256-220419-06).
[109] Faribault Pub. Hr. Tr. (May 29, 2025) (eDocket No. 20256-220419-05).
[110] Public Comment (Jean Bye) (May 29, 2025) (eDocket No. 20255-219331-02); Public Comment (City of Madison Lake) (May 29, 2025) (eDocket No. 20255-219331-01); Public Comment (Brady and Jennifer Taylor 1) (May 29, 2025) (eDocket No. 20255-219330-01); Public Comment (Brady and Jennifer Taylor 2) (May 29, 2025) (eDocket No. 20255-219330-02).
[111] Evid. Hr. Tr. (May 30, 2025) (eDocket No. 20256-220419-07).
[112] Ex. Xcel-36 (Maps of Preferred Route).
[113] Public Comment (Dale and Thomforde New Haven Township Supervisor (1 of 2)) (May 30, 2025) (eDocket No. 20255-219445-01); Public Comment (Dale and Thomforde New Haven Township Supervisor (1 of 2)) (May 30, 2025) (eDocket No. 20255-219445-02); Public Comment (Harly and Daine Krause) (May 30, 2025) (eDocket No. 20255-219444-01); Public Comment (Luis Barajas) (May 30, 2025) (eDocket No. 20255-219442-01); Public Comment (Ryland Eichhorst, Mayor, Oronoco) (May 30, 2025) (eDocket No. 20255-219440-01); Public Comment (Gordon Cariveau Jr and Yvonne Cariveau) (May 30, 2025) (eDocket No. 20255-219439-01); Public Comment (Scott Condes) (May 30, 2025) (eDocket No. 20255-219438-01); Public Comment (Lori Schulz and Joyce Schulz) (May 30, 2025) (eDocket No. 20255-219436-01); Public Comment (Tom Sammon) (May 30, 2025) (eDocket No. 20255-219434-01); Public Comment (Tamra Berg) (May 30, 2025) (eDocket No. 20255-219417-01); and Public Comment (Dale Thomforde) (May 30, 2025) (eDocket No. 20255-219416-01).
[114] Public Comment (Brad Stadsvold) (June 3, 2025) (eDocket No. 20256-219553-01); Public Comment (Michael and Christine Brown) (June 3, 2025) (eDocket No. 20256-219551-01); Public Comment (Mark Jacobs) (June 3, 2025) (eDocket No. 20256-219545-01); Public Comment (Kathryn Mueller) (June 3, 2025) (eDocket No. 20256-219543-01);

~~69.~~73. On June 10, 2025, the Commission filed public comments received from Dodge County.[115]

~~70.~~74. On June 10, 2025, NoCapX 2020 and the Prehn Family filed comments on the DEIS, the merits of the Certificate of Need Application, and on the merits of the Application.[116] On the same day, NoCapX 2020 and the Prehn Family filed comments on the family landowner notice,[117] the landowner mailing list,[118] Department and Xcel Energy responses to landowner mailing information requests, [119] scoping comments, [120] and completeness comments.[121]

~~71.~~75. On June 10, 2025, the EERA filed four public comments.[122] On the same day, the Minnesota Interagency Vegetation Management Planning Working Group filed public comments on the Applicant's vegetation management plan.[123]

~~72.~~76. On June 10, 2025, MnDNR filed comments recommending special permit conditions for the Route Permit.[124]

Public Comment (Sarah Schmidt) (June 4, 2025) (eDocket No. 20256-219573-01); Public Comment (Shawna Hanson) (June 4, 2025) (eDocket No. 20256-219572-01); Public Comment (Andy Hart) (June 4, 2025) (eDocket No. 20256-219571-01); and Public Comment (Angela Just) (June 4, 2025) (eDocket No. 20256-219570-01); Public Comment (Matthew Kuehl) (June 5, 2025) (eDocket No. 20256-219605-01); Public Comment (Matthew Kuehl) (June 5, 2025) (eDocket No. 20256-219605-01); Public Comment (Michael Collins) (June 6, 2025) (eDocket No. 20256-219657-01); Public Comment (Jeff Mattson) (June 6, 2025) (eDocket No. 20256-219655-01); Public Comment (Thomas Gauthier) (June 9, 2025) (eDocket No. 20256-219705-01); Public Comment (Jeff Mattson) (June 9, 2025) (eDocket No. 20256-219704-01); Public Comment (Kevin Quinlan) (eDocket No. 20256-219703-01); Public Comment (Batch 1 06102025 11 Comments) (June 10, 2025) (eDocket No. 20256-219788-03); Public Comment (City of Waseca) (June 10, 2025) (eDocket No. 20256-219788-02); Public Comment (Two Sisters Kitchen and Bar) (eDocket No. 20256-219788-01); and Public Comment (Christopher Bultman) (June 10, 2025) (eDocket No. 20256-219760-01).

[115] Public Comment (Dodge County) (June 10, 2025) (eDocket No. 20256-219808-01).

[116] NoCapX 2020 and the Prehn Family (NoCapX 2020 and the Prehn Family DEIS and Final Comments) (June 10, 2025) (eDocket No. 20256-219811-01).

[117] NoCapX 2020 and the Prehn Family (NoCapX 2020 and the Prehn Family Landowner Notice Comments) (June 10, 2025) (eDocket No. 20256-219811-02).

[118] NoCapX 2020 and the Prehn Family (NoCapX 2020 and the Prehn Commerce Landowner Mailing List) (June 10, 2025) (eDocket No. 20256-219811-03).

[119] NoCapX 2020 and the Prehn Family (NoCapX 2020 - Prehn DOC and Xcel Responses to Landowner Mailing Info Requests) (June 10, 2025) (eDocket No. 20256-219811-04).

[120] NoCapX 2020 and the Prehn Family (NoCapX 2020 - Prehn Family Scoping Comments) (June 10, 2025) (eDocket No. 20256-219811-06).

[121] NoCapX 2020 and the Prehn Family (NoCapX - Prehn Completeness Comments) (June 10, 2025) (eDocket No. 20256-219811-07).

[122] Public Comment (Erin Glorbigen) (June 10, 2025) (eDocket No. 20256-219768-01); Public Comment (Jeanne Allen) (June 10, 2025) (eDocket No. 20256-219770-01); Public Comment (Nathan Brandt) (June 10, 2025) (eDocket No. 20256-219809-01); Public Comment (Erin Glorvigen) (June 10, 2025) (eDocket No. 20256-219803-01).

[123] Hearing Comments (June 10, 2025) (eDocket No. 20256-219785-01).

[124] Comments (Minnesota Department of Natural Resources) (June 10, 2025) (eDocket Nos. 20256-219807-01, 20256-219807-02, 20256-219807-03, and 20256-219807-04).

~~73.~~77. On June 10, 2025, MnDOT filed comments on the DEIS, specifically focusing on Route Segment 17.[125]

~~74.~~78. On June 10, 2025, the Applicant filed comments on the DEIS.[126]

~~75.~~79. On June 11, 2025, the Commission filed six public comments it received on the Application.[127]

~~76.~~80. On June 16, 2025, the Commission filed a batch of public comments and one public comment it received on the Application and the DEIS.[128]

~~77.~~81. On June 17, 2025, the Commission filed public comments received from the Blue Earth County Public Works Department.[129]

~~78.~~82. On June 30, 2025, the Commission filed sign-in sheets,[130] hearing exhibits,[131] public hearing transcripts,[132] and the evidentiary hearing transcript.[133]

83. On July 25, 2025, ~~the~~ EIP staff, formerly EERA staff, filed its final EIS (FEIS)~~.~~,[134] and the Notice of Availability of the Final Environmental Impact Statement and Comment Period.[135]

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[125] Comments (MnDOT) (June 10, 2025) (eDocket No. 20256-219788-03).
[126] Ex. Xcel-38 (Comments on DEIS).
[127] Public Comment (John & Kristine Paro) (June 11, 2025) (eDocket No. 20256-219823-01); Public Comment (Loren Quaale) (June 11, 2025) (eDocket No. 20256-219822-01); Public Comment (Jennifer Bromeland) (June 11, 2025) (eDocket No. 20256-219821-01); Public Comment (Gary Henslin) (June 11, 2025) (eDocket No. 20256-219820-01); Public Comment (Zach Knutson) (June 11, 2025) (eDocket No. 20256-219818-01); Public Comment (Jeannie Mattson) (June 11, 2025) (eDocket No. 20256-219817-01).
[128] Public Comment Batch (June 16, 2025) (eDocket No. 20256-219908-01); Public Comment (Dan Sheady) (June 16, 2025) (eDocket No. 20256-219901-01).
[129] Public Comment (Blue Earth Public Works Department) (June 17, 2025) (eDocket No. 20256-219968-01).
[130] Other (Sign-In Sheet – Mankato Public Hearing) (June 30, 2025) (eDocket No. 20256-220421-05); Other (Sign-In Sheet – Waterville Public Hearing) (June 30, 2025) (eDocket No. 20256-220421-06); Other (Sign-In Sheet – Owatonna Public Hearing) (June 30, 2025) (eDocket No. 20256-220421-07); Other (Sign-In Sheet – Faribault Public Hearing) (June 30, 2025) (eDocket No. 20256-220421-08); Other (Sign-In Sheet Zumbrota Public Hearing) (June 30, 2025) (eDocket No. 20256-220421-09).
[131] Exhibit – Hearings (Exhibit B – Waterville Public Hearing) (June 30, 2025) (eDocket No. 20256-220421-01); Exhibit – Hearings (Exhibit C – Zumbrota Hearing) (June 30, 2025) (eDocket No. 20256-220421-02); Exhibit – Hearings (Exhibit D – Zumbrota Hearing) (June 30, 2025) (eDocket No. 20256-220421-03); Exhibit – Hearings (Exhibit E – Zumbrota Hearing) (June 30, 2025) (eDocket No. 20256-220421-04).
[132] Transcripts (Public Hearing – Mankato – 5-27-25) (June 30, 2025) (eDocket No. 20256-220419-01); Transcripts (Public Hearing – Waterville – 5-27-25) (June 30, 2025) (eDocket No. 20256-220419-02); Transcripts (Public Hearing – Owatonna - 5-28-25) (June 30, 2025) (eDocket No. 20256-220419-03); Transcripts (Public Hearing – Zumbrota – 5-28-25) (June 30, 2025) (eDocket No. 20256-220419-04); Transcripts (Public Hearing – Faribault – 5-29-25) (June 30, 2025) (eDocket No. 20256-220419-05); Transcripts (Public Hearing –Virtual – 5-29-25) (June 30, 2025) (eDocket No. 20256-220419-06).
[133] Transcripts (Evidentiary Hearing – 5-30 – 25) (June 30, 2025) (eDocket No. 20256-220419-07).
[134] Ex. ~~EERA-10~~PUC-31- PUC-31 (FEIS).
[135] Ex. PUC-32 (Notice of Availability of the FEIS and Comment Period)

~~79.~~

84. On August 15, 2025, EIP staff filed an affidavit of publication of the Final EIS published in the *EQB Monitor*,[136] and the certificate of mailing of the Final EIS to the local libraries.[137]

~~80.~~85. On August 1, 2025, Applicant filed its Response to Hearing Comments, Proposed Findings of Fact, Conclusions of Law, and Recommendations, and Post-Hearing Brief.

III. THE PROPOSED PROJECT

A. Overview of the Project

~~81.~~86. The proposed Project involves the construction of a new, approximately 130-mile, 345 kV transmission line between the existing Wilmarth Substation in Mankato, Minnesota and the Mississippi River near Kellogg, Minnesota, and a new approximately 20-mile 161 kV transmission line between the North Rochester Substation and an existing transmission line northeast of Rochester, Minnesota.[138] The Project is divided into four segments: Segments 1, 2, and 3 making up the 345 kV portion and Segment 4 making up the 161 kV portion.[139] These four segments are described as follows:

- Segment 1 is a new 48-to-54-mile 345 kV transmission line that will be constructed from the existing Wilmarth Substation and a point near the existing West Faribault Substation.[140]

- Segment 2 is a new 34-to-42 mile 345 kV transmission line that will be constructed between a point near the existing West Faribault Substation and the existing North Rochester Substation.[141]

- Segment 3 is a new 345 kV transmission line that will be constructed between the existing North Rochester Substation and the Mississippi River, near Kellogg, Minnesota.[142] This segment converts approximately 27 miles of existing 161/345 kV transmission line to 345/345 kV operation and installs approximately 16 miles of new 345 kV circuit on an

[136] Affidavit of Publication (PUC-EIP) (August 12, 2025) (eDocket No. 20258-222162-01)
[137] Other – Certificate of Mailing (PUC-EIP) (July 31, 2025) (eDocket No. 20258-222165-01)
[138] Ex. Xcel-15 at 1 (Application).
[139] Ex. Xcel-15 at 1 (Application).
[140] Ex. Xcel-15 at 1 (Application); Ex. ~~EERA-10~~ PUC-31 at 16 (FEIS).
[141] Ex. Xcel-15 at 1 (Application); Ex. ~~EERA-10~~ PUC-31 at 16 (FEIS).
[142] Ex. Xcel-15 at 1 (Application); Ex. ~~EERA-10~~ PUC-31 at 16 (FEIS).

existing 345 kV transmission line.[143] Segment 3 would displace the 161 kV line where it is currently double-circuited with an existing 345 kV line.[144]

- Segment 4 is the relocation of a portion of an existing 161 kV transmission line which is needed because a portion of the new 345 kV transmission line in Segment 3 would displace the 161 kV transmission line where it is currently double-circuited with an existing 345 kV transmission line.[145]

~~82.~~87. These four segments, collectively, will make up the transmission line portion of the Project.[146] The proposed Project may span Blue Earth, Le Sueur, Waseca, Rice, Dodge, Olmsted, Goodhue, Winona, and Wabasha counties in Minnesota depending on the final route selected by the Commission.[147] The Project will also include upgrades at the existing Wilmarth and North Rochester substations.[148] Depending on the route selected, the Project may also include upgrades to the Eastwood Substation.[149]

~~83.~~88. The Project was studied, reviewed, and approved as part of the Long-Range Transmission Planning (LRTP) Tranche 1 Portfolio by MISO's Board of Directors in July 2022 as part of its 2021 Transmission Expansion Plan (MTEP21) report.[150]

~~84.~~89. The LRTP Tranche 1 Portfolio will provide significant benefits to the Midwest subregion of the MISO footprint by facilitating more reliable, safe, and affordable energy delivery.[151] The Project, designated as a portion of LRTP4 in MTEP21, is a key part of the LRTP Tranche 1 Portfolio.[152] The transmission system in southern Minnesota is the nexus between significant renewable resources in Minnesota and the Dakotas and the regional load center of the Twin Cities and load centers to the east in Wisconsin.[153] The amount of renewable energy generation on the electric system is increasing as aging traditional generation resources retire and are replaced with renewable resources.[154] This Project will provide additional transmission capacity that is needed to reliably deliver this renewable energy to customers.[155] This Project will

[143] Ex. Xcel-15 at 1 (Application); Ex. ~~EERA-10~~ PUC-31 at 16 (FEIS).
[144] Ex. Xcel-15 at 1 (Application); Ex. ~~EERA-10~~ PUC-31 at 16 (FEIS).
[145] Ex. Xcel-15 at 2 (Application); Ex. ~~EERA-10~~ PUC-31 at 16 (FEIS).
[146] Ex. Xcel-15 at 2 (Application).
[147] Ex. Xcel-15 at 2 (Application).
[148] Ex. Xcel-15 at 25 (Application).
[149] Ex. Xcel-15 at 25 (Application).
[150] Ex. Xcel-15 at 4 (Application).
[151] Ex. Xcel-15 at 4 (Application).
[152] Ex. Xcel-15 at 3 (Application).
[153] Ex. Xcel-15 at 3 (Application).
[154] Ex. Xcel-15 at 4 (Application).
[155] Ex. Xcel-15 at 4 (Application).

relieve overloads on existing transmission facilities and will also reduce congestion on the transmission system resulting in lower energy costs.[156]

B. Transmission Line Structures and Conductor Design

~~85.~~90. For the 345 kV portions of the Project in Segments 1 and 2, single-pole steel structures will be primarily used.[157] For the portions of the 345 kV line that will be co-located with existing 115 kV or 345 kV transmission lines, the 115 kV and 345 kV circuits will be constructed in a double circuited configuration.[158] For portions of the Project where the new 345 kV will be co-located with existing 69 kV transmission lines, Xcel Energy will underbuild these existing 69 kV transmission lines with the new 345 kV line.[159] For the remaining portions of the 345 kV transmission line, single-circuit structures will be used. Both the single-circuit and double-circuit structures are typically 85 to 175 feet tall and would be spaced approximately 1,000 feet apart.[160] No new structures are anticipated to be required for Segment 3.[161] This segment involves converting an existing 161/345 kV transmission line to 345/345 kV operation or installing a new 345 kV circuit on existing double-circuit structures.[162]

~~86.~~91. For 161 kV transmission line portion of the Project in Segment 4, single-pole, self-weathering steel structures will be used.[163] In some locations, the 161 kV line will be single-circuit, and in other locations the 161 kV line will be double-circuited with existing 69 kV or 161 kV transmission lines on double-circuit structures.[164] Both the single-circuit and double-circuit structures are typically 75 to 140 feet tall and would be spaced approximately 350 to 700 feet apart.[165]

~~87.~~92. The Project will use a double bundled 2X636 kcmil 36/7 Twisted Pair ACSR "Grosbeak" conductor for the new 345 kV transmission line.[166] New double bundled 954 kcmil ACSS/TW 20/7 "Cardinal" conductor will be installed as the second 345 kV circuit on the existing structures between the North Rochester Substation and the Mississippi River in Segment 3 to match the wire type of the existing circuit.[167]

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[156] Ex. Xcel-15 at 4 (Application).
[157] Ex. Xcel-15 at 20 (Application); Ex. ~~EERA-10~~ PUC-31 at 52 (FEIS).
[158] Ex. Xcel-15 at 20-21 (Application); Ex. ~~EERA-10~~ PUC-31 at 53 (FEIS).
[159] Ex. Xcel-15 at 21 (Application); Ex. ~~EERA-10~~ PUC-31 at 53 (FEIS).
[160] Ex. Xcel-15 at 21-22, Table 2-1 (Application); Ex. ~~EERA-10~~ PUC-31 -at 52 (FEIS).
[161] Ex. Xcel-15 at 6-7 (Application).
[162] Ex. Xcel-15 at 6-7 (Application).
[163] Ex. Xcel-15 at 22 (Application); Ex. ~~EERA-10~~ PUC-31 at 54 (FEIS).
[164] Ex. ~~EERA-8~~ PUC-31 at 54 (FEIS).
[165] Ex. Xcel-15 at 22-24, Table 2-2 (Application); Ex. PUC-31 ~~EERA-10~~at 54-55 (FEIS).
[166] Ex. Xcel-15 at 24 (Application).
[167] Ex. Xcel-15 at 24 (Application).

~~88.~~93. The 161 kV portion of the Project in Segment 4 will use a single 2x397.5 kcmil 36/7 Twisted Pair ZTACSR "Ibis" to match the wire type of the rest of the existing 161 kV line. Rebuilt sections of 115 kV and 69 kV transmission lines will use 2x336 kcmil 36/7 Twisted Pair ACSR "Linnet" conductor in a double bundle and single wire configuration, respectively.[168]

~~89.~~94. The Project will be designed to meet or surpass relevant local and state codes including National Electric Safety Code (NESC) and Xcel Energy's standards.[169] Applicable standards will be met for construction and installation, and applicable safety procedures will be followed during design, construction, and after installation.[170]

C. Associated Facilities

~~90.~~95. Associated facilities for the Project include modifications to the existing Wilmarth and North Rochester substations in Minnesota.[171] Depending on the route selected, the Project may also include modifications to the Eastwood Substation.[172]

~~91.~~96. The existing Wilmarth Substation, owned by Xcel Energy, is the western endpoint of the Project and is located in Segment 1.[173] This substation is located on the northern edge of the City of Mankato, adjacent to Xcel Energy's refuse derived fuel plant, just east of the Minnesota River.[174] New substation equipment necessary to accommodate the proposed 345 kV transmission line will be installed at the Wilmarth Substation.[175] Modifications would include: (1) two new 345 kV circuit breakers; (2) four new 345 kV group-operated switches; (3) three new one-phase bus stands; (4) rigid bus to extend the existing rigid bus to the switches; and (5) a flexible bus to connect the switches to the breakers.[176] An approximately 0.8 acre expansion of the current fenced area and pad on the northeast corner of the Wilmarth Substation will be installed to accommodate the new substation equipment.[177]

~~92.~~97. The existing Eastwood Substation is owned by the Applicant and is located near the eastern boundary of the city of Mankato.[178] Modifications to the Eastwood Substation would only be applicable if Segment 1 South were to be selected

[168] Ex. Xcel-15 at 24 (Application).
[169] Ex. Xcel-15 at 24 (Application).
[170] Ex. Xcel-15 at 24 (Application).
[171] Ex. Xcel-15 at 25 (Application); Ex. ~~EERA-10~~ PUC-31 at 56 (FEIS).
[172] Ex. Xcel-15 at 25 (Application); Ex. ~~EERA-10~~ PUC-31 at 57 (FEIS).
[173] Ex. Xcel-15 at 25 (Application); Ex. ~~EERA-10~~ PUC-31 at 57 (FEIS).
[174] Ex. Xcel-15 at 25 (Application); Ex. ~~EERA-10~~ PUC-31 at 57 (FEIS).
[175] Ex. Xcel-15 at 25 (Application); Ex. ~~EERA-10~~ PUC-31 at 57 (FEIS).
[176] Ex. ~~EERA-10~~ PUC-31 at 57 (FEIS).
[177] Ex. Xcel-15 at 25 (Application); Ex. ~~EERA-10~~ - PUC-31at 57 (FEIS).
[178] Ex. Xcel-15 at 25 (Application); Ex. ~~EERA-10~~ PUC-31 at 57 (FEIS).

by the Commission.[179] Modifications, if needed, would include: (1) installation of approximately 500 feet of new 69 kV transmission line to connect an existing 69 kV line at the substation; and (2) installation of new substation equipment to accommodate the interconnection of this new line, which would include a new 69/115 kV transformer on the north side of the site.[180] The modifications would be necessary to re-terminate the existing 69 kV line at the Eastwood Substation.[181] In this scenario, the existing 69 kV transmission line would be removed between the Eastwood Substation and the Wilmarth Substation and replaced with the Project's 345 kV transmission line.[182]

~~93.~~98. The existing North Rochester Substation is located near Pine Island, Minnesota at the endpoints of Segment 3 and Segment 4.[183] New substation equipment necessary to accommodate the proposed 345 kV transmission lines will be installed at the North Rochester Substation.[184] The equipment needed would include new 345 kV circuit breakers, new 345 kV switches, new rigid and flexible bus, bus stand and an expansion of the Electrical Equipment Exposure (EEE).[185] No expansion of the current fenced area will be required to accommodate this new substation equipment.[186]

D. Route Width and Right-of-Way

1. Route Width

~~94.~~99. The route width is typically wider than the right-of-way (ROW) needed for the transmission line.[187] The additional route width provides the permittee the flexibility in constructing the line to make alignment adjustments during final design in coordination with landowners, avoid sensitive natural resources, and to manage construction constraints as practical.[188] The route width and anticipated alignment adjustments are intended to balance flexibility and predictability.[189] The transmission line must be constructed within the route width designated by the Commission unless, after permit issuance, permission to proceed outside of the route is approved by the Commission.[190]

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[179] Ex. ~~EERA-10~~ PUC-31 at 57 (FEIS).
[180] Ex. ~~EERA-10~~ PUC-31 at 57 (FEIS).
[181] Ex. ~~EERA-10~~ PUC-31 at 57 (FEIS).
[182] Ex. ~~EERA-1~~ PUC-31 at 57 (FEIS).
[183] Ex. Xcel-15 at 25 (Application); Ex. ~~EERA-10~~ PUC-31 at 59 (FEIS).
[184] Ex. Xcel-15 at 25 (Application); Ex. ~~EERA-10~~ PUC-31 at 59 (FEIS).
[185] Ex. ~~EERA-10~~ PUC-31 at 59 (FEIS).
[186] Ex. Xcel-15 at 25 (Application); Ex. ~~EERA-10~~ PUC-31 at 59 (FEIS).
[187] Ex. ~~EERA-10~~ PUC-31 at 60 (FEIS).
[188] Ex. Xcel-15 at 19 (Application).
[189] Ex. ~~EERA-10~~ PUC-31 at 60 (FEIS).
[190] Ex. ~~EERA-10~~ PUC-31 at 60 (FEIS).

~~95.~~100. For this Project, the Applicant requested a route width of 1,000 feet (500 feet to either side of the proposed centerlines), with wider areas around Project substations, locations with routing constraints, and where route options come together.[191]

~~96.~~101. On May 12, 2025, the Applicant requested a route width expansion in a letter filed to the Commission.[192] This route expansion is needed due to a recently approved transmission project from MISO that involves adding a second 345 kV circuit to the existing Hampton to North Rochester 345 kV transmission line.[193] The approved transmission line prevents the proposed Project from double-circuiting with this existing line as proposed in the Application.[194] The Applicant explained that portions of Segment 2 North and Segment 2 South near the North Rochester Substation will now need to be constructed parallel to the existing 345 kV transmission project in new ROW.[195] There is one location in the requested ROW that bears south and deviates from being parallel to the existing line and would extend beyond the route width included in the Application due to a residence located south of the existing line.[196] As a result, the Applicant requested the route width be expanded to include an area within 500 feet of the new proposed transmission centerline.[197] The Applicant mailed notices to the 46 affected landowners of the proposed route width expansion and revised alignment.[198] The potential environmental and human impacts of the Project in the area of the requested route width expansion were included in the Final EIS.

2. Right-of-Way

~~97.~~102. The ROW is the specific area required for the safe construction and operation of the transmission line, as defined by the NESC and the North American Electric Reliability Corporation (NERC) reliability standards.[199] The ROW must be within the designated route and is the area by which the Applicant obtains rights from landowners to construct, operate, and maintain the transmission line.[200] The 345 kV

[191] Ex. ~~EERA-10~~ PUC-31 at 60 (FEIS).
[192] Ex. Xcel-32 at 1 (Request to Expand Width); Ex. Xcel-33 at 1:15-20 (E. Heine Rebuttal Testimony).
[193] Ex. Xcel-32 at 1 (Request to Expand Width); Ex. Xcel-33 at 2:3-13 (E. Heine Rebuttal Testimony).
[194] Ex. Xcel-32 at 1 (Request to Expand Width); Ex. Xcel-33 at 2:3-13 (E. Heine Rebuttal Testimony).
[195] Ex. Xcel-32 at 2 (Request to Expand Width); Ex. Xcel-33 at 1:15-20 (E. Heine Rebuttal Testimony).
[196] Ex. Xcel-33 at 2:16-22 (E. Heine Rebuttal Testimony).
[197] Ex. Xcel-33 at 2:16-3:9 (E. Heine Rebuttal Testimony); Ex. Xcel-32 at Attachment A, Figures 1 and 2 (Request to Expand Width).
[198] Ex. Xcel-33 at 3:21-26 (E. Heine Rebuttal Testimony).
[199] Ex. ~~EERA-10~~ PUC-31 at 61 (FEIS).
[200] Ex. ~~EERA-10~~ PUC-31 at 61 (FEIS).

portion of the Project will require a 150-foot wide ROW.[201] The 161 kV portion of the Project will require an 80[202] to 100-foot wide ROW.[203]

~~98.~~103. Where the proposed transmission lines parallel existing roadways or other infrastructure (for example, other transmission lines), the amount of new required ROW may be reduced.[204] The Applicant's typical practice when paralleling existing road ROW is to place the poles on adjacent private property near the ROW.[205] With this pole placement, the transmission line shares the existing infrastructure ROW, thereby reducing the size of the easement required from landowner(s).[206] For example, if the required ROW is 150 feet, and the transmission pole is placed 5 feet off an existing road ROW, only an 80-foot ROW easement would be required from the landowner.[207] The additional 70 feet of required ROW would be shared with the road ROW.[208]

E. Project Schedule

~~99.~~104. The Applicant anticipates that it will start construction of the Project in the fourth quarter of 2026 or the first quarter of 2027 and place the Project in service in the first quarter of 2030.[209] Table 1 provides the current permitting and construction schedule for the Project.[210]

Table 1. Anticipated Project Schedule

Activity	Estimated Dates
Minnesota Certificate of Need and Route Permit for Issued	Fourth Quarter 2025
Land Acquisition Begins	Fourth Quarter 2025
Survey and Transmission Line Design Begins	Third Quarter 2024
Other Federal, State, and Local Permit Issued	Third/Fourth Quarter 2026[211]
Start Right-of-Way Clearing	Third Quarter 2026
Start Project Construction	Fourth Quarter 2026 or First Quarter 2027
Project In-Service	First Quarter 2030

[201] Ex. Xcel-15 at 20 (Application); Ex. ~~EERA-10~~ PUC-31 at 62 (FEIS).
[202] In the Application, the Applicant stated that the ROW for the 161 kV line would be 100 feet. There are portions of the 161 kV line that are proposed to be double-circuited with existing transmission lines that have a narrower ROW. For these portions of the route, the right-of-way may only be 80 feet to stay within the existing ROW.
[203] Ex. Xcel-15 at 20 (Application); Ex. ~~EERA-10~~ PUC-31 at 62 (FEIS).
[204] Ex. ~~EERA-10~~ PUC-31 at 61 (FEIS).
[205] Ex. ~~EERA-10~~ PUC-31 at 61 (FEIS).
[206] Ex. ~~EERA-10~~ PUC-31 at 61 (FEIS).
[207] Ex. ~~EERA-10~~ PUC-31 at 61 (FEIS).
[208] Ex. ~~EERA-10~~ PUC-31 at 61 (FEIS).
[209] Ex. Xcel-15 at 26-27 (Application); Ex. Xcel-30 at 3:5-7 (T. Wendland Direct Testimony).
[210] Ex. Xcel-15 at 27 (Application); Ex. Xcel-30 at 3:8 (T. Wendland Direct Testimony).
[211] Ex. Xcel-15 at 26 (Application)

F. Project Costs

~~100.~~105. Xcel Energy estimates that the Project will cost $436.8 million to $589.7 million depending on the route selected.[212] These costs are based on specific routes for both the 345 kV and 161 kV transmission lines.[213]

G. Permittee

~~101.~~106. Northern States Power Company, a Minnesota corporation, doing business as Xcel Energy, is the requested permittee for the Project.[214]

IV. PUBLIC PARTICIPATION

A. Pre-Application Filing Public Outreach

~~102.~~107. Prior to filing the Application, Xcel Energy held two rounds of open houses, in May and September 2023, to gather information about potential route alternatives and answer questions from the public about the Project.

~~103.~~108. Xcel Energy sent out two mailers to approximately 17,000 recipients in the Project Study Area to provide notice of the May 2023 and September 2023 open houses to landowners and agencies.[215] In addition to providing information on dates and locations of the open houses, notifications also included a general Project description, a Project schedule, a map of the Project Study Area, the Project's website address, and Project contact information. Open houses were also promoted on Xcel Energy's social media accounts and advertised in the Faribault Daily News, Kasson Dodge County Independent, Kenyon Leader, Lake Crystal Tribune, Mankato Free Press, Plainview News, Rochester Post Bulletin, Wabasha County Herald, Waseca County News, Waterville LifeEnterprise, Winona Daily News, and Zumbrota News Record.[216]

~~104.~~109. In May 2023, eight open house meetings were held for the Project including: six in-person events, one live virtual event, and one on-demand self-guided open house was available on the Project website.[217]

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[212] Ex. Xcel-35 at 2:21 (T. Wendland Surrebuttal Testimony).
[213] Ex. Xcel-30 at 4:17-5:1-2 (T. Wendland Direct Testimony).
[214] Ex. Xcel-15 at 11 (Application).
[215] Ex. Xcel-15 at 337 (Application).
[216] Ex. Xcel-15 at 337 (Application); Ex. Xcel-21 at 2 (Notice of Filing Application Compliance Filing).
[217] Ex. Xcel-15 at 337 (Application).

~~105.~~110. A total of 68 people attended the in-person open houses at the Goodhue County Fairgrounds, 27 people attended the in-person open houses in Rice County Fairgrounds, 20 people attended the in-person open houses at the Country Inn & Suites by Radisson in Mankato, Minnesota, and 3 people logged on to attend the live virtual meetings.[218] A total of 145 comments were submitted, including: 38 through in-person comment forms, 17 through online comment forms, 28 through in-person mapping stations, 26 through the online comment map, 19 through the Project email, and 17 through the Project hotline.[219]

~~106.~~111. In September 2023, an additional five open house meetings were held for the Project, including: three in-person events, one live virtual event, and the on-demand self-guided virtual open house available on the Project website.[220] A total of 50 people attended the in-person open house at the Goodhue County Fairgrounds in Zumbrota, Minnesota, 28 people attended the in-person open house at the Country Inn & Suites by Radisson in Mankato, Minnesota, 32 people attended the in-person open house at the Rice County Fairgrounds in Faribault, Minnesota, and 5 people logged on to attend the live virtual meetings.[221] A total of 76 comments were submitted during this period, with 9 at the in-person house in Zumbrota, 4 at the in-person open house in Mankato, and 11 at the in-person open house in Faribault.[222]

B. Post-Application Filing Public Outreach

112. After filing the Application, the Applicant continued to engage with the public about the Project by updating the Project website on multiple occasions to keep the public informed about the dates and times for the EIS scoping meetings, the route alternatives included in the scoping decision, and how to comment in the proceeding.[223]

~~107.~~113. From July 8 to 11, 2025, five (5) in-person and two (2) virtual public information and EIS scoping meetings were held throughout the project area. In-person meetings were held in Mankato, Waterville, Faribault, Pine Island, and Kellogg, Minnesota.[224]

~~108.~~114. Xcel Energy also sent out a mailing in January and February 2025 to local units of government and landowners that provided information about the EIS scoping decision and the new route alternatives that would be studied as part of the

[218] Ex. Xcel-15 at 337 (Application).
[219] Ex. Xcel-15 at 337-338 (Application).
[220] Ex. Xcel-15 at 338 (Application).
[221] Ex. Xcel-15 at 338 (Application).
[222] Ex. Xcel-15 at 338 (Application).
[223] Ex. Xcel-29 at 24:21-24 (E. Heine Direct Testimony).
[224] Ex. PUC-13

EIS.[225] This mailing provided information about the Project, information on how to submit public comments, and a map of all of the route and alignment alternatives being studied in the EIS.[226]

C. Public Comments Received During and Following the Public Hearings

~~109.~~115. Comments on the Application and the DEIS were gathered during in-person and virtual public hearings held on May 27, 28, and 29, 2025. The dates and times for these public hearings were provided above. Written public comments were received until June 10, 2025. Due to the volume of comments, a summary of public comments is attached as **Addendum 2**.

V. TRIBAL, FEDERAL, STATE, AND LOCAL GOVERNMENT PARTICIPATION

A. Applicant's Outreach

~~110.~~116. Prior to submitting the Application, Xcel Energy initiated outreach to tribal, federal, state, and local agencies through meetings and Project notification letters.[227]

1. Tribal Nations

~~111.~~117. Xcel Energy engaged with all Tribal Nations sharing geography with Minnesota, including those Tribal Nations in nearest proximity to the Project.[228] On May 1, 2023, initial outreach letters were sent to all federally recognized Tribes in Minnesota and Tribes currently located in other states that have ancestral interest in the Minnesota counties crossed by the Project.[229] A second follow up letter was sent to Tribal contacts on October 31, 2023.[230] The letter introduced the Project and invited tribal comments and ongoing communications with Tribal sovereign nations having an historical interest in the Project Study Area.[231]

~~112.~~118. In May 2023, representatives from the Prairie Island Indian Community (PIIC) contacted Xcel Energy and noted that one of the proposed route options crossed lands that were owned by the Tribe.[232] On July 17, 2023, Xcel Energy

[225] Ex. Xcel-29 at 24:24-25:3 (E. Heine Direct Testimony).
[226] Ex. Xcel-34 at 2 (Letter Regarding Mailed Notice of Scoping Decision).
[227] Ex. Xcel-15 at 323 (Application).
[228] Ex. Xcel-15 at 324 (Application).
[229] Ex. Xcel-15 at 324 (Application).
[230] Ex. Xcel-15 at 324 (Application).
[231] Ex. Xcel-15 at 323-324 (Application).
[232] Ex. Xcel-15 at 325 and Appendix M (Application).

and PIIC discussed the potential impacts of the Project on PIIC's property, which is located on the east side of U.S. Highway 52.[233] On November 15, 2023, PIIC sent a letter to Xcel Energy noting their concerns with the Segment 4 East.[234] To address these concerns, the Applicant identified an additional alignment alternative, Alignment Alternative 4F, to parallel the highway on the southwestern side of U.S. Highway 52.[235] On December 14, 2023, Xcel Energy had a call with PIIC to discuss the overall scope of the route options in Segment 4, including the new alignment alternative.[236] On December 18, 2023, Xcel Energy emailed PIIC a map of the proposed route alternatives for Segment 4.[237]

~~113.~~119. On December 12, 2023, the Lower Sioux Indian Community responded Xcel Energy's October 31, 2023 letter and requested to be identified as a consulting party on the Project and receive more detailed information regarding Segment 1 and Segment 4.[238]

2. Federal Agencies

~~114.~~120. The Applicant sent initial outreach letters in May 2023 to the following federal agencies: U.S. Army Corps of Engineers, Federal Aviation Administration, U.S. Department of Agriculture, U.S. Bureau of Indian Affairs, U.S. Fish and Wildlife Service, and the U.S. Environmental Protection Agency.[239] The letter introduced the Project and requested input regarding public and environmental resources that may be located within the Project Study Area, or resources that could potentially be affected by the Project.[240]

~~115.~~121. The U.S. Army Corps of Engineers responded to the Project notification letter on May 8, 2023, and on May 9, 2023, provided contact information for the project manager who will evaluate the Applicant's Section 404 permit once a route has been ordered.[241] The Applicant responded to the U.S. Army Corps of Engineers' May 8, 2023 letter with Project updates.[242]

~~116.~~122. The Federal Aviation Administration responded to the Project notification letter on May 9 and May 10, 2023 and directed the Applicant to use the Notice Criteria Tool to determine whether Form 7460-1, Notice of Proposed

[233] Ex. Xcel-15 at 325 and Appendix M (Application).
[234] Ex. Xcel-15 at 325 and Appendix M (Application).
[235] Ex. Xcel-15 at 136, 325 and Appendix M (Application).
[236] Ex. Xcel-15 at 325 and Appendix M (Application).
[237] Ex. Xcel-15 at 325 and Appendix M (Application).
[238] Ex. Xcel-15 at Appendix M (Application).
[239] Ex. Xcel-15 at 326 (Application).
[240] Ex. Xcel-15 at 324 and Appendix M (Application).
[241] Ex. Xcel-15 at 326 (Application).
[242] Ex. Xcel-15 at 326 (Application).

Construction of Alteration is required for the Project.[243] The Federal Aviation Administration contact indicated the agency could meet with the Applicant to further review the Project as needed.[244]

~~117.~~123. The U.S. Department of Agriculture responded to the Applicant's May 2023 outreach letter indicating that the agency will review the proposed routes to ensure the proposed routes do not intersect with any of the agency's easement.[245] The Applicant provided the agency with maps on June 22, 2023 showing the current routes for the Project.[246] The Applicant will continue to coordinate and consult with the agency to identify easements crossed by the Project.[247]

~~118.~~124. The U.S. Bureau of Indian Affairs responded through the Project website comment tool that the agency reviewed the map provided in May 2023 and found the proposed routes are not close to any tribal lands in the State, but indicated that the PIIC would be the closest tribe.[248] The Applicant indicated it will continue to consult with the agency for the Project.[249]

~~119.~~125. Xcel Energy provided a copy of the Information for Planning and Consultation report for the Project Study Area and the initial Project letter to the U.S. Fish and Wildlife Service (USFWS) in May 2023.[250] In a follow up meeting on September 8, 2023, USFWS staff noted a new eagle ruling was pending and was expected to be final at the end of 2023.[251] The agency recommended waiting for this final rule, which was published on February 12, 2024, to determine how it would impact the Project.[252] The Applicant will continue to coordinate with the USFWS on the application of this new rule to this Project and other relevant requirements.[253]

3. State Agencies

~~120.~~126. Xcel Energy had a call with MnDNR on July 17, 2023 to go over the Project, preliminary route alternatives for the Project, and to discuss natural resource concerns.[254] MnDNR requested that a formal Natural Heritage Information System request for the Project be made through the Minnesota Conservation

[243] Ex. Xcel-15 at 326 (Application).
[244] Ex. Xcel-15 at 327 (Application).
[245] Ex. Xcel-15 at 327 and Appendix M (Application).
[246] Ex. Xcel-15 at 327 and Appendix M (Application).
[247] Ex. Xcel-15 at 327 and Appendix M (Application).
[248] Ex. Xcel-15 at 327 (Application).
[249] Ex. Xcel-15 at 327 (Application).
[250] Ex. Xcel-15 at 327 (Application).
[251] Ex. Xcel-15 at 327 (Application).
[252] Ex. Xcel-15 at 327 and Appendix M (Application).
[253] Ex. Xcel-15 at 327 and Appendix M (Application).
[254] Ex. Xcel-15 at 328 and Appendix M (Application).

Explorer.[255] A copy of the Minnesota Conservation Explorer review was provided to the Applicant by the MnDNR on January 23, 2024.[256] Xcel Energy used this information to assess potential Project impacts in the Application.[257]

~~121.~~127. Xcel Energy has had numerous discussions about the Project with MnDOT.[258] On August 22, 2023, Xcel Energy and MnDOT had a call to discuss all of the currently proposed route segments and alignment alternatives.[259] Feedback included locations where roadway construction is upcoming, existing infrastructure MnDOT would prefer to be avoided or would prefer the proposed transmission line would be parallel to, and to highlight that US Highway 61 is a scenic byway.[260]

~~122.~~128. On September 13, 2023, MnDOT and Xcel Energy had another call where MnDOT explained the new Early Notification Memo process that MnDOT has begun using and requested that Xcel Energy also use this form.[261] Xcel Energy then submitted the Early Notification Memo to MnDOT.[262] On January 30, 2024, MnDOT provided its Early Coordination response for the Project and included information concerning meeting summaries, general transmission line routing considerations, and an attachment with detailed MnDOT recommendations and comments concerning resources associated with the Project.[263]

~~123.~~129. Xcel Energy contacted the Minnesota SHPO on March 7, 2023, to request information on known cultural resources within the Project Study Area.[264] The Minnesota SHPO responded on March 10, 2023, with a Microsoft Access database file containing all known records of cultural resources within the Project Study Area.[265] On May 1, 2023, Xcel Energy sent the initial outreach letter to the Minnesota SHPO describing Project and requesting comments.[266] Xcel Energy prepared a draft Cultural Resources Literature Review of the Project Study Area and submitted a copy of that to the Minnesota SHPO with a completed Request for Project review form on February 16, 2024.[267]

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[255] Ex. Xcel-15 at 329 and Appendix M (Application).
[256] Ex. Xcel-15 at 329 and Appendix M (Application).
[257] Ex. Xcel-15 at 329 and Appendix M (Application).
[258] Ex. Xcel-15 at 329 and Appendix M (Application).
[259] Ex. Xcel-15 at 329 and Appendix M (Application).
[260] Ex. Xcel-15 at 329 and Appendix M (Application).
[261] Ex. Xcel-15 at 329 and Appendix M (Application).
[262] Ex. Xcel-15 at 329 and Appendix M (Application).
[263] Ex. Xcel-15 at 330 (Application).
[264] Ex. Xcel-15 at 330 and Appendix M (Application).
[265] Ex. Xcel-15 at 330 and Appendix M (Application).
[266] Ex. Xcel-15 at 330 and Appendix M (Application).
[267] Ex. Xcel-15 at 330 (Application); Ex. Xcel-29 at 22:8-14 (E. Heine Direct Testimony).

~~124.~~130. In addition to the general Project description and outreach letter, Xcel Energy sent a copy of the Project's draft Agricultural Impact Mitigation Plan (AIMP) to the Minnesota Department of Agriculture (MDA) on February 5, 2024.[268] MDA provided comments on the draft AIMP to Xcel Energy on February 7, 2024, which Xcel Energy has incorporated into the AIMP filed with the Application.[269]

~~125.~~131. Xcel Energy sent an initial outreach letter with Project information and request for comment to the Minnesota Pollution Control Agency (MPCA) on May 1, 2023.[270] MPCA staff met with Xcel Energy to discuss the proximity of the Project to a closed landfill and concerns of replacing existing transmission structures with new double circuit 345/115 kV structures if this route is selected.[271] After the meeting, the Applicant incorporated additional information from the MPCA into the Project routing map.[272] Xcel Energy also met with the owner of the landfill site on November 9, 2023, to discuss the Project and its proximity to the closed landfill.[273] Xcel Energy will continue to coordinate and consult both the MPCA and the landowner of the closed landfill regarding the replacement of the existing 115 kV line with a double circuit 345 kV/115 kV transmission line.[274]

4. Local Government Units

~~126.~~132. On May 1, 2023, Xcel Energy sent an initial outreach letter to the local government units in the Project Study Area describing the Project and requesting comments.[275] As required by Minn. Stat. § 216E.03, subd. 3(a), Xcel Energy also sent a notice letter to local government units on October 5, 2023, informing them of the Project and the opportunity to arrange for a pre-application consultation meeting with the Applicant.[276]

~~127.~~133. Lime Township representatives spoke with Xcel Energy at the September 2023 open houses and provided written comments regarding concerns about airport safety, the proximity of the current proposed routes to the Mankato Airport, and the proximity of the proposed routes to the Mankato Airport control tower.[277] Additional concerns were provided regarding the Project's proximity to the Summit Avenue Demolition Landfill.[278] Xcel Energy held a virtual meeting with Lime

[268] Ex. Xcel-15 at 330 and Appendix M (Application).
[269] Ex. Xcel-15 at 331 and Appendix M (Application).
[270] Ex. Xcel-15 at 331 and Appendix M (Application).
[271] Ex. Xcel-15 at 331 and Appendix M (Application).
[272] Ex. Xcel-15 at 331 and Appendix M (Application).
[273] Ex. Xcel-15 at 331 and Appendix M (Application).
[274] Ex. Xcel-15 at 331 (Application).
[275] Ex. Xcel-15 at 332 (Application).
[276] Ex. Xcel-15 at 332 and Appendix M (Application).
[277] Ex. Xcel-15 at 334 (Application).
[278] Ex. Xcel-15 at 334 (Application).

Township on November 28, 2023, to discuss the concerns raised, provide updates on information the Applicant had learned regarding the airport and landfill, and address any further questions or concerns.[279]

~~128.~~134. City of Mankato staff also attended the September 2023 public open houses and spoke with Xcel Energy about the Project.[280] Xcel Energy held a virtual meeting with such staff on October 25, 2023, to discuss routing options near Mankato Airport.[281] The City of Mankato staff provided Xcel Energy with airspace easements in locations where the Proposed Routes were located.[282] The Applicant incorporated that information into the Application and eliminated certain potential route segments south of the airport. Xcel Energy held a virtual meeting with the City of Mankato staff to discuss those changes to the proposed routes.[283]

~~129.~~135. Xcel Energy attended a Goodhue County Committee meeting on January 16, 2024, to provide a presentation of the Project and answer questions regarding the Project.[284]

~~130.~~136. Xcel Energy met with and presented to city council members at the City of Oronoco City Council meeting on January 16, 2024.[285] City council members expressed concerns regarding routing along Highway 52 and expressed a preference that the new single-circuit 161 kV line be built parallel to the existing Hampton – La Crosse 345 kV transmission line.[286] Following the presentation by Xcel Energy, Cascade Township, Oronoco Township, Pine Island Township, and the City of Oronoco passed resolutions requesting that route alternative for the new single-circuit 161 kV line be added which would parallel the Hampton – La Crosse 345 kV line.[287]

B. Participation in Route Permit Docket

1. Tribal Nations

~~131.~~137. On August 1, 2024, the EERA filed public comments from the PIIC regarding the scope of the EIS for the Project.[288] PIIC encouraged the EIS to study and review the proposed route Segment 4 East on PIIC and its Elk Run property

[279] Ex. Xcel-15 at 334 (Application).
[280] Ex. Xcel-15 at 334 (Application).
[281] Ex. Xcel-15 at 334 (Application).
[282] Ex. Xcel-15 at 334 (Application).
[283] Ex. Xcel-15 at 334-335 and Appendix M (Application).
[284] Ex. Xcel-15 at 335 and Appendix M (Application).
[285] Ex. Xcel-15 at 335 (Application).
[286] Ex. Xcel-15 at 335 (Application).
[287] Ex. Xcel-15 at 335 and Appendix M (Application).
[288] Tribal and Agency Comments at 1-5 (Aug. 1, 2024) (eDocket No. 20248-209559-01).

for undue community burden, past injustices, and the impact on tribal natural resources.[289]

2. Federal Agencies

~~132.~~138. On August 1, 2024, the ERRA filed public comments received from the U.S. Army Corps of Engineers indicating that the Project is likely to require a permit from the U.S. Army Corps of Engineers (USACE) based on an initial review of the Application.[290] Xcel Energy responded in its August 28, 2024 letter stating that it will continue to coordinate with USACE as this Project proceeds and will apply for all required federal permits.[291]

3. State Agencies

a. MnDNR

~~133.~~139. On July 30, 2024, MnDNR filed comments regarding potential environmental impacts that the agency recommended be considered in the EIS.[292] Specifically, MnDNR recommended the EIS should fully describe the timing of the work, the equipment and materials, and any temporary staging areas and work spaces in or near the McCarthy Lake Wildlife Management Area and calcareous fen.[293] MnDNR further noted that the routes in Olmsted County are in close proximity to mapped karst features and MnDNR recommended that the EIS should address how the Project will account for karst geology in pole structure design and placement, and what measures the Applicant will take should it encounter karst features during construction.[294] Lastly, MnDNR recommended that any additional route alternatives considered in the EIS, should be submitted to the MnDNR Natural Heritage staff to update the January 23, 2024 Natural Heritage letter.[295]

~~134.~~140. On January 13, 2025, Xcel Energy submitted a Natural Heritage Review request to the MnDNR via the Minnesota Conservation Explorer to address the additional route alternatives that were added during scoping.[296] On March 10, 2025, Xcel Energy contacted the MnDNR for an update on its response.[297] The MnDNR

[289] Tribal and Agency Comments at 3-5 (Aug. 1, 2024) (eDocket No. 20248-209559-01).
[290] Tribal and Agency Comments at 25 (Aug. 1, 2024) (eDocket No. 20248-209559-01).
[291] Ex. Xcel-25 at 16 (Response to Environmental Impact Statement Scoping Comments).
[292] Comments at 1 (July 30, 2024) (eDocket No. 20247-209122-01).
[293] Comments at 1-2 (July 30, 2024) (eDocket No. 20247-209122-01).
[294] Comments at 2 (July 30, 2024) (eDocket No. 20247-209122-01).
[295] Comments at 2 (July 30, 2024) (eDocket No. 20247-209122-01).
[296] Ex. Xcel-29 at 24:1-5 (E. Heine Direct Testimony).
[297] Ex. Xcel-29 at 24:1-5 (E. Heine Direct Testimony).

provided that such a response would be issued three months from the initial filing date.[298]

~~135.~~141. On May 1, 2025, the MnDNR issued a refresh of its initial natural heritage response (MCE 2023-00832) which incorporated review of the route alternatives being analyzed in the DEIS (MnDNR refreshed responses are labeled MCE 2025-00029 and MCE 2025-00030).[299] These updated reviews were filed on the docket on June 10, 2025, and were used in preparing the final FEIS and included in Appendix M of the FEIS.

~~136.~~142. On June 10, 2025, MnDNR filed additional comments outlining its route preferences and proposed special conditions for the Route Permit.[300] The MnDNR stated a preference for Route Segment 17 for Segments 1 and 2 "[t]o mitigate potential impacts on native plant communities, state-administrated lands, and public waters."[301] The MnDNR stated that if Route Segment 17 is not selected, that it strongly encourages "double -circuiting the final route as much as feasible to minimize long-term impacts on natural resources."[302] The MnDNR opposed selection of Route Alternative 1J, part of Segment 1 South, because this route alternative does not follow an existing transmission line and crosses between multiple areas known for their waterfowl population including Ballantyne, Duck, and Madison Lakes, all Lakes of Outstanding Biological Significance, and Gilfillan Lake WMA.[303] The MnDNR also supported use of Segment 2 South near the Faribault WMA rather than Segment 2 North because Segment 2 South has the potential to be double-circuited with an existing transmission line in this area.[304] For Segment 4, the MnDNR supports the CapX Co-Locate Option as it co-locates the re-located 161 kV line with the existing CapX2020 Hampton – La Crosse 345 line across the Zumbro River.[305]

~~137.~~143. In its June 10, 2025 comments, MnDNR requested that to the extent that there is any ROW expansion or staging areas on the east side of the Zumbro River, that the tree removal within Minnesota Biological Survey (MBS) Site of Moderate Biodiversity Significance and riparian zone of the Zumbro River be limited.[306] MnDNR also recommended that the Route Permit include special conditions regarding: (1) coordination with USFWS on avoidance and permitting of federally-protected species;

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[298] Ex. Xcel-29 at 24:1-5 (E. Heine Direct Testimony).
[299] Comments (Minnesota Department of Natural Resources) (June 10, 2025) (eDocket Nos. 20256-219807-01, 20256-219807-02, 20256-219807-03, and 20256-219807-04).
[300] Comments (Minnesota Department of Natural Resources) (June 10, 2025) (eDocket Nos. 20256-219807-01, 20256-219807-02, 20256-219807-03, and 20256-219807-04).
[301] Comments at 1 (Minnesota Department of Natural Resources) (June 10, 2025) (eDocket No. 20256-219807-01).
[302] Comments at 1 (Minnesota Department of Natural Resources) (June 10, 2025) (eDocket No. 20256-219807-01).
[303] Comments at 1 (Minnesota Department of Natural Resources) (June 10, 2025) (eDocket No. 20256-219807-01).
[304] Comments at 2 (Minnesota Department of Natural Resources) (June 10, 2025) (eDocket No. 20256-219807-01).
[305] Comments at 2 (Minnesota Department of Natural Resources) (June 10, 2025) (eDocket No. 20256-219807-01).
[306] Comments at 2 (Minnesota Department of Natural Resources) (June 10, 2025) (eDocket No. 20256-219807-01).

(2) avian flight divertors; (3) coordination with the Vegetation Management Planning Working Group (VMPWG) on the Vegetation Management Plan (VMP) and that the VMP should address vegetation removal timing and avoiding removal in floodplains and near designated trout streams; (4) wildlife friendly erosion control; (5) require that dust control products do not contain calcium chloride or magnesium chloride; and (6) use of downward-facing facility lighting that minimizes blue hue.[307]

b. MnDOT

~~138.~~144. On August 1, 2024, MnDOT filed comments during the scoping process for the EIS.[308] In these comments, MnDOT highlighted a wooded wetland complex within Segment 1 and advised the Applicant that all transmission line structures in proximity of the wooded wetland should comply with all MnDOT requirements associated with wetland buffers and U.S. Army Corps of Engineers regulations.[309] MnDOT also recommended continued cooperation with the City of Madison Lake to ensure the placement of transmission poles and lines are coordinated with the placement of the site infrastructure, sidewalks, and street extensions.[310]

~~139.~~145. On November 22, 2024, Xcel Energy submitted an Early Notification Memo request to MnDOT to address the new route alternatives that were added during EIS scoping for the Project.[311] On November 26, 2024, MnDOT requested clarification on an alignment or intended use of Interstate 35 for ENM-4 to which Xcel Energy responded to on the same day.[312] On January 17, 2025, Xcel Energy submitted a supplemental Early Notification Memo request to MnDOT for Segment 4 West Modification, to which MnDOT provided it had no interest or assets along this route alternative that would be affected.[313] On March 25, 2025, MnDOT formally responded to the Early Notification Memo request and filed its response with the Commission.[314] In this letter, MnDOT outlined potential impacts of the route alternatives, suggested mitigative measures, and potential permit limitations/requirements.[315]

~~140.~~146. On June 10, 2025, MnDOT filed comments on the DEIS suggesting edits to certain sections of the DEIS.[316] MnDOT stated that it appreciated

[307] Comments at 2-4 (Minnesota Department of Natural Resources) (June 10, 2025) (eDocket No. 20256-219807-01).
[308] Comments (August 1, 2024) (eDocket No. 20248-209198-01).
[309] Comments at 2 (August 1, 2024) (eDocket No. 20248-209198-01).
[310] Comments at 2 (August 1, 2024) (eDocket No. 20248-209198-01).
[311] Ex. Xcel-29 at 23:19-24:1 (E. Heine Direct Testimony).
[312] Ex. Xcel-29 at 23:19-24:1 (E. Heine Direct Testimony).
[313] Ex. Xcel-29 at 23:23-25 (E. Heine Direct Testimony).
[314] Ex. Xcel-29 at 24:1-3 (E. Heine Direct Testimony).
[315] Ex. Xcel-29 at 24:3-5 (E. Heine Direct Testimony).
[316] Comments at 1 (Minnesota Department of Transportation) (June 10, 2025) (eDocket No. 20256-219788-03).

the work of EERA staff and the Applicant to include MnDOT's findings from the Applicant's Early Notification Memo on Route Segment 17 into the DEIS.[317]

c. SHPO

~~141.~~147. On May 1, 2024, the SHPO responded to the Literature Review submission and assigned the Project SHPO Number 2024-1231.[318] On October 15, 2024, the Commission submitted a letter to the Applicant and the SHPO authorizing Xcel Energy to act on the Commission's behalf to consult with SHPO.[319] On March 21, 2025, Xcel Energy contacted SHPO staff to request a meeting.[320] On April 18, 2025, Xcel Energy met with SHPO staff to discuss the Project, review cultural resources work completed to date, federal nexus and Section 106 matters, status of permitting and anticipated Route Permit decision date, review of future cultural resources work of the selected route, and format of anticipated cultural resource report.

d. VMPWG

~~142.~~148. On June 10, 2025, the EERA filed comments on behalf of the interagency Vegetation Management Planning Working Group (VMPWG) regarding the draft Vegetation Management Plan (VMP) included as Appendix V to the Application.[321] The VMPWG stated that it was not recommending any action by the Commission at this time but was providing its comments on the draft VMP to facilitate transparency in the record as the VMPWG and Xcel Energy work together to finalize the VMP for this Project.[322] The VMPWG provided several recommendations for updates to the draft VMP and recommended that Xcel Energy continue to coordinate with the VMPWG as it finalizes the VMP.[323]

4. Local Government Units

~~143.~~149. On April 29, 2024, the ~~Major~~ Mayor of Oronoco provided comments regarding route alternative Segment 4 East and asked the Commission to consider city development plans in regards to route alternatives.[324] On the same day, the City of Oronoco provided a city council resolution in support of the Project's Segment 4 route and at least one alternative for the new single-circuit 161 kV line that

[317] Comments at 2-3 (Minnesota Department of Transportation) (June 10, 2025) (eDocket No. 20256-219788-03).
[318] Ex. Xcel-29 at 22:18-20 (E. Heine Direct Testimony).
[319] Ex. Xcel-29 at 22:23 -23:2 (E. Heine Direct Testimony); Ex. PUC-23 (Letter).
[320] Ex. Xcel-29 at 23:4-10 (E. Heine Direct Testimony).
[321] Hearing Comments at 1 (June 10, 2025) (eDocket No. 20256-219785-01).
[322] Hearing Comments at 1 (June 10, 2025) (eDocket No. 20256-219785-01).
[323] Hearing Comments at 6 (June 10, 2025) (eDocket No. 20256-219785-01).
[324] Public Comment (April 29, 2024) (eDocket No. 20244-206072-01).

follows the existing CapX2020 transmission line route from the North Rochester Substation to the Chester Junction.[325]

~~144.~~150. On May 29, 2025, the City of Madison Lake commented and expressed concerns regarding the proposed Segment 1 South route as the route may interrupt commercial and residential development in the area.[326] The City of Madison Lake expressed its preference for Segment 1 North over ~~the~~ Segment 1 South.[327]

~~145.~~151. On May 29, 2025, Dodge County filed comments expressing concern about the addition of Highway 14 route alternative (Route Segment 17).[328] Dodge County stated that it did not receive notice of this alternative until May 16, 2025 and that it did not have adequate time to provide feedback on this alternative.[329] Dodge County requested an extension of the public comment deadline to allow additional time to formulate its comments.[330]

~~146.~~152. On June 10, 2025, the City of Waseca filed a City Council ~~ordinance~~ resolution supporting a comprehensive socioeconomic analysis and potential business development benefits of the proposed route along Highway 14 (Route Segment 17) as compared to the other route alternatives for Segments 1 and 2.[331]

~~147.~~153. On June 17, 2025, Blue Earth County Public Works filed a comment summarizing the potential impacts of Segment 1 North and Segment 1 South on its county roads and future road construction projects.[332] Blue Earth County Public Works also stated that they anticipate that Xcel Energy will work with the County on developing and executing a Haul Road Use and Temporary Access Agreement.[333]

VI. ROUTES EVALUATED FOR PROJECT

A. Applicant's Route Development

~~148.~~154. Xcel Energy conducted a thorough and systematic route selection process beginning in 2022 and extending through late-2023.[334] This process included consideration of statutory and rule requirements, identification and review of existing transmission lines and linear infrastructure, information gathering and data compilation,

[325] Public Comment (April 29, 2024) (eDocket No. 20244-206073-01).
[326] Public Comment (May 29, 2025) (eDocket No. 20255-219331-01).
[327] Public Comment (May 29, 2025) (eDocket No. 20255-219331-01).
[328] Public Comment (May 29, 2025) (eDocket No. 20256-219808-01).
[329] Public Comment (May 29, 2025) (eDocket No. 20256-219808-01).
[330] Public Comment (May 29, 2025) (eDocket No. 20256-219808-01).
[331] Public Comment (June 10, 2025) (eDocket No. 20256-219788-02).
[332] Public Comment (June 17, 2025) (eDocket No. 20256-219968-01).
[333] Public Comment (June 17, 2025) (eDocket No. 20256-219968-01).
[334] Ex. Xcel-15 at 108 (Application).

public outreach and input, meeting and collecting stakeholder comments, and comparison of route segments and alignment.[335] The Applicant also met with tribal government contacts and state and local agencies as part of the outreach program for the Project.[336]

~~149.~~155. 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.[337]

~~150.~~156. Xcel Energy identified the following steps that were taken as part of this process:

- Established boundaries for Project Study Area;
- Identified opportunities and constraints;
- Developed preliminary route alternatives;
- Conducted tribal, local government and agency outreach;
- Conducted initial landowner outreach;
- Reviewed initial route network in the field;
- Held public open house meetings;
- Reviewed and refined routes based on feedback and analysis, ran comparative analysis to remove most impactful routes;
- Conducted a second round of public open house meetings;
- Reviewed, refined routes, ran comparative analysis to remove most impactful routes. Optimized route segments and connected to create end-to-end routes included in the Application; and
- Conducted constructability review of end-to-end routes.[338]

[335] Ex. Xcel-29 at 5:4-11 (E. Heine Direct Testimony); Ex. Xcel-15 at 108 (Application).
[336] Ex. Xcel-29 at 5:4-11 (E. Heine Direct Testimony); Ex. Xcel-15 at 108 (Application).
[337] Ex. Xcel-29 at 5:13-19 (E. Heine Direct Testimony); Ex. Xcel-15 at 108 (Application).
[338] Ex. Xcel-29 at 5:23-6:11 (E. Heine Direct Testimony); Ex. Xcel-29 at 5-6 (Application).

~~151.~~157. 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;
- Municipal boundaries;
- Tribally-owned properties;
- Federally-owned properties;
- State-owned properties;
- Lakes, rivers, and calcareous fens;
- Public airports; and
- Regional, county, and municipal Parks.[339]

~~152.~~158. Xcel Energy also took the additional steps to minimize impacts of the Project on the environment and affected landowners to share existing rights-of-way or follow existing linear features.[340] Xcel Energy searched for the following opportunities:

- Locations with the opportunity to double-circuit with or parallel existing transmission lines;
- Locations with the opportunity to parallel a roadway, and potentially share public rights-of-way between the transmission line and road, and avoid the constraints;
- Locations with the opportunity to place the proposed transmission line centerline on a field or property line, where land uses could continue to be uninterrupted in the transmission line easement; and
- Routes that reduce the number of two-pole angle or dead-end structures by following straight lines.[341]

[339] Ex. Xcel-29 at 6:17-7:1 (E. Heine Direct Testimony).
[340] Ex. Xcel-29 at 6:6-20 (E. Heine Direct Testimony).
[341] Ex. Xcel-29 at 7:8-20 (E. Heine Direct Testimony).

B. Routes Proposed in the Application

~~153.~~159. As a result of the Applicant's routing development process, the Applicant proposed two end-to-end route alternatives for Segments 1, 2, and 4 of the Project in the Application.[342] In addition, Xcel Energy provided five alternative segments and three connector segments in its Application.[343] Alternative routes were not provided by the Applicant for Segment 3 because route alternatives were evaluated to this segment during the Hampton – La Crosse project route permit proceeding.[344]

1. Segment 1

~~154.~~160. Segment 1 is the proposed new 345 kV transmission line that would run from the Wilmarth Substation in the city of Mankato to a point near the West Faribault Substation near the city of Faribault.[345] Two potential routes were identified for Segment 1 in the Application: Segment 1 North (48.1 miles) and Segment 1 South (53.6 miles).[346]

~~155.~~161. Segment 1 North follows existing Xcel Energy transmission lines from the Wilmarth Substation until it ends near the West Faribault Substation.[347] Nearly all of Segment 1 North (96 percent) could be double-circuited with either an existing 115 kV line or a 69 kV line.[348] For Segment 1 North, no route segment or alignment alternatives were proposed in the Application.[349]

~~156.~~162. Segment 1 South generally follows existing 115 kV and 69 kV transmission lines from the Wilmarth Substation to near the West Faribault Substation.[350] More than half of Segment 1 South (69 percent) could be double-circuited with existing 69 kV and/or 115 kV line.[351] For Segment 1 South, one route segment alternative and zero alignment alternatives were proposed in the Application.[352]

2. Segment 2

~~157.~~163. Segment 2 is the proposed new 345 kV transmission line that would run from a point near the West Faribault Substation, southwest of the city of Faribault,

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[342] Ex. Xcel-29 at 4:16-19 (E. Heine Direct Testimony).
[343] Ex. Xcel-29 at 4:22-24 (E. Heine Direct Testimony).
[344] Ex. Xcel-15 at 7 (Application).
[345] Ex. Xcel-15 at 123 (Application).
[346] Ex. Xcel-15 at 123 (Application).
[347] Ex. EERA-10 at 32 (FEIS).
[348] Ex. EERA-10 at 32 (FEIS); Ex. Xcel-15 at 123 (Application).
[349] Ex. Xcel-15 at 123 (Application).
[350] Ex. EERA-10 at 33 (FEIS).
[351] Ex. EERA-10 at 33 (FEIS).
[352] Ex. Xcel-15 at 123 (Application).

to the North Rochester Substation, just north of the city of Pine Island.[353] The Applicant proposed two route options for Segment 2 in the Application: Segment 2 North (41.2 miles) and Segment 2 South (33.6 miles).[354]

~~158.~~164. As proposed in the Application, Segment 2 North could be double-circuited with existing 69 kV transmission line for 51 percent of its length and would be parallel to an existing 345 kV transmission line for 17 percent of its length.[355] For Segment 2 North, no route segment or alignment alternatives were proposed in the Application.[356]

~~159.~~165. Segment 2 South would be primarily constructed in a new ROW that parallels some (27 percent) existing infrastructure (transmission lines, roads, or railroads) but mostly (77 percent in total) parallels property lines.[357] For Segment 2 South, no route segment or alignment alternatives were proposed in the Application.[358]

~~160.~~166. Xcel Energy did propose a connector segment for Segment 2 in the Application, Connector 2G.[359] Connectors, where present, connect the north and south options.[360] Connector 2G connects Segment 2 North and Segment 2 South in Rice County and travels north to south across agricultural land.[361] Connector 2G would require a greenfield ROW.[362]

3. Segment 3

~~161.~~167. Segment 3 is the proposed new 345 kV transmission line that would run from the North Rochester Substation near Pine Island to the Mississippi River (and Minnesota/Wisconsin border), where it would cross the river at a point near the city of Kellogg.[363] Segment 3 is 43.4 miles and will be double-circuited in its entirety. The existing double-circuit structures were previously permitted as a 345 kV double-circuit capable line by the Commission as part of the CapX2020 Hampton – La Crosse Project in 2012.[364] The Applicant did not propose an alternative route for Segment 3 because route alternatives to this segment were evaluated during the Hampton – La Crosse

[353] Ex. ~~EERA-10~~ PUC-31 at 35 (FEIS).
[354] Ex. ~~EERA-10~~ PUC-31 at 35 (FEIS).
[355] Ex. ~~EERA-10~~ PUC-31 at 37 (FEIS).
[356] Ex. Xcel-15 at 127 (Application).
[357] Ex. ~~EERA-10~~ PUC-31 at 37 (FEIS).
[358] Ex. Xcel-15 at 127 (Application).
[359] Ex. ~~EERA-10~~ PUC-31 at 38 (FEIS).
[360] Ex. ~~EERA-10~~ PUC-31 at 38 (FEIS).
[361] Ex. ~~EERA-10~~ PUC-31 at 38 (FEIS).
[362] Ex. ~~EERA-10~~ PUC-31 at 38 (FEIS).
[363] Ex. ~~EERA-10~~ PUC-31 at 42 (FEIS).
[364] Ex. ~~EERA-10~~ PUC-31 at 42 (FEIS); *In the Matter of Xcel Energy's Application for a Route Permit for the CapX2020 Hampton – Rochester – La Crosse High Voltage Transmission Line*, Order Issuing Route Permit as Amended, Docket No. E002/TL-09-1448 (May 30, 2012).

Project route permit proceeding and no additional ROW would be required for Segment 3.[365]

~~162.~~168. The westernmost 27 miles of Segment 3 would convert an existing 161 kV transmission line to 345 kV operation.[366] The easternmost 16 miles of Segment 3 would involve installing new 345 kV transmission lines on existing transmission structures.[367] The Mississippi River crossing would not require any new construction as the existing 69 kV line would be converted to 345 kV operation.[368]

~~163.~~169. An alternative route for Segment 3 was not proposed because route alternatives to this segment were evaluated as part of a prior route permit proceeding and the entire length of Route Option 3 is within an existing transmission corridor and no additional ROW will be required.[369]

4. Segment 4

~~164.~~170. Segment 4 is the proposed relocation of a portion of the existing North Rochester to Chester 161 kV transmission line that will be displaced by Segment 3.[370] Two potential routes were identified for Segment 4 in the Application: Segment 4 West (23.7 miles) and Segment 4 East (19.6 miles).[371] Portions of both routes would parallel existing transmission line rights-of-way, but both routes also require significant segments where new greenfield ROW would be required.[372]

~~165.~~171. Segment 4 West parallels a combination of roads, property lines, and existing transmission lines for nearly all of its length; it could be double-circuited in part with an existing 161 kV line at its northernmost portion.[373] For Segment 4 West, two route segment alternatives, and one connector (4Q) were proposed in the Application.[374]

~~166.~~172. Segment 4 East parallels U.S. Highway 52 for most of its length and includes some double-circuiting where it runs east/west.[375] For Segment 4 East, route segment alternatives, and one connector (4Q) were proposed in the Application.[376]

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[365] Ex. ~~EERA-10~~ PUC-31 at 42 (FEIS).
[366] Ex. ~~EERA-10~~ PUC-31 at 42 (FEIS).
[367] Ex. ~~EERA-10~~ PUC-31 at 42 (FEIS).
[368] Ex. Xcel-15 at 130 (Application).
[369] Ex. Xcel-15 at 130-131 (Application).
[370] Ex. Xcel-15 at 133 (Application); Ex. EERA-10 at 44 (FEIS).
[371] Ex. Xcel-15 at 133 (Application).
[372] Ex. Xcel-15 at 133 (Application).
[373] Ex. ~~EERA-10~~ PUC-31 at 47 (FEIS).
[374] Ex. Xcel-15 at 133 (Application).
[375] Ex. ~~EERA-10~~ PUC-31 at 48 (FEIS).
[376] Ex. Xcel-15 at 133 (Application).

~~167.~~173. In the Application, the Applicant proposed Connector 4Q.[377] Connector 4Q connects Segment 4 West and Segment 4 East in Olmsted County, east of Highway 52.[378] It travels north to south across agricultural land and parallels 20thAvenue Northeast. The connector would require a greenfield ROW.[379]

C. Route Alternatives Added During Scoping Process

~~168.~~174. During the EIS scoping comment period, members of the public and the Applicant recommended 12 route segments and five alternative alignments.[380] During the scoping process, the Applicant also requested that Segment Alternative 1L be removed from consideration as a potential route to avoid potential conflicts with CenterPoint Energy's gas wells in the area.[381]

~~169.~~175. EERA staff analyzed the route segments, connectors, and alternative alignments recommended by the public to determine if their inclusion in the EIS would aid in the Commission's decision on the Application. EERA recommended that 10 route segments and 5 alignment alternatives be evaluated in the EIS.[382]

~~170.~~176. The Commission adopted the route and alignment alternatives recommended by EERA for inclusion in the scope of the EIS but also added one additional alternative to Route Segment 9.[383]

1. Segment 1

~~171.~~177. For Segment 1 North, two route segment alternatives and two alignment alternatives were proposed during scoping.[384] For Segment 1 South, seven subsegments, six route segments and zero alignment alternatives were proposed during scoping.[385] These alternatives are summarized in Table 2 below.

Table 2. Segment 1 Alternatives

Route Alternatives	Route Segment Alternatives	Alignment Alternatives

[377] Ex. ~~EERA-10~~ PUC-31 at 50 (FEIS).
[378] Ex. ~~EERA-10~~ PUC-31 at 50 (FEIS).
[379] Ex. ~~EERA-10~~ PUC-31 at 50 (FEIS).
[380] Ex. EERA-5 at 6 (Scoping Summary and Recommendations).
[381] Ex. Xcel-29 at 8:4-8 (E. Heine Direct Testimony).
[382] Ex. EERA-5 at 6 (Scoping Summary and Recommendations).
[383] Ex. PUC-22 (Order Adding Alternative to Scope of Environmental Impact Statement).
[384] Ex. ~~EERA-10~~ PUC-31 at 30 (FEIS).
[385] Ex. ~~EERA-10~~ PUC-31 at 30 (FEIS).

Segment 1 North	Route Segment 9 Route Segment 18	Alignment Alternative 2 Alignment Alternative 8
Segment 1 South	Route Segment 1 Route Segment 5 Route Segment 6 Route Segment 7 Route Segment 10 Route Segment 11	None

2. Segment 2

~~172.~~178. No route, route segment, or alignment alternatives were proposed during scoping for Segment 2.[386]

3. Route Segment 17

~~173.~~179. Route Segment 17 is a route alternative to both Segment 1 and 2 proposed during scoping.[387] Route Segment 17 runs from the Wilmarth Substation in the city of Mankato, to the Byron Substation, and ultimately to the North Rochester Substation, just north of the city of Pine Island.[388] It is also referred to as the "Highway 14 Option" because it would primarily parallel U.S. Highway 14.[389] It is approximately 86.1 miles long and requires a wider ROW and route width to allow the Applicant to work with MnDOT on the final design if this route is selected.[390]

4. Segment 3

~~174.~~180. No route, route segment, or alignment alternatives were proposed during scoping for Segment 3.[391]

5. Segment 4

~~175.~~181. During scoping, two end-to-end route alternatives and two alignment alternatives were proposed for Segment 4.[392] The two route alternatives were Segment 4 West Modification and Segment 4 CapX Co-Locate Option.[393]

[386] Ex. ~~EERA-10~~ PUC-31 at 35 (FEIS).
[387] Ex. ~~EERA-10~~ PUC-31 at 40 (FEIS).
[388] Ex. ~~EERA-10~~ PUC-31 at 40 (FEIS).
[389] Ex. ~~EERA-10~~ PUC-31 at 40 (FEIS).
[390] Ex. ~~EERA-10~~ PUC-31 at 40 (FEIS).
[391] Ex. ~~EERA-10~~ PUC-31 at 42 (FEIS).
[392] Ex. ~~EERA-10~~ PUC-31 at 44 (FEIS).
[393] Ex. ~~EERA-10~~ PUC-31 at 44 (FEIS).

~~176.~~182. Segment 4 West Modification was proposed by the Applicant during scoping and begins at the same point as Segment 4 West (at 50th Avenue Northeast) and is the same as Segment 4 West until it heads north at 75th Avenue Northwest, where it begins to be double-circuited with the existing North Rochester – Northern Hills 161 kV line.[394] This portion could be double-circuited all the way through to the North Rochester Substation.[395]

~~177.~~183. Segment 4 Cap-X Co-Locate Option, also referred to as Route Segment 12, was proposed during scoping and is 16.2 miles long.[396] The commenter suggesting this alternative requested that the EIS study an option to construct the 161 kV line parallel to the existing CapX2020 Hampton – La Crosse line along Segment 3 in its entirety.[397] This route alternative starts at the North Rochester Substation and would parallel Segment 3 to 40th Avenue NE.[398]

~~178.~~184. The route and alignment alternatives for Segment 4 are summarized in Table 3 below.

Table 3. Segment 4 Alternatives

Route Alternatives	Route Segment Alternatives	Alignment Alternatives
Segment 4 West	Route Segment 4M Route Segment 4R	None
Segment 4 West Modification	Route Segment 13	None
Segment 4 East	Route Segment 4C Route Segment 4E	Alignment Alternative 16
Segment 4 CapX Co-Locate Option	Route Segment 12	Alignment Alternative 15

D. Applicant's Preferred Routes

~~179.~~185. At the time of the filing of the Application, the Applicant did not identify a route preference.[399] In the Direct Testimony of Company witness Heine, however, the Applicant stated that it had analyzed the route and alignment alternatives studied in the EIS and, as a result of that analysis, determined its current preferred route

[394] Ex. ~~EERA-10~~ PUC-31 at 48 (FEIS).
[395] Ex. ~~EERA-10~~ PUC-31 at 48 (FEIS).
[396] Ex. ~~EERA-10~~ PUC-31 at 50 (FEIS).
[397] Ex. ~~EERA-10~~ PUC-31 at 50 (FEIS).
[398] Ex. ~~EERA-10~~ PUC-31 at 50 (FEIS).
[399] Ex. Xcel-16 at 6 (Application).

for each segment of the Project.[400] A summary of these preferred routes as stated in Company's Direct Testimony is provided in Table 4 below.

Table 4. Xcel Energy's Preferred Routes in Direct Testimony[401]

Segment	Route Alternative	Route Subsegments, Route Alternatives, and Alignment Alternatives Included
Segment 1	Segment 1 North (with Route Segment 18)	1A, 1O, 1I, 1F, 1E, 1D (including scoping alternatives Route Segments 9, 18, and 1F)
Segment 2	Segment 2 North, Connector 2G, and Segment 2 South	2A, 2B, 2D, 2F, and 2G
Segment 3	Segment 3	3A, 3B, and 3C
Segment 4	Segment 4 West Modification until cross Highway 52 then Segment 4 East	4I, 4J, 4N-East, and 4S

1. Segments 1 and 2

~~180.~~186. For Segment 1, Xcel Energy's preferred route is Segment 1 North which generally follows, and would be double-circuited with, an existing 115 kV transmission line with the exception of a section where it diverges from the 115 kV line to avoid avigation easements surrounding the Mankato Airport.[402] That section follows an existing double-circuit 115/115 kV line south to an existing 69 kV corridor, where it would be double-circuited parallel to an existing trail.[403] Company witness Heine testified that Xcel Energy prefers this route for Segment 1 because it uses the existing 115 kV right-of-way to the greatest extent possible, thus minimizing the amount of new right-of-way that is needed.[404] In addition, as compared to the other route alternative for Segment 1, Company witness Heine testified that Segment 1 North has fewer homes within close proximity to the proposed centerline.[405] Company witness Heine testified that Xcel Energy's preferred route has 70 residences within 500 feet of the anticipated centerline as compared to 142 residences within 500 feet of the anticipated centerline of the other route alternatives in Segment 1.[406] Company witness Heine also noted that Xcel Energy's Preferred Route is shorter, at 42 miles in length, as compared to 47-49 miles long for the other route alternatives.[407] The Applicant's preferred route for Segment 1 also avoids timing and constructability constraints that are present with the

[400] Ex. Xcel-29 at 16:8 (E. Heine Direct Testimony).
[401] Ex. Xcel-29 at 16:8 (E. Heine Direct Testimony).
[402] Ex. Xcel-29 at 16:11-17:2 (E. Heine Direct Testimony).
[403] Ex. Xcel-29 at 16:12-17:2 (E. Heine Direct Testimony).
[404] Ex. Xcel-29 at 17:2-4 (E. Heine Direct Testimony).
[405] Ex. Xcel-29 at 17:7-9 (E. Heine Direct Testimony).
[406] Ex. Xcel-29 at 17:9-12 (E. Heine Direct Testimony).
[407] Ex. Xcel-29 at 17:12-13 (E. Heine Direct Testimony).

alternative routes for Segment 1.[408] Specifically, Segment 1 South, requires installing equipment at the Eastwood Substation to re-terminate the existing 69 kV line between the Wilmarth and Eastwood substations at Eastwood before construction on the new 345 kV transmission line could begin.[409]

~~181.~~187. For Segment 2, Xcel Energy's preferred route is a combination of Segment 2 North and Segment 2 South.[410] This route generally follows a combination of property lines and/or roads until it reaches the existing Hampton – North Rochester 345 kV transmission line.[411] At this point, Xcel Energy's preferred route is parallel to the existing Hampton – North Rochester 345 kV transmission line for 2.5 miles to the North Rochester Substation.[412] Witness Heine provided that Xcel Energy prefers this route because it is shorter in length than the alternative route as it is 34 miles long instead of 42.5 miles long, and it crosses fewer acres of wetland (129 acres within the route width for preferred route versus 314 acres for the alternative route).[413] Company witness Heine stated in her Direct Testimony that while the alternative route for Segment 2 generally follows an existing 69 kV line that runs along state and local roads, a 69 kV line has a much narrower right-of-way than the 150 foot wide right-of-way required for the new 345 kV line.[414] As a result, the alternative route will be required to diverge from the existing 69 kV transmission right-of-way at multiple locations to avoid displacing existing residences.[415] For instance, the alternative route will need to leave the 69 kV right-of-way near the cities of Faribault and Kenyon to avoid displacing homes in these and other residentially dense areas.[416] The alternative route will also need to cross back and forth across the road several times to avoid homes that are located within close proximity of the 69 kV line and the road.[417]

~~182.~~188. In the FEIS, the Applicant's preferred route for Segments 1 and 2 is labeled "Route Option B" that is comprised of Segment 1 North (with Route Segment 18) and within the Segment 2 West Faribault to Rochester Study Area, Segment 2 North, Connector Segment 2G, and Segment 2 South.[418]

~~183.~~189. During EIS scoping, there were two route segments and two alignment alternatives proposed for Route Option B within Segment 1.[419] The two

[408] Ex. Xcel-29 at 17:13-15 (E. Heine Direct Testimony).
[409] Ex. Xcel-29 at 17:16-20 (E. Heine Direct Testimony).
[410] Ex. Xcel-29 at 18:4-5 (E. Heine Direct Testimony).
[411] Ex. Xcel-29 at 18:4-9 (E. Heine Direct Testimony).
[412] Ex. Xcel-33 at 1:16-18 (E. Heine Rebuttal Testimony).
[413] Ex. Xcel-29 at 18:11-14 (E. Heine Direct Testimony).
[414] Ex. Xcel-29 at 18:14-17 (E. Heine Direct Testimony).
[415] Ex. Xcel-29 at 18:17-19:1 (E. Heine Direct Testimony).
[416] Ex. Xcel-29 at 19:1-4 (E. Heine Direct Testimony).
[417] Ex. Xcel-29 at 19:4-6 (E. Heine Direct Testimony).
[418] Ex. ~~EERA-10~~ PUC-31 at 518 (FEIS).
[419] Ex. ~~EERA-10~~ PUC-31 at 30 (FEIS); No route segment or alignment alternatives were proposed for Segment 2.

route segment alternatives are Route Segments 9 and 18.[420] Route Segment 18 is a longer version of Route Segment 9. Both alternatives were proposed to minimize tree clearing and to shift the alignment further from Cannon Lake.[421] Both alternatives would require shifting the alignment of the existing 115 kV line that is proposed to be double-circuited with the 345 kV line in this area.[422] In its Post-Hearing Brief, Xcel Energy stated that it supports inclusion of Route Segment 18 into Route Option B as it minimizes tree clearing in this portion of the route.

~~184.~~190. The two alignment alternatives for Route Option B are Alignment Alternative 2 and Alignment Alternative 8. In its Post-Hearing Brief, Xcel Energy stated it supports Alignment Alternative 2 as it would avoid impacts to a new development that is currently under construction in this area.[423] Xcel Energy also stated that it takes no position on Alignment Alternative 8 which was proposed to avoid tree removal. In~~N~~ its Post-Hearing Brief, Xcel Energy noted that this alignment alternative would also require shifting the alignment of the existing 115 kV line, which would be double-circuited with the 345 kV line in this portion of the route.[424]

2. Segment 3

~~185.~~191. For Segment 3, Company witness Heine explained that there is only one route under consideration because Segment 3 involves either converting an existing 161 kV to 345 kV operation or stringing an additional 345 kV circuit on existing double-circuit 345/345 kV capable structures.[425]

3. Segment 4

~~186.~~192. For Segment 4, Company witness Heine stated in Direct Testimony that the Applicant's preferred route follows existing transmission lines and road between the North Rochester Substation and its intersection with the existing 161 kV transmission line.[426] The Applicant prefers this route because it maximizes the amount of shared ROW with existing transmission lines as compared to the alternatives.[427] Company witness Heine highlighted that Xcel Energy's preferred route for Segment 4 is double-circuited with an existing 69 kV transmission for 6.4 miles and double-circuited with an existing 161 kV transmission line for approximately 11.3 miles.[428] In

[420] Ex. ~~EERA-10~~ PUC-31 at 30 (FEIS); Ex. ~~EERA-10~~ PUC-31 at Map 13-15 (FEIS).
[421] Ex. ~~EERA-10~~ PUC-31 at 233-235 (FEIS).
[422] Ex. ~~EERA-10~~ PUC-31 at 233-235 (FEIS).
[423] Ex. Xcel-29 at Schedule 2 at 1 (E. Heine Direct Testimony and Schedules).
[424] Ex. Xcel-29 at Schedule 2 at 4 (E. Heine Direct Testimony and Schedules).
[425] Ex. Xcel-29 at 19:11-15 (E. Heine Direct Testimony).
[426] Ex. Xcel-29 at 20:9-12 (E. Heine Direct Testimony).
[427] Ex. Xcel-29 at 20:12-15 (E. Heine Direct Testimony).
[428] Ex. Xcel-29 at 20:15-21:2 (E. Heine Direct Testimony).

total, Company witness Heine provides that Xcel Energy's preferred route shares existing transmission line ROW for 17.7 miles of its 22.2 mile length or for nearly 80 percent of its total length.[429]

~~187.~~193. In the FEIS, the Applicant's preferred route, as outlined in Direct Testimony, is Route Option A which is comprised of Segment 4 West Modification option within the North Rochester to Highway 52 Study Area and then the south-south option within the Highway 52 to the Existing 161 kV line Study Area.[430]

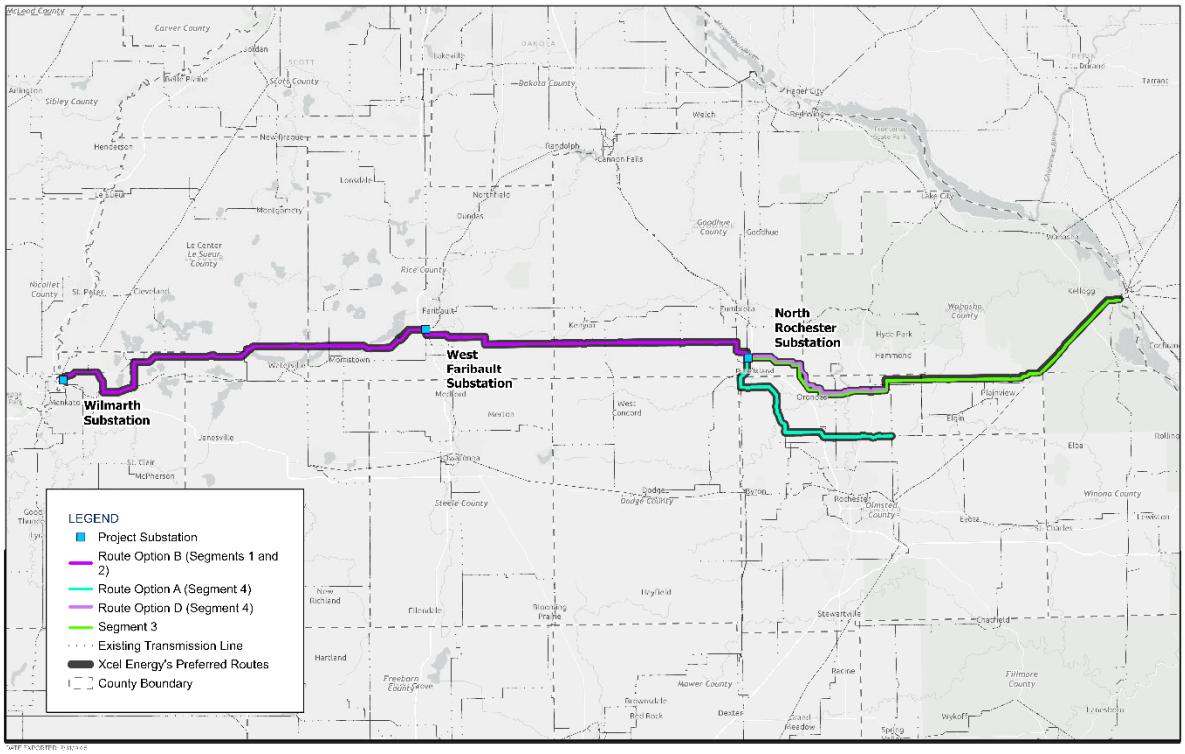
~~188.~~194. In its Post-Hearing Brief, Xcel Energy stated that in addition to the preferred route outlined in Direct Testimony, it also supported selection of Route Option D, also referred to as the CapX Co-Locate Option.

~~189.~~195. During EIS scoping, there were no alignment alternatives proposed for Route Option A and there was one alignment alternative proposed for Route Option D.[431] This alignment alternative is Alignment Alternative 15 which is approximately 1.2 miles long and is an alternative Zumbro River crossing location for Route Option D. Route Option D crosses the Zumbro River adjacent to the existing CapX line, and Alignment Alternative 15 would cross the river further south, on the south side of County Road 12.[432] In its Post-Hearing Brief, Xcel Energy took no position on this alignment alternative because it has similar impacts as the proposed alignment.[433]

~~190.~~196. Maps of Applicant's preferred routes are provided in **Addendum 1** to this filing. An overview map of Applicant's preferred routes is shown below in **Figure 1**.

[429] Ex. Xcel-29 at 21:2-6 (E. Heine Direct Testimony).
[430] Ex. ~~EERA-10~~ PUC-31 at 794 (FEIS).
[431] Ex. ~~EERA-10~~ PUC-31 at 44 (FEIS).
[432] Ex. ~~EERA-10~~ PUC-31 at 50 (FEIS).
[433] Ex. Xcel-29 at Schedule 2 at 5 (E. Heine Direct Testimony and Schedules).

Figure 1. Applicant's Preferred Routes



E. Full Routes Analyzed in the EIS

~~191.~~197. The EIS analyzed the potential impacts of three end-to-end routes for Segment 1 and Segment 2 in Chapter 8 of the EIS.[434] These three end-to-end route options are: (1) Route Option A, which is a combination of Segment 1 North and Segment 2 North; (2) Route Option B, which is a combination of Segment 1 North (with Route Segment 18), a portion of Segment 2 North, Connector Segment 2G, and Segment 2 South; and (2) Route Option C, which is Route Segment 17 or the Highway 14 Route Option.[435] Route Option B is Applicant's preferred route as stated in Direct Testimony.[436] These findings compare the Route Option B (Applicant's preferred route) to these two other route options for Segment 1 and 2 of the Project.[437]

~~192.~~198. The EIS only analyzed one end-to-end route for Segment 3 as this portion of the Project involves converting an existing 161/345 kV line to 345/345 kV

[434] Ex. ~~EERA-10~~ PUC-31 at 518 (FEIS).
[435] Ex. ~~EERA-10~~ PUC-31 at 518 (FEIS).
[436] Ex. Xcel-29 at 16:1-8 (E. Heine Direct Testimony).
[437] Ex. ~~EERA-10~~ PUC-31 at 518 (FEIS).

operation or installing a second 345 kV circuit on existing 345/345 kV double-circuit capable structures and no alternatives for this Segment were proposed.[438]

~~193.~~199. The EIS analyzed the potential impacts of four end-to-end Segment 4 route options: (1) Route Option A – Segment 4 West Modification option within the North Rochester to Highway 52 Study Area and then the south-south option within the Highway 52 to the Existing 161 kV Line Study Area; (2) Route Option B – Segment 4 West Modification option within the North Rochester to Highway 52 Study Area and then the south-north option in the Highway 52 to the Existing 161 kV Line Study Area; (3) Route Option C – Segment 4 East option within the North Rochester to Highway 52 Study Area and then the south-north option in the Highway 52 to the Existing 161 kV Line Study Area; and (4) Route Option D – the CapX Co-Locate Option. Applicant's Preferred Route for Segment~~s~~ 4 ~~a~~is "Route Option A" in Chapter 10 of the EIS. In its Post-Hearing Brief, the Applicant stated that it preferred either Route Option A or the CapX Co-Locate Option for Segment 4. These findings compare the Applicant's two preferred routes to the other two route options for Segment 4 of the Project.

VII. FACTORS FOR A ROUTE PERMIT

~~194.~~200. The Power Plant Siting Act (PPSA), Minn. Stat. Ch. 216E, requires that Route Permit determinations "be guided by the state's goals to conserve resources, minimize environmental impacts, minimize human settlement and other land use conflicts, and ensure the state's electric energy security through efficient, cost-effective power supply and electric transmission infrastructure."[439]

~~195.~~201. 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 facilities 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;

[438] Ex. ~~EERA 10~~ PUC-31 at 518 (FEIS).
[439] Minn. Stat. § 216E.03, subd. 7(a).

(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;

(5) analysis of the direct and indirect economic impact of proposed sites and routes including, but not limited to, productive agricultural land lost or impaired;

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

(7) evaluation of alternatives to the applicant's proposed site or route proposed pursuant to subdivisions 1 and 2;

(8) evaluation of potential routes that would use or parallel existing railroad and highway rights-of-way;

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

(10) evaluation of the future needs for additional high-voltage transmission lines in the same general area as any proposed route, and the advisability of ordering the construction of structures capable of expansion in transmission capacity through multiple circuiting or design modifications;

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

(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.[440]

~~196.~~202. Also, 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 route and the use of parallel existing highway right-of-way and, to the extent those are not used for the route, the [C]ommission must state the reasons."

~~197.~~203. 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;[441]

[440] Minn. Stat. § 216E.03, subd. 7(b).
[441] This factor is not applicable here because it applies only to power plant siting.

J. use of existing transportation, pipeline, and electrical transmission systems or rights-of-way;

K. electrical system reliability;

L. costs of constructing, operating, and maintaining the facility which are dependent on design and route;

M. adverse human and natural environmental effects which cannot be avoided; and

N. irreversible and irretrievable commitments of resources.

~~198.~~204. There is sufficient evidence in the record for the ALJ to assess the Project using the criteria and factors set out above.

VIII. APPLICATION OF ROUTING FACTORS

A. Effects on Human Settlement

~~199.~~205. Minnesota Rule 7850.4100(A) requires consideration of the Project's effects on human settlement, including displacement of residences and businesses, noise created during construction and by operation of the Project, and impacts to aesthetics, cultural values, recreation, and public services.

1. Displacement

~~200.~~206. Displacement occurs when a residence or building is required to be removed for construction of the project.[442] Residences and other buildings are not generally allowed by the utilities to be within the ROW of a transmission line for electrical safety code and maintenance reasons.[443] Any residences or other buildings within a proposed ROW have the potential to be removed or displaced.[444]

a. 345 kV Route Options

~~201.~~207. The right-of-way required for a 345 kV transmission line is 150 feet, or 75 feet on either side of the centerline of the route.[445] A potential displacement is defined by the Applicant as any occupied structure located within 75 feet of the centerline of the route.[446] If a potential displacement is identified during the final design

[442] Ex. ~~EERA-10~~ PUC-31 at 107 (FEIS).
[443] Ex. ~~EERA-10~~ PUC-31 at 107 (FEIS).
[444] Ex. ~~EERA-10~~ PUC-31 at 107 (FEIS).
[445] Ex. Xcel-15 at 138 (Application).
[446] Ex. Xcel-15 at 138 (Application); Ex. ~~EERA-10~~ PUC-31 at 107 (FEIS).

of the Project, the Applicant will adjust the final alignment to avoid displacing residents.[447]

~~202.~~208. For Segment 1 and 2, there are no residences located within 75 feet of the Route Option B, so no displacement is anticipated.[448] Route Option C has 4 residences and Route Option A has 1 residence within the ROW that could be subject to displacement; however, the Applicant has indicated no residences would be displaced by the Project.[449]

~~203.~~209. The following table provides the number of residences located within 1,600 feet for the proposed transmission line centerline for the three route options for Segments 1 and 2 and Route Segment 17.[450]

Table 5. Comparison of Residential Impacts for Segments 1 and 2 and Route Segment 17

Route Option	Route Option B (Applicant's Preferred Route for Segment 1 and 2)	Route Option A (Route Segment 1 North and Route Segment 2 North)	Route Option C (Highway 14 or Route Segment 17)
Residences within 0-75 feet of centerline	0	1	4
Residences within 75-500 feet of centerline	122	175	71
Residences within 500-1,600 feet of centerline	96	158	179
Total Residences within 0-1,600 feet of centerline	218	334	254

~~204.~~210. As shown in the table above, the Route Option B has 218 residences within 1,600 feet of the centerline compared to 334 residences for Route Option A and 254 residences for Route Option C.[451]

[447] Ex. ~~EERA-10~~ PUC-31 at 107 (FEIS).
[448] Ex. ~~EERA-10~~ PUC-31 at 519 (FEIS).
[449] Ex. ~~EERA-10~~ PUC-31 at 519 (FEIS); Ex. Xcel-15 at 154 (Application).
[450] Ex. ~~EERA-10~~ PUC-31 at 519 (FEIS).
[451] Ex. ~~EERA-10~~ PUC-31 at 519 (FEIS).

~~205.~~211. The following table provides the number of non-residential structures within 1,600 feet for the proposed transmission line centerline for Segments 1 and 2 and Route Segment 17.[452]

Table 6. Comparison of Non-Residential Structure Impacts for Segments 1 and 2 and Route Segment 17

Route Option	Route Option B (Applicant's Preferred Route for Segment 1 and 2)	Route Option A (Route Segment 1 North and Route Segment 2 North)	Route Option C (Highway 14 or Route Segment 17)
Non-Residential within 0-75 feet of centerline	6	7	9
Non-Residential within 75-500 feet of centerline	279	504	261
Total Non-Residential within 0-500 feet of centerline	285	511	270

~~206.~~212. Route Option A has the most non-residential structures within the 500 feet of the centerline, as compared to Route Option B and Route Option C.[453] All three options have a similar count of non-residential structures within the ROW (6 to 9).[454]

~~207.~~213. For Segment 3, there are no residences or non-residential structures within the ROW of Segment 3 and no displacement is anticipated.[455] Segment 3 has 59 residences within 1,600 feet.[456]

b. 161 kV Route Options

~~208.~~214. The right-of-way required for a 161 kV transmission line is 100 feet wide, or 50 feet on either side of the centerline of the route.[457] A potential displacement is defined by the Applicant as any occupied structure located within 50 feet of the

[452] Ex. ~~EERA-10~~ PUC-31 at 519 (FEIS).
[453] Ex. ~~EERA-10~~ PUC-31 at 519 (FEIS).
[454] Ex. ~~EERA-10~~ PUC-31 at 519 (FEIS).
[455] Ex. ~~EERA-10~~ PUC-31 at 635 (FEIS).
[456] Ex. ~~EERA-10~~ PUC-31 at 532 (FEIS).
[457] Ex. Xcel-15 at 138 (Application).

centerline of the route.[458] If a potential displacement is identified during the final design of the Project, the Applicant will adjust the final alignment to avoid displacing residents.[459]

~~209.~~215. There is one residence located within 50 feet of Route Option A, Route Option B, and Route Option C.[460] No residences are located within 50 feet of Route Option D.[461] While Route Options A, B, and C each have one residence that could be subject to displacement because it is located within ROW, the Applicant has indicated no residences would be displaced by the Project.[462]

~~210.~~216. The following table provides the number of residences located within 1,600 feet for the proposed transmission line centerline for the four Segment 4 route options.[463]

Table 7. Comparison of Residential Impacts for Segment 4

Route Option	Route Option A (Segment 4 West Mod. and South-South)	Route Option B (Segment 4 West Mod. and then South-North)	Route Option C (Segment 4 West and then South-North)	Route Option D (CapX Co-Locate)
Residences within 0-50 feet of centerline	1	1	1	0
Residences within 50-250 feet of centerline	49	34	28	1
Residences within 250-500 feet of centerline	82	45	75	21
Total Residences within 500-1,600 feet of centerline	64	92	130	18

[458] Ex. Xcel-15 at 138 (Application); Ex. ~~EERA-10~~ PUC-31 at 657 (FEIS).
[459] Ex. ~~EERA-10~~ PUC-31 at 659 (FEIS).
[460] Ex. ~~EERA-10~~ PUC-31 at 795 (FEIS).
[461] Ex. ~~EERA-10~~ PUC-31 at 795 (FEIS).
[462] Ex. Xcel-15 at 154 (Application).
[463] Ex. ~~EERA-10~~ PUC-31at 795 (FEIS).

Total Residences within 0-1600 feet of centerline	196	172	234	40

~~211.~~217. As shown in the table above, Route Option D has the fewest number of residences within 1,600 feet of the centerline at 40 residences.[464] Route Option A has 196 residences within 1,600 feet of the centerline compared to 172 residences for Route Option B and 234 residences for Route Option C.[465]

~~212.~~218. The following table provides the number of non-residential structures located within 1,600 feet for the proposed transmission line centerline for Segment 4.[466]

Table 8. Comparison of Non-Residential Structure Impacts for Segment 4

Route Option	**Route Option A (Segment 4 West Mod. And South-South)**	**Route Option B (Segment 4 West Mod. And then South-North)**	**Route Option C (Segment 4 West and then South-North)**	**Route Option D (CapX Co-Locate)**
Non-Residential Structures within 0-50 feet of centerline	3	3	2	0
Non-Residential Structures within 50-250 feet of centerline	72	62	65	2
Non-Residential Structures within 250-500 feet of centerline	123	82	116	48
Non-Residential Structures within 500-1,600 feet of centerline	71	88	139	42

[464] Ex. ~~EERA-10~~ PUC-31 at 795 (FEIS).
[465] Ex. ~~EERA-10~~ PUC-31 at 795 (FEIS).
[466] Ex. ~~EERA-10~~ PUC-31 at 795 (FEIS).

Total Non-Residential Structures within 0-1600 feet of centerline	269	235	322	92

~~213.~~219. Route Option D does not contain any non-residential structures within ROW.[467] Route Options A and B have three non-residential structures, and Route Option C has two non-residential structures, that could be subject to displacement within ROW.[468] Overall, Route Option A has the most non-residential structures within 0-1,600 feet of the centerline with 269 structures and Route Option D has the fewest with 92 structures.[469]

2. Noise

~~214.~~220. The Minnesota Pollution Control Agency has the authority to adopt noise standards pursuant to Minn. Stat. § 116.07, subd. 2.[470] The adopted noise standards are set forth in Minnesota Rule 7030.0050, which sets noise limits for different land uses.[471] These land uses are grouped by Noise Area Classification (NAC) and are separated between the daytime and nighttime noise limits.[472] Residences are classified as NAC-1.[473] The most restrictive MPCA noise limits are a L_{50} of 60 A-weighted decibels (dBA)~~-~~ and a L_{10} of 65 dBA ~~A-weighted decibels (dBA)~~ during the daytime and a L_{50} of 50 dBA and a L_{10} of~~-~~55 dBA during the nighttime.[474]

~~215.~~221. The primary noise-sensitive receptors in the Project area are rural residences.[475] Short-term noise impacts would occur during construction.[476] Impacts would be minimal, and the Applicant would be required to comply with state noise standards.[477] Noise impacts during operation would be negligible except for perceptible noise impacts, particularly during periods of foggy, damp, or light rain conditions.[478] Operation of the Project would meet state noise standards.[479]

[467] Ex. ~~EERA-10~~ PUC-31 at 798 (FEIS).
[468] Ex. ~~EERA-10~~ PUC-31 at 798 (FEIS).
[469] Ex. ~~EERA-10~~ PUC-31 at 798 (FEIS).
[470] Minn. Stat. § 116.07, subd. 2; Ex. ~~EERA-10~~ PUC-31 at 118 (FEIS).
[471] Minnesota R. 7030.0050; Ex. ~~EERA-10~~ PUC-31 at 118 (FEIS).
[472] Ex. ~~EERA-10~~ PUC-31 at 118 (FEIS).
[473] Ex. ~~EERA-10~~ PUC-31 at 118 (FEIS).
[474] Ex. ~~EERA-10~~ PUC-31 at 118 (FEIS).
[475] Ex. Xcel-15 at 179 (Application).
[476] Ex. ~~EERA-10~~ PUC-31 at 117 (FEIS).
[477] Ex. ~~EERA-10~~ PUC-31 at 117 (FEIS).
[478] Ex. ~~EERA-10~~ PUC-31 at 117 (FEIS).
[479] Ex. ~~EERA-10~~ PUC-31 at 117 (FEIS).

~~216.~~222. Noise levels during construction, operation, and maintenance of the 345 kV lines are minimal and are not anticipated to exceed MPCA noise limits.[480]

~~217.~~223. Noise levels during construction, operation, and maintenance of the 161 kV transmission lines are minimal and are not anticipated to exceed MPCA noise limits.[481]

3. Aesthetics

~~218.~~224. Aesthetics refers to the visual quality of an area as perceived by the viewer and forms the impression a viewer has of an area.[482] Aesthetics are unique to the human subject or population, meaning their relative value, is held individually or communally, dependings upon several factors that may include perception, and the strength of values, history, and memory, held either individually or communally resulting in potentially varied and unique responses.[483] Impacts to aesthetic changes are expected to be equally diverse, depending upon individual perception of impact, degree of aesthetic change, strength of commitment to the unimpacted aesthetic, and acceptance of the proposed project.[484] This means that how an individual values aesthetics and reacts to their change, especially perceived impacts to a viewshed, can vary greatly.[485]

~~219.~~225. The landscape in the Project area is primarily agricultural and characterized by fields, rural roads, farms, and homesteads.[486] The majority of the Project area contains existing utility infrastructure, including electric transmission and distribution lines, which visually altered the landscape upon initial establishment.[487] The proposed overhead transmission lines will be visible to observers in the area surrounding the Project.[488] The height of new 345 kV structures would generally range in height from 85 to 175 feet.[489] Several taller structures, approximately 195 feet, would be necessary where Segment 1 South crosses Highway 14 and an existing double-circuit 115 kV line north of the Eastwood substation.[490] The height of new 161 kV structures would generally range in height from 75 to 140 feet.[491]

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[480] Ex. ~~EERA-10~~ PUC-31 at 117, 266, and 541 (FEIS).
[481] Ex. ~~EERA-10~~ PUC-31 at 664 (FEIS).
[482] Ex. ~~EERA-10~~ PUC-31 at 7 (FEIS).
[483] Ex. ~~EERA-10~~ PUC-31 at 7 (FEIS).
[484] Ex. ~~EERA-10~~ PUC-31 at 8 (FEIS).
[485] Ex. ~~EERA-10~~ PUC-31 at 8 (FEIS).
[486] Ex. Xcel-15 at 180 (Application).
[487] Ex. Xcel-15 at 180 (Application).
[488] Ex. Xcel-15 at 180 (Application).
[489] Ex. Xcel-15 at 181 (Application); Ex. ~~EERA-10~~ PUC-31 at 53 (FEIS).
[490] Ex. Xcel-15 at 181 (Application).
[491] Ex. ~~EERA-10~~ PUC-31 at 55 (FEIS).

~~220.~~226. Areas of higher scenic value that intersect with the proposed routes include the Minnesota River Valley Scenic Byway, the Sakatah Singing Hills State Trail, shoreland of waterways and waterbodies, and wildlife management areas.[492]

~~221.~~227. In the Application, the Applicant committed to minimizing aesthetic impacts by avoiding removal of trees where possible, spanning natural areas when feasible, and using existing infrastructure and roadway or transmission facility rights-of-way to the maximum practicable extent.[493]

a. 345 kV Route Options

~~222.~~228. Aesthetic impacts can be minimized by selecting routes that are located away from homes, schools, businesses, and other places where people congregate (for example, parks or other recreation areas).[494] Aesthetic impacts can also be minimized by following existing transmission line ROW where elements of the built environment already define the viewshed.[495]

~~223.~~229. For Segments 1 and 2, aesthetic impacts are anticipated to be moderate for Route Option A, B, and C.[496] Route Option B has less residences within the ROW, route width, and local vicinity, with a total of 218 residences within the local vicinity compared to Route Option A (334 residences) and Route Option C (254 residences).[497]

~~224.~~230. Route Option B also has less non-residential structures within the local vicinity as compared to the two other route alternatives.[498]

~~225.~~231. All three route options for Segments 1 and 2 would result in aesthetic impacts to areas used for recreational purposes as all three would introduce new crossings at the Straight River, a state water trail, where there is no existing infrastructure already present.[499]

~~226.~~232. Route Option A could be double-circuited with or paralleling existing transmission lines for 74 percent of its length, and 90 percent of its length would be parallel to existing infrastructure (transmission lines, roads, or railroads).[500] Route Option B could be double-circuited with or paralleling existing transmission lines

[492] Ex. Xcel-15 at 182-183 (Application).
[493] Ex. Xcel-15 at 183 (FEIS).
[494] Ex. ~~EERA-10~~PUC-31 at 522 (FEIS).
[495] Ex. ~~EERA-10~~PUC-31 at 522 (FEIS).
[496] Ex. ~~EERA-10~~PUC-31 at 522 (FEIS).
[497] Ex. ~~EERA-10~~PUC-31 at 522 (FEIS).
[498] Ex. ~~EERA-10~~PUC-31 at 522 (FEIS).
[499] Ex. ~~EERA-10~~PUC-31 at 522 (FEIS).
[500] Ex. ~~EERA-10~~PUC-31 at 522 (FEIS).

for 55 percent of its length and 64 percent of its length would be parallel to existing infrastructure (transmission lines, roads, or railroads).[501] Route Option C could be double-circuited with or paralleling existing transmission lines for 22 percent of its length and 86 percent of its length would be parallel to existing infrastructure (transmission lines, roads, or railroads).[502]

~~227.~~233. The Segment 3 portion of the Project is anticipated to have minimal aesthetic impacts because it will be double-circuited on existing structures.[503]

b. 161 kV Route Options

~~228.~~234. Aesthetic impacts are anticipated to be moderate for the 161 kV route options of the transmission lines.[504]

~~229.~~235. Aesthetic impacts can be minimized by selecting routes that are located away from homes, schools, businesses, and other places where people congregate (for example, parks or other recreation areas).[505] Route Option D has less residences within the ROW, route width, and local vicinity, with 40 residences compared to the Route Option A with 196 residences, Route Option B with 172 residences, and Route Option C with 234 residences.[506]

~~230.~~236. All four 161 kV route options would cross~~ing~~ the Zumbro River, a state water trail, where there is existing infrastructure already present.[507] Route Options A, B, and C cross the Zumbro River south of 75th Street and would be double-circuited with an existing 69 kV line.[508] Route Option D would cross the Zumbro River near White Bridge Road and would be parallel to an existing 345 kV line crossing.[509] Route Options A and B would intersect the Douglas State Trail near Rochester, where there is no existing transmission line infrastructure.[510]

~~231.~~237. Efforts to mitigate aesthetic impacts primarily include double-circuiting or paralleling with existing transmission lines.[511] Route Option A would be double-circuited with or paralleling existing transmission lines for 74 percent of its length and 82 percent of its length would be parallel to existing infrastructure.[512] Route

[501] Ex. ~~EERA-10~~PUC-31 at 522 (FEIS).
[502] Ex. ~~EERA-10~~PUC-31 at 522 (FEIS).
[503] Ex. ~~EERA-10~~PUC-31 at 635 (FEIS).
[504] Ex. ~~EERA-10~~PUC-31 at 798 (FEIS).
[505] Ex. ~~EERA-10~~PUC-31 at 645 (FEIS).
[506] Ex. ~~EERA-10~~PUC-31 at 798 (FEIS).
[507] Ex. ~~EERA-10~~PUC-31 at Maps 66-21 and 66-27 (FEIS).
[508] Ex. ~~EERA-10~~PUC-31 at Map 66-21 (FEIS).
[509] Ex. ~~EERA-10~~PUC-31 at Map 66-27 (FEIS).
[510] Ex. ~~EERA-10~~PUC-31 at 798 (FEIS).
[511] Ex. ~~EERA-10~~PUC-31 at 798 (FEIS).
[512] Ex. ~~EERA-10~~PUC-31 at 798 (FEIS).

Option B would be double-circuited with or paralleling existing transmission lines for 61 percent of its length and 71 percent of its length would be parallel to existing infrastructure.[513] Route Option C would be double-circuited with or paralleling existing transmission lines for 13 percent of its length and 70 percent of its length would be parallel to existing infrastructure.[514] Route Option D would be double-circuited with or paralleling existing transmission lines for ~~0~~84 percent of its length and ~~84~~90 percent of its length would be parallel to existing infrastructure.[515]

4. Cultural Values

~~232.~~238. Cultural values consist of shared community beliefs and attitudes expressed within a given area and provide a framework for community unity.[516] Cultural values can be informed by history and heritage, local resources, economy, local and community events, and common experiences.[517]

~~233.~~239. The Project area is generally rural in nature, with pockets of more populated municipal areas.[518] Southeastern Minnesota is known for its vast landscapes and wooded bluffs along the Mississippi River corridor.[519] It is a health care and agricultural powerhouse, where advanced manufacturing is a strong industry.[520]

~~234.~~240. Segment 1 goes through Blue Earth, Le Sueur, Waseca, and Rice counties in the southeastern region of Minnesota.[521] Segment 1 is primarily in a rural setting, with some more populated municipal areas scattered throughout.[522]

~~235.~~241. Segment 2 goes through Rice County and Goodhue County in the southeastern region of Minnesota.[523] Segment 2 is primarily in a rural setting with two cities, Faribault and Wanamingo, along the proposed routes.[524]

[513] Ex. ~~EERA-10~~PUC-31 at 798 (FEIS).
[514] Ex. ~~EERA-10~~PUC-31 at 798 (FEIS).
[515] Ex. ~~EERA-10~~PUC-31 at 795~~8~~ (FEIS).
[516] Ex. ~~EERA-10~~PUC-31 at 103 (FEIS).
[517] Ex. ~~EERA-10~~PUC-31 at 103 (FEIS).
[518] Ex. ~~EERA-10~~PUC-31 at 103, 256, 534, and 652 (FEIS).
[519] Ex. ~~EERA-10~~PUC-31 at 104 (FEIS).
[520] Ex. ~~EERA-10~~PUC-31 at 104 (FEIS).
[521] Ex. ~~EERA-10~~PUC-31 at 104 (FEIS).
[522] Ex. ~~EERA-10~~PUC-31 at 104 (FEIS).
[523] Ex. ~~EERA-10~~PUC-31 at 258 (FEIS).
[524] Ex. ~~EERA-10~~PUC-31 at 258 (FEIS).

~~236.~~242. Segment 3 goes through Goodhue, Olmsted, and Wabasha counties in the southeastern region of Minnesota.[525] Segment 3 is primarily in a rural setting, with two cities, Pine Island and Oronoco.[526]

~~237.~~243. Segment 4 goes through Goodhue, Olmsted, and Wabasha County in the southeastern region of Minnesota.[527] Segment 4 is primarily in a rural setting, with two cities, Pine Island and Oronoco along the proposed routes.[528]

~~238.~~244. The Project area was populated primarily by Dakota and Ojibwe tribes in the early to mid-1800s.[529] Most lands in the local vicinity of the Project were ceded to the U.S. government during the 1851 treaty.[530]

~~239.~~245. Today, only the Prairie Island Indian Community (PIIC) owns property crossed by the routes proposed for the Project.[531] They own property southeast of Pine Island adjacent to Highway 52 in Segment 4 referred to as Elk Run.[532] The Elk Run property is within PIIC ancestral territory that holds historical and cultural significance.[533] The property has areas within it that are intended to be preserved due to the rare native land cover.[534] This land would continue to be protected and utilized for Tribal members participating in culturally sensitive activities.[535]

~~240.~~246. The route width of the Segment 4 CapX Co-locate Option intersects the northeastern portion of the Elk Run property, while Segment 4 East would be outside its southern boundary, on the south of Highway 52.[536] The route width of the Segment 4 CapX Co-locate Option was extended east in order to have the ability for the final alignment to avoid the Elk Run property.[537]

a. 345 kV Route Options

~~241.~~247. No adverse impacts to cultural resources are anticipated to occur as a result of the construction or ~~of~~ operation of the 345 kV portion of the Project.[538]

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[525] Ex. ~~EERA-10~~PUC-31 at 536 (FEIS).
[526] Ex. ~~EERA-10~~PUC-31 at 536 (FEIS).
[527] Ex. ~~EERA-10~~PUC-31 at 655 (FEIS).
[528] Ex. ~~EERA-10~~PUC-31 at 655 (FEIS).
[529] Ex. ~~EERA-10~~PUC-31 at 103 (FEIS).
[530] Ex. ~~EERA-10~~PUC-31 at 103 (FEIS).
[531] Ex. Xcel-15 at 190 (Application); Ex. ~~EERA-10~~PUC-31 at 654 (FEIS).
[532] Ex. Xcel-15 at 190 (Application); Ex. ~~EERA-10~~PUC-31 at 654 (FEIS).
[533] Ex. ~~EERA-10~~PUC-31 at 655 (FEIS).
[534] Ex. ~~EERA-10~~PUC-31 at 655 (FEIS).
[535] Ex. ~~EERA-10~~PUC-31 at 655 (FEIS).
[536] Ex. ~~EERA-10~~PUC-31 at 656 (FEIS).
[537] Ex. ~~EERA-10~~PUC-31 at 656 (FEIS).
[538] Ex. ~~EERA-10~~PUC-31 at 103, 256, and 534 (FEIS); Ex. Xcel-15 at 192 (Application).

b. 161 kV Route Options

~~242.~~248. In their scoping comment letter, the PIIC stated that construction of the Segment 4 CapX Co-Locate Option would be in very close proximity to land of significant prairie biodiversity and intact botanical genetics.[539] They also noted that the Segment 4 CapX Co-Locate Option would undermine the purpose of its acquisition of Elk Run by perpetuating undue infrastructure burdens on a historically disadvantaged Tribal community.[540] PIIC believes these impacts can be avoided or minimized selection of either Segment 4 West, Segment 4 West Modification, or Segment 4 East.[541]

~~243.~~249. No other adverse impacts to cultural resources are anticipated to occur as a result of the construction or ~~of~~ operation of the 161 kV portion of the Project.[542]

5. Recreation

~~244.~~250. Recreational opportunities in and near the proposed routes for the Project include local parks, the Sakatah Singing Hills State Trail, public watercourses, and snowmobile trails.[543] Recreational activities near the proposed routes for the Project could including picnicking, hiking, cross-country skiing, biking, bird-watching, fishing, hunting, canoeing/kayaking, and snowmobiling.[544]

a. 345 kV Route Options

~~245.~~251. For Segments 1 and 2, there are local parks within the route width, but not the right-of-way, and impacts to these local parks are not anticipated for Route Options A, B, or C.[545] Intermittent impacts to these parks would occur during construction, and long-term impacts would include aesthetic impacts.[546] The route width for Route Option A and Route Option B cross the Sakath Singing Hills State Trail for 4.2 miles.[547] Existing infrastructure, including roads and transmission lines, crosses the trail in multiple locations.[548] Impacts to the trail are anticipated to be minimal.[549] The Cannon River is a designated state water trail and wild and scenic river and is located within the route width of Route Option A and Route Option B; there is

[539] Ex. ~~EERA-10~~PUC-31 at 657 (FEIS).
[540] Ex. ~~EERA-10~~PUC-31 at 657 (FEIS).
[541] Ex. ~~EERA-10~~PUC-31 at 657 (FEIS).
[542] Ex. ~~EERA-10~~PUC-31 at 652 (FEIS); Ex. Xcel-15 at 192 (Application).
[543] Ex. ~~EERA-10~~PUC-31 at 122, 271, 546, and 669 (FEIS).
[544] Ex. ~~EERA-10~~PUC-31 at 123 (FEIS).
[545] Ex. ~~EERA-10~~PUC-31 at 522 (FEIS).
[546] Ex. ~~EERA-10~~PUC-31 at 522 (FEIS).
[547] Ex. ~~EERA-10~~PUC-31 at 522 (FEIS).
[548] Ex. ~~EERA-10~~PUC-31 at 522 (FEIS).
[549] Ex. ~~EERA-10~~PUC-31 at 125 and 522 (FEIS).

an existing transmission line at the proposed crossing location.[550] The Straight River is a state water trail and is located within the route width of Route Options A, B, and C.[551] There are no existing transmission lines at the crossings.[552] The Zumbro River is a state water trail and is located within the route width of Route Option C; there are existing transmission lines at the three crossings.[553] Impacts to the Cannon River, Straight River, and Zumbro River are anticipated to be minimal.[554] The Minnesota River Valley Scenic Byway follows the Minnesota River and crosses Route Options A, B, and C; minimal impacts to the scenic byway are anticipated.[555]

~~246.~~252. Impacts on recreation as a result of Segment 3 are anticipated to be minimal and temporary during construction of the Project.[556]

b. 161 kV Route Options

~~247.~~253. For Segment 4, the 161 kV transmission line might be visible from recreation areas include a publicly accessible trail system, public watercourses, and snowmobile trails.[557] Recreational resources within the route width of the proposed routes for Segment 4 subject to impact include a publicly accessible trail system, public watercourses (including a designated state water trail), and snowmobile trails.[558] Intermittent impacts would occur during construction and long-term impacts would include aesthetic impacts.[559] Approximately 8.1 miles of the Douglas State Trail is within the route width of Route Options A and B. Existing infrastructure, including roads and transmission lines, cross the trail in multiple locations. Impacts to the trail are anticipated to be minimal.[560] Route Options A, B, and C cross the Zumbro River, a designated state water trail, in multiple locations, while the Route Option D route width only crosses once.[561] There are existing transmission lines at most of the crossings, including the one crossing of Route Option D.[562]

~~248.~~254. Other recreational resources noted during scoping include a private airstrip, the Rochester Archery Club, and the Rochester Aero Model Society.[563] The

[550] Ex. ~~EERA-10~~PUC-31 at 522 (FEIS).
[551] Ex. ~~EERA-10~~PUC-31 at 522 (FEIS).
[552] Ex. ~~EERA-10~~PUC-31 at 522 (FEIS).
[553] Ex. ~~EERA-10~~PUC-31 at 522 (FEIS).
[554] Ex. ~~EERA-10~~PUC-31 at 522 (FEIS).
[555] Ex. ~~EERA-10~~PUC-31 at 522 (FEIS).
[556] Ex. ~~EERA-10~~PUC-31 at 635 (FEIS).
[557] Ex. ~~EERA-10~~PUC-31 at 798 (FEIS).
[558] Ex. ~~EERA-10~~PUC-31 at 795 (FEIS).
[559] Ex. ~~EERA-10~~PUC-31 at 795 (FEIS).
[560] Ex. ~~EERA-10~~PUC-31 at 795 (FEIS).
[561] Ex. ~~EERA-10~~PUC-31 at 795 (FEIS).
[562] Ex. ~~EERA-10~~PUC-31 at 795 (FEIS).
[563] Ex. ~~EERA-10~~PUC-31 at 671 (FEIS).

City of Oronoco also provided during scoping that Route Option C (Segment 4 East) would impact Oronoco City Park and the Lake Shady lakebed.[564]

6. Socioeconomics

~~249.~~255. The construction and operation of the Project is expected to have minimal long-term impacts on local (county and municipal) economies due to the relatively short-term time frame of construction (2-3 years).[565] Construction of the Project will last approximately 2-3 years and will employ 50-100 construction workers.[566] The Applicant will pay prevailing wages for applicable construction jobs in the Project area.[567] The Project will support multiple employment sectors (i.e., utilities, construction, manufacturing) and provide employment opportunities during the duration of construction and operation.[568] During construction, local businesses may experience increases in revenue due to increased purchase of goods and services.[569] Local construction crew expenditures will result in a temporary, positive impacts on local economies.[570]

~~250.~~256. Long-term benefits of the Project include ensuring continued, reliable electric service for communities served by the Project and economic benefits through incremental increases in revenues from utility property taxes.[571] Additionally, the Project will support increases in renewable energy production and enhance the capacity for the transmission system to accommodate growing communities, which will benefit local economies.[572]

~~251.~~257. No adverse socioeconomic impacts are anticipated as a result of construction or operation of the Project.[573]

7. Environmental Justice

~~252.~~258. Environmental justice involves the fair treatment and meaningful involvement of people regardless of race, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.[574] An environmental justice analysis is typically conducted through the

[564] Ex. ~~EERA-10~~PUC-31 at 671 (FEIS).
[565] Ex. Xcel-15 at 186 (Application); Ex. ~~EERA-10~~PUC-31 at 127, 274, 410, 549, and 673 (FEIS).
[566] Ex. Xcel-15 at 186 (Application); Ex. ~~EERA-10~~PUC-31 at 127, 274, 410, 549, and 673-674 (FEIS).
[567] Ex. Xcel-15 at 186 (Application); Ex. ~~EERA-10~~PUC-31 at 127, 274, 410, 549-550, and 674 (FEIS).
[568] Ex. Xcel-15 at 186 (Application); Ex. ~~EERA-10~~PUC-31 at 127, 274, 410, 550, and 674 (FEIS).
[569] Ex. Xcel-15 at 186 (Application); Ex. ~~EERA-10~~PUC-31 at 127, 274, 410, 550, and 674 (FEIS).
[570] Ex. Xcel-15 at 186 (Application); Ex. ~~EERA-10~~PUC-31 at 127, 274, 410, 550, and 674 (FEIS).
[571] Ex. Xcel-15 at 186 (Application).
[572] Ex. Xcel-15 at 186 (Application).
[573] Ex. Xcel-15 at 186 (Application); Ex. ~~EERA-10~~PUC-31 at 127, 274, 410, 550, and 674 (FEIS).
[574] Ex. Xcel-15 at 186 (Application).

analysis of socioeconomic indicators to determine areas where adverse environmental and human health impacts could disproportionately affect low-income or minority (American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic) populations. Areas with disproportionately high low-income or minority populations are considered environmental justice areas.[575]

~~253.~~259. Minn. Stat. § 216B.1691, subd. 1(e), defines an "environmental justice area" as an area that meets one or more of the following criteria: (1) 40 percent or more of the area's total population is nonwhite; (2) 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 the area's resident's over the age of five have limited English proficiency; or (4) the area is located within Indian county, as defined in United States Code, title 18, section 1151.[576]

~~254.~~260. The ~~Draft~~ Final EIS assessed potential environmental justice impacts by first identifying if any census tracts meet a definition of an environmental justice area per its socioeconomical information.[577] Second, census tracts meeting an environmental justice definition are reviewed to consider if those residents might be disproportionally affected.[578]

a. 345 kV Route Options

~~255.~~261. For Segment 1, following the statutory definition of environmental justice areas, census tracts 1703 and 1704 in Blue Earth County were identified as an environmental justice area of concern because around 39 percent and 36 percent of the population have a reported income that is less than 200 percent of the federal poverty level.[579] These two census tracts are crossed by Segment 1 South but not Segment 1 North.[580] However, disproportionate impacts to census tracts 1703 and 1704 are not anticipated because the proposed transmission line could be double-circuited with existing transmission lines through these tracts.[581]

~~256.~~262. For Segment 2, census tract 708.01 in Rice County was identified as an environmental justice area of concern because around 41.5 percent of the population identifies as a person of color.[582] This census tract crosses Segment 2 North and Segment 2 South, which is included in both the Applicant's Preferred Route and

[575] Ex. Xcel-15 at 186 (Application).
[576] Minn. Stat. § 216B.1691, subd. 1(e).
[577] Ex. ~~EERA-10~~PUC-31 at 108 (FEIS).
[578] Ex. ~~EERA-10~~PUC-31 at 109 (FEIS).
[579] Ex. ~~EERA-10~~PUC-31 at 109 (FEIS).
[580] Ex. ~~EERA-10~~PUC-31 at 111 (FEIS).
[581] Ex. ~~EERA-10~~PUC-31 at 111 (FEIS).
[582] Ex. ~~EERA-10~~PUC-31 at 261 (FEIS).

Route Option A.[583] However, disproportionate impacts to census tract 708.01 are not anticipated.[584] Segment 2 North could be double-circuited with an existing 161 kV line where the anticipated alignment occurs within census tract 708.1.[585] Segment 2 South intersects the census tract, but the anticipated alignment is outside of the tract.[586] In addition, there is already existing transmission line infrastructure in the area.[587]

~~257.~~263. Overall, for Segments 1 and 2, no environmental justice impacts are anticipated for the Route Option A, B, or C.[588]

~~258.~~264. Similarly, construction, maintenance, and operation of Segment 3 is not anticipated to result in any environmental impacts.[589] No environmental justice areas were identified in Segment 3.[590]

b. 161 kV Route Options

~~259.~~265. No environmental justice impacts are anticipated for the 161 kV route options, however, while no reservations are located near Segment 4, the PIIC owns property that is partially located near Route Option C and Route Option D.[591] PIIC requested that other route options for Segment 4 be selected to avoid potential impacts to the property.[592]

8. Public Service and Infrastructure

~~260.~~266. Public services within the Project area include police, fire, and ambulance services; hospitals; water and wastewater services; school districts; utilities; and other public services such as public utility infrastructure.[593]

~~261.~~267. Potential impacts to roads, railroads, and electric and other utilities are anticipated to be short-term, intermittent, and localized during construction of the Project.[594] Impacts to water wells, septic systems, and pipelines are not expected to occur.[595]

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[583] Ex. ~~EERA-10~~PUC-31 at 261 (FEIS).
[584] Ex. ~~EERA-10~~PUC-31 at 261 (FEIS).
[585] Ex. ~~EERA-10~~PUC-31 at 263 (FEIS).
[586] Ex. ~~EERA-10~~PUC-31 at 263 (FEIS).
[587] Ex. ~~EERA-10~~PUC-31 at 263 (FEIS).
[588] Ex. ~~EERA-10~~PUC-31 at 108, 263, and 395 (FEIS).
[589] Ex. ~~EERA-10~~PUC-31 at 538 (FEIS).
[590] Ex. ~~EERA-10~~PUC-31 at 539 (FEIS).
[591] Ex. ~~EERA-10~~PUC-31 at 659 (FEIS).
[592] Ex. ~~EERA-10~~PUC-31 at 660 (FEIS).
[593] Ex. ~~EERA-10~~PUC-31 at 128-131(FEIS).
[594] Ex. ~~EERA-10~~PUC-31 at 132 (FEIS).
[595] Ex. ~~EERA-10~~PUC-31 at 132 (FEIS).

~~262.~~268. Section 5.3.4 and 5.3.14 of the Sample Route Permit contain mitigation measures related to transportation and public services and utilities.[596] In addition, the Applicant committed to ongoing coordination with MnDOT, local and county road authorities, railroad companies, and the FAA.[597] The Applicant also committed to attempt to avoid or limit roadway closures to the maximum extent practicable and using conductor safety guides over roads or utilize helicopters for stringing activities where possible.[598] The Applicant also noted impacts to traffic would be mitigated by limiting construction traffic to the project right-of-way and existing access points to the maximum extent feasible and minimizing impacts related to dust by proper use of BMPs (e.g., soil matting, wetting) to reduce the potential for dust.[599] The Applicant also committed to utilizing appropriate safety measures such as use of safety signage, installation of temporary barrier structures, and employing spotters during clearing or stringing activities.[600] Finally, the Applicant will meet with MnDOT, county highway departments, township road supervisors, and/or city road personnel to address any issues that occur during roadway construction.[601]

B. Effects on Public Health and Safety

~~263.~~269. Minnesota Rule 7850.4100(B) requires consideration of the Project's effect on public health and safety.

1. Construction and Operation of the Project

~~264.~~270. The Project will be designed according to local, state, and National Electrical Safety Code standards regarding ground clearance, crossing utilities clearance, building clearance, strength of materials, and right-of-way widths.[602] Construction crews and/or contract crews will comply with local, state, and National Electrical Safety Code standards regarding facility installation and standard construction practices.[603] Established Applicant and industry safety procedures will be followed during and after installation of the transmission line, including clear signage during all construction activities.[604]

~~265.~~271. The proposed transmission line will be equipped with protective devices (circuit breakers and relays located in substations where transmission lines

[596] Ex. ~~EERA-10~~PUC-31 at 133 (FEIS).
[597] Ex. ~~EERA-10~~PUC-31 at 133 (FEIS).
[598] Ex. ~~EERA-10~~PUC-31 at 133 (FEIS).
[599] Ex. ~~EERA-10~~PUC-31 at 133 (FEIS).
[600] Ex. ~~EERA-10~~PUC-31 at 133 (FEIS).
[601] Ex. ~~EERA-10~~PUC-31 at 134 (FEIS).
[602] Ex. Xcel-15 at 174 (Application).
[603] Ex. Xcel-15 at 174 (Application).
[604] Ex. Xcel-15 at 174 (Application).

terminate) to safeguard the public in the event of an accident, or if the structure or conductor falls to the ground.[605] The protective equipment will de-energize the transmission line should such an event occur.[606] In addition, the substation facilities will be properly fenced and accessible only by authorized personnel.[607]

~~266.~~272. As a result of proper safeguards and protective measures, impacts to public health and safety are not anticipated.[608]

2. Electric and Magnetic Fields

~~267.~~273. Electric and magnetic fields (EMF)s are invisible areas of energy associated with use of electrical power.[609] For the lower frequencies associated with power lines (referred to as ELF), EMF should be considered separately – electric fields and magnetic fields, measured in kV/m and milligauss (mG), respectively.[610] Electric fields are dependent on the voltage of a transmission line and magnetic fields are dependent on the current carried by a transmission line.[611] 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 hertz (cycles per second).[612]

~~268.~~274. 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.[613] This means that the strength of EMF that reaches a house adjacent to a transmission line ROW will be significantly weaker than it would be directly under the transmission line.[614] Electric fields are easily shielded by conducting objects, such as trees and buildings, further shielding electric fields.[615]

~~269.~~275. There is no federal standard for transmission line electric fields.[616] The Commission, however, has imposed a maximum electric field limit of 8 kV/m measured at one meter above the ground.[617] The maximum electric field associated with

[605] Ex. Xcel-15 at 174 (Application).
[606] Ex. Xcel-15 at 174 (Application).
[607] Ex. Xcel-15 at 174 (Application).
[608] Ex. Xcel-15 at 174 (Application).
[609] Ex. Xcel-15 at 158 (Application).
[610] Ex. Xcel-15 at 158 (Application).
[611] Ex. Xcel-15 at 158 (Application).
[612] Ex. Xcel-15 at 158 (Application).
[613] Ex. ~~EERA-10~~PUC-31 at 282 (FEIS).
[614] Ex. ~~EERA-10~~PUC-31 at 282 (FEIS).
[615] Ex. ~~EERA-10~~PUC-31 at 282 (FEIS).
[616] Ex. ~~EERA-10~~PUC-31 at 283 (FEIS).
[617] Ex. ~~EERA-10~~PUC-31 at 283-284 (FEIS).

the Project is calculated to be 6.9 kV/m.[618] The Commission has not adopted a magnetic field standard for transmission lines.[619]

~~270.~~276. The possible impact of EMF exposure on human health has been investigated by public health professionals for the past several decades.[620] The Commission, based on research conducted by others, has repeatedly found that there is insufficient evidence to demonstrate a causal relationship between EMF exposure and any adverse human health effects.[621]

~~271.~~277. No impacts to human health due to EMF are anticipated as a result of the Project.[622]

3. Stray Voltage and Induced Voltage

~~272.~~278. Stay 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.[623] The term generally describes a voltage between two objects where no voltage difference should exist.[624] Stray voltage, more specifically, is voltage that exists between the neutral wire of either the service entrance or of premise wiring and grounded objects in buildings such as barns or milking parlors.[625]

~~273.~~279. Stray voltage is generally associated with distribution lines and this Project – a transmission line – does not create stray voltage because it does not directly connect to businesses, residences, or farms.[626]

~~274.~~280. The Applicant has committed to work with landowners that have any issues with stray voltage following construction of the Project.[627]

~~275.~~281. No impacts to human health are anticipated from stay voltage due to construction of the Project.[628]

[618] Ex. ~~EERA-10~~PUC-31 at 284 (FEIS).
[619] Ex. ~~EERA-10~~PUC-31 at 284 (FEIS).
[620] Ex. ~~EERA-10~~PUC-31 at 283 (FEIS).
[621] Ex. Xcel-15 at 172 (Application).
[622] Ex. ~~EERA-10~~PUC-31 at 135, 282, 425, 556, and 680 (FEIS).
[623] Ex. ~~EERA-10~~PUC-31 at 145 (FEIS).
[624] Ex. ~~EERA-10~~PUC-31 at 145 (FEIS).
[625] Ex. ~~EERA-10~~PUC-31 at 145 (FEIS).
[626] Ex. ~~EERA-10~~PUC-31 at 145 (FEIS).
[627] Ex. ~~EERA-10~~PUC-31 at 146 (FEIS).
[628] Ex. ~~EERA-10~~PUC-31 at 145, 292, 430, 565, and 691 (FEIS).

~~276.~~282. Induced voltage occurs when electric fields from a transmission line extend to a conductive object near the transmission line.[629] Conductive objects include tractors, automobiles, insulated pipelines, electric fences, or telecommunication lines.[630]

~~277.~~283. The transmission line 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).[631] A shock at 5 mA is considered unpleasant, not dangerous, and allows for a person to still release the energized object that they are holding that is causing the shock.[632] In addition, the Commission imposed a maximum electric field limit of 8 kV/m measured at one meter above the ground.[633] The standard is designed to prevent serious hazards from shocks when touching large objects parked under AC transmission lines of 500 kV or greater.[634]

~~278.~~284. Section 5.3.4 of the Sample Route Permit contains the following mitigation related 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 non-stationary object within the 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 NESC. The Permittee shall address and rectify any induced current problems that arise during transmission line operation."[635]

~~279.~~285. The Applicant committed to meeting electrical performance standards.[636] Appropriate measures would be taken to prevent induced voltage problems when the Project parallels or crosses objects.[637]

~~280.~~286. No impacts to human health are anticipated from induced voltage due to the Project.[638]

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[629] Ex. ~~EERA-10~~PUC-31 at 146 (FEIS).
[630] Ex. ~~EERA-10~~PUC-31 at 147 (FEIS).
[631] Ex. ~~EERA-10~~PUC-31 at 147 (FEIS).
[632] Ex. ~~EERA-10~~PUC-31 at 147 (FEIS).
[633] Ex. ~~EERA-10~~PUC-31 at 147 (FEIS).
[634] Ex. ~~EERA-10~~PUC-31 at 147 (FEIS).
[635] Ex. ~~EERA-10~~PUC-31 at Appendix H (FEIS).
[636] Ex. Xcel-15 at 174 (Application).
[637] Ex. Xcel-15 at 174 (Application).
[638] Ex. ~~EERA-10~~PUC-31 at 147, 294, 431, 567, and 692 (FEIS).

C. Effects on Land-Based Economies

~~281.~~287. Minnesota Rule 7850.4100 (C) requires consideration of the Project's effects on land-based economies, specifically agriculture, forestry, tourism, and mining.

1. Agriculture

~~282.~~288. Agriculture is the predominant land-use within the Project area, and when structures are placed within an agricultural field, they would interfere with farming operations.[639] Potential impacts are assessed through consideration of total agricultural land use, presence of prime farmlands, and agricultural practices.[640]

a. 345 kV Route Options

~~283.~~289. The majority of the land within the route width is agricultural and impacts to agriculture can only be mitigated.[641] Prudent routing (e.g., ROW sharing via double-circuiting or paralleling with existing infrastructure) could help minimize agricultural impacts.[642] Route Option A shares or parallels existing infrastructure for 90 percent of its length, Route Option B shares or parallels existing infrastructure for 64% of its length, and Route Option C shares or parallels existing infrastructure for 86% of its length. [643]

~~284.~~290. The following table provides the acres of agricultural land and prime farmland impacted for each route option for Segments 1 and 2.[644]

Table 9. Potential Agricultural and Prime Farmland Impacts for Segments 1 and 2

Route Option	Route Option B (Applicant's Preferred Route for Segment 1 and 2)	Route Option A (Route Segment 1 North and Route Segment 2 North)	Route Option C (Highway 14 or Route Segment 17)
Agricultural land (acres in ROW)	1,061	1,024	1,208
Prime Farmland (acres in ROW)	907	967	1,436

[639] Ex. ~~EERA-10~~PUC-31 at 150 (FEIS).
[640] Ex. ~~EERA-10~~PUC-31 at 150 (FEIS).
[641] Ex. ~~EERA-10~~PUC-31 at 522 (FEIS).
[642] Ex. ~~EERA-10~~PUC-31 at 522 (FEIS).
[643] Ex. ~~EERA-10~~PUC-31 at 522 (FEIS).
[644] Ex. ~~EERA-10~~PUC-31 at 520 (FEIS).

~~285.~~291. Overall, agricultural impacts are anticipated to be minimal for the 345 kV proposed routes.[645]

~~286.~~292. Segment 3 is located within an existing right-of-way and no new agricultural impacts are anticipated during the operation of the Project.[646] During construction, temporary agricultural impacts may occur.[647]

b. 161 kV Route Options

~~287.~~293. The majority of the land within the route width for the proposed 161 kV line is agricultural and impacts can only be mitigated.[648] All routing options share or parallel ROW with existing infrastructure for 70 percent or more of their respective length.[649]

~~288.~~294. The following table provides the acres of agricultural land and prime farmland impacted for each route option for Segments 4.[650]

Table 10. Potential Agricultural and Prime Farmland Impacts for Segment 4

Route Option	Route Option A (Segment 4 West Mod. And South-South)	Route Option B (Segment 4 West Mod. And then South-North)	Route Option C (Segment 4 West and then South-North)	Route Option D (CapX Co-Locate)
Agricultural land (acres in ROW)	153	170	119	159
Prime Farmland (acres in ROW)	190	193	154	108

~~289.~~295. Overall, agricultural impacts are anticipated to be minimal for the 161 kV proposed routes.[651]

[645] Ex. ~~EERA-10~~PUC-31 at 522 (FEIS).
[646] Ex. ~~EERA-10~~PUC-31 at 635 (FEIS).
[647] Ex. ~~EERA-10~~PUC-31 at 635 (FEIS).
[648] Ex. ~~EERA-10~~PUC-31 at 798 (FEIS).
[649] Ex. ~~EERA-10~~PUC-31 at 798 (FEIS).
[650] Ex. ~~EERA-10~~PUC-31 at 796 (FEIS).
[651] Ex. ~~EERA-10~~PUC-31 at 798 (FEIS).

2. Forestry

~~290.~~296. Forestry is a land-based economy that was assessed in the Draft EIS to determine whether the Project would impact the forestry industry.[652] Potential impacts are assessed through identification of commercial operations.[653]

a. 345 kV Route Options

~~291.~~297. No notable forestry resources were identified within the route width of Route Options A, B, or C; therefore, no impacts to forestry are anticipated.[654]

~~292.~~298. Route Segment 3 does cross the Richard J. Dorer Memorial Hardwood State Forest for approximately 2 miles within the existing right-of-way.[655] This ROW is currently cleared, and Segment 3 would result in the continued permanent loss of forestry resources.[656]

b. 161 kV Route Options

~~293.~~299. No notable forestry resources were identified within the route width of Route Options A, B, C, or D; therefore, no impacts to forestry are anticipated.[657]

3. Tourism

~~294.~~300. The EIS for assessed potential impacts to the tourism land-based economy based on potential tourist sites within the local vicinity of the Project.[658] Potential impacts were assessed through identification of known resources used by non-residents that would likely bringing in non-local revenue to the area.[659]

a. 345 kV Route Options

~~295.~~301. Tourism impacts in nearby incorporated towns and recreational opportunities in publicly accessible lands and waters are anticipated to be negligible to minimal for Route Options A, B, and C.[660]

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[652] Ex. ~~EERA-10~~PUC-31 at 154 (FEIS).
[653] Ex. ~~EERA-10~~PUC-31 at 154 (FEIS).
[654] Ex. ~~EERA-10~~PUC-31 at 522 (FEIS).
[655] Ex. ~~EERA-10~~PUC-31 at 635 (FEIS).
[656] Ex. ~~EERA-10~~PUC-31 at 635 (FEIS).
[657] Ex. ~~EERA-10~~PUC-31 at 798 (FEIS).
[658] Ex. ~~EERA-10~~PUC-31 at 156 (FEIS).
[659] Ex. ~~EERA-10~~PUC-31 at 156 (FEIS).
[660] Ex. ~~EERA-10~~PUC-31 at 522 (FEIS).

~~296.~~302. Impacts to tourism as a result of the construction, operation, and maintenance of Segment 3 are anticipated to be negligible to minimal.[661]

b. 161 kV Route Options

~~297.~~303. Recreational opportunities within Segment 4 include publicly accessible lands and waters used for outdoor activities.[662] Impacts to the tourism-based economy anticipated to be negligible to minimal as a result of the construction, operation, and maintenance of the 161 kV route options.[663]

4. Mining

~~298.~~304. Potential impacts to the mining industry are assessed through identification of known, existing mining operations and assessing potential impacts to those operations given the potential introduction of the Project.[664]

a. 345 kV Route Options

~~299.~~305. No active gravel pits were identified within the route width of Route Options A, B, or C.[665] Any impacts to mining are anticipated to be minimal for the route options for Segment 1 and 2.[666]

~~300.~~306. No active gravel pits were identified within the route width of Segment 3; therefore, no impacts are anticipated.[667]

b. 161 kV Route Options

~~301.~~307. Two gravel pits, a borrow pit, sand quarry, a prospect mine, and a bedrock quarry were identified within Route Option A and B's route widths.[668] The gravel pits and sand quarry appear inactive based on a review of aerial imagery. [669] The borrow pit, prospect mine, and bedrock quarry appear active based on a review of aerial imagery.[670] The anticipated alignment of Route Option A and B do not cross any workspaces of active mining operations based on the aerial imagery. [671]

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[661] Ex. ~~EERA-10~~PUC-31 at 635 (FEIS).
[662] Ex. ~~EERA-10~~PUC-31 at 799 (FEIS).
[663] Ex. ~~EERA-10~~PUC-31 at 799 (FEIS).
[664] Ex. ~~EERA-10~~PUC-31 at 155 (FEIS).
[665] Ex. ~~EERA-10~~PUC-31 at 522 (FEIS).
[666] Ex. ~~EERA-10~~PUC-31 at 522 (FEIS).
[667] Ex. ~~EERA-10~~PUC-31 at 635 (FEIS).
[668] Ex. ~~EERA-10~~PUC-31 at 799 (FEIS).
[669] Ex. ~~EERA-10~~PUC-31 at 799 (FEIS).
[670] Ex. ~~EERA-10~~PUC-31 at 799 (FEIS).
[671] Ex. ~~EERA-10~~PUC-31 at 799 (FEIS).

308. Three prospect mines, two bedrock quarries, and a sand quarry were identified within Route Option C's route width.[672] The prospect mines and quarries appear to be inactive.[673]

~~302.~~309. No active gravel pits were identified within the route width of Route Option D; therefore, impacts to mining are anticipated to be minimal.[674]

~~303.~~310. Impacts to aggregate mines and prospective site could be negatively by construction of the transmission line if the structures interfere with access to aggregate resources or the ability to remove them.[675] If impacts to mining operations would occur, the Applicant would be required to coordinate those impacts with the mining operator.[676] The Applicant noted in the Application that they have been meeting with the operators of the Milestone Materials Rochester Landscape Supply Center, an active aggregate mining operation, to discuss the Project and no impacts on facility operations are anticipated.[677]

D. Effects on Archeological and Historic Resources

~~304.~~311. Minnesota's HVTL rules requires consideration of the effects of the Project on archaeological and historic resources, also referred to collectively as cultural resources.[678]

~~305.~~312. To determine potential impacts on archeological and historic resources of the Project, the EIS assessed such impacts within one mile of the route alternatives.[679] Direct impacts to archaeological and historic resources could result from construction activities such as ROW clearing, placement of structures, construction associated with substations and access roads, temporary construction areas, and vehicle and equipment operation.[680]

~~306.~~313. 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 Transmission Facility. In the event that a resource is encountered, the

[672] Ex. ~~EERA-10~~PUC-31 at 799 (FEIS).
[673] Ex. ~~EERA-10~~PUC-31 at 799 (FEIS).
[674] Ex. PUC-31 at 799 (FEIS).
[675] Ex. ~~EERA-10~~PUC-31 at 702 (FEIS).
[676] Ex. ~~EERA-10~~PUC-31 at 702 (FEIS).
[677] Ex. ~~EERA-10~~PUC-31 at 702 (FEIS).
[678] Minn. R. 7850.4100(D).
[679] Ex. ~~EERA-10~~PUC-31 at 157 (FEIS).
[680] Ex. ~~EERA-10~~PUC-31 at 157 (FEIS).

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 Department of Commerce staff or Commission staff.[681]

a. 345 kV Route Options

~~307.~~314. With regard to archeological resources, Route Option C's route width contains two National Registry of Historic Places (NRHP)-eligible archaeological sites as compared to no sites within the route width for Route Options A and B.[682] Route Option C's route width has more unevaluated sites for the NRHP (28) compared to Route Option A (7) and Route Option B (3).[683] Route Option C's route width contains more potential historic cemeteries (12) than Route Option A (9) or Route Option B (3).[684] However, the exact locations of the cemeteries are unknown.[685]

~~308.~~315. With regard to historic resources, Route Option C's route width has more previously documented NRHP-eligible historic architectural resources (14) compared to Route Option A (3) and Route Option B (0).[686] Route Option C's route width includes more historic architectural resources which are unevaluated for the NRHP (37) compared to Route Option A (17) and Route Option B (2).[687]

[681] Ex. PUC-9 at 8-9 (Sample Route Permit).
[682] Ex. ~~EERA-10~~PUC-31 at 523 (FEIS).
[683] Ex. ~~EERA-10~~PUC-31 at 523 (FEIS).
[684] Ex. ~~EERA-10~~PUC-31 at 523 (FEIS).
[685] Ex. ~~EERA-10~~PUC-31 at 523 (FEIS).
[686] Ex. ~~EERA-10~~PUC-31 at 523 (FEIS).
[687] Ex. ~~EERA-10~~PUC-31 at 523 (FEIS).

~~309.~~316. The following table compares the number archaeological sites, historic architectural resources, and historic cemeteries within the route width of the three route options for Segments 1 and 2.[688]

Table 11. Archaeological and Historic Resources in Segments 1 and 2

Route Option	Route Option B (Applicant's Preferred Route for Segment 1 and 2)	Route Option A (Route Segment 1 North and Route Segment 2 North)	Route Option C (Highway 14 or Route Segment 17)
Archaeological sites in route width (count in route width)	3	7	34
Historic architectural resources in route width (count in route width)	10	19	54
Historic cemeteries (count in route width)	3	9	12

~~310.~~317. Route Option B encounters the fewest archaeological and historic architecture within the route width as compared to Route Option A and Route Option C.[689]

~~311.~~318. The Applicant will conduct survey efforts to inform potential impacts on archaeological and historic resources and mitigation efforts.[690] Impacts to archaeological and historic resources in Segments 1 and 2 are anticipated to be avoided or mitigated. [691]

~~312.~~319. One potential historic cemetery is within Segment 3's route width, but the exact location is unknown.[692] The Applicant will conduct survey efforts to inform potential impacts and mitigation efforts.[693]

b. 161 kV Route Options

[688] Ex. ~~EERA-10~~PUC-31 at 520 (FEIS).
[689] Ex. ~~EERA-10~~PUC-31 at 520 (FEIS).
[690] Ex. ~~EERA-10~~PUC-31 at 523 (FEIS).
[691] Ex. ~~EERA-10~~PUC-31 at 523 (FEIS).
[692] Ex. ~~EERA-10~~PUC-31 at 636 (FEIS).
[693] Ex. ~~EERA-10~~PUC-31 at 636 (FEIS).

~~313.~~320. With regard to archeological resources, Route Option C and Route Option D's route widths contain one (the same) NRHP-eligible archaeological site; route widths for Route Options A and B do not contain any NRHP-eligible sites.[694] Route Options A and B have more unevaluated sites for the NRHP (4) compared to Route Option C (2), and Route Option D (1).[695] Route Option A's route width contains more potential historic cemeteries (3), than Route Option B (2), Route Option C (1), and Route Option D (1).[696] However, the exact locations of the cemeteries are unknown.[697]

~~314.~~321. With regard to historic resources, there is one eligible historic architectural resource within the route width of Route Option C.[698] The NRHP-eligible resource, OL-ORT-00013/ William-Rucker Farmstead, intersects the route width along U.S. Highway 52, south of Oronoco, along a portion of the segment that would not be double-circuited or parallel an existing transmission line.[699]

~~315.~~322. The following table compares the number archaeological sites, historic architectural resources, and historic cemeteries within the ROW and/or route width of the four route options for Segment 4.[700]

Table 12. Archaeological and Historic Resources in Segment 4

Route Option	**Route Option A** **(Segment 4 West Mod. And South-South)**	**Route Option B** **(Segment 4 West Mod. And then South-North)**	**Route Option C** **(Segment 4 West and then South-North)**	**Route Option D** **(CapX Co-Locate)**
Archaeological sites in route width (count in ROW, count in route width)	3	3	5	2

[694] Ex. ~~EERA-10~~PUC-31 at 799 (FEIS).
[695] Ex. ~~EERA-10~~PUC-31 at 799 (FEIS).
[696] Ex. ~~EERA-10~~PUC-31 at 799 (FEIS).
[697] Ex. ~~EERA-10~~PUC-31 at 799 (FEIS).
[698] Ex. ~~EERA-10~~PUC-31 at 799 (FEIS).
[699] Ex. ~~EERA-10~~PUC-31 at 799 (FEIS).
[700] Ex. ~~EERA-10~~PUC-31 at 795 (FEIS).

Historic architectural resources in route width (count in ROW, count in route width)	9	5	29	3
Historic cemeteries (count in route width)	3	2	1	1

~~316.~~323. The Applicant will conduct survey efforts to inform potential impacts on archaeological and historic resources and mitigation efforts. [701] Impacts to archaeological and historic resources in Segment 4 are anticipated to be avoided or mitigated. [702]

E. Effects on Natural Environment

~~317.~~324. Minnesota's HVTL routing factors require consideration of the Project's effects on the natural environment including effects on air and water quality, flora, and fauna.[703]

1. Air Quality

~~318.~~325. Air quality for the Project is considered within the Project area.[704] Construction of the Project will result in intermittent and temporary emissions of criteria pollutants.[705] Impacts associated with fugitive dust and exhaust and can be mitigated.[706] Long-term impacts to air quality would also be minimal and are associated with the creation of ozone and nitrous oxide emissions along the HVTL and substations.[707]

~~319.~~326. The Clean Air Act is a federal law that regulates air emissions from stationary and mobile sources. The Clean Air Act requires the U.S. Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for six criteria pollutants: ground-level ozone (O_3), particular matter (PM10/PM2.5), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), carbon monoxide (CO), and lead (Pb).[708] The

[701] Ex. ~~EERA-10~~PUC-31 at 799 (FEIS).
[702] Ex. ~~EERA-10~~PUC-31 at 799 (FEIS).
[703] Minn. Stat. § 216E.03, subd. 7(b)(1)-(2); Minn. R. 7850.4100, subp. E.
[704] Ex. ~~EERA-10~~PUC-31 at 169 (FEIS).
[705] Ex. ~~EERA-10~~PUC-31 at 169 (FEIS).
[706] Ex. ~~EERA-10~~PUC-31 at 169 (FEIS).
[707] Ex. ~~EERA-10~~PUC-31 at 169 (FEIS).
[708] Ex. ~~EERA-10~~PUC-31 at 170 (FEIS).

EPA designates all counties traversed by the Project to be in attainment for all NAAQS.[709]

~~320.~~327. Air emissions during construction would primarily consist of emissions from construction equipment and vehicles and would include pollutants such as CO_2, nitrogen oxides (NO_x), and PM.[710] Dust generated from earth disturbing activities also gives rise to PM10/PM2.5.[711] Double-circuiting with an existing transmission line would result in less PM10/PM2.5 emissions due to less ground disturbance.[712] Adverse effects on the surrounding environment are expected to be negligible due to the temporary disturbance during construction and the intermittent nature of the emission- and dust-producing construction phases.[713]

~~321.~~328. During operations, air emissions would not require any air quality permits.[714] Small amounts of emissions would be associated with the intermittent project operation and maintenance activities via mobile combustion and particulate roadway dust generation.[715]

~~322.~~329. During operation, small amounts of NO_X and O_3 would be created due to corona from the operation of transmission lines.[716] The production rate of O_3 due to corona discharges decreases with humidity and less significantly with temperature. Rain causes an increase in O_3 production.[717] In addition to weather conditions, design of the transmission line also influences the O_3 production rate.[718] The O_3 production rate decreases significantly as the conductor diameter increases and is greatly reduced for bundled conductors over single conductors.[719] Conversely, the production rate of O_3 increases with applied voltage.[720] The emission of O_3 from the operation of a transmission line of the voltages proposed for the Project would be minimal.[721]

~~323.~~330. Emissions would be generated from fuel combustion during routine inspection and maintenance activities.[722] The Applicant would perform an

[709] Ex. ~~EERA-10~~PUC-31 at 170 (FEIS).
[710] Ex. ~~EERA-10~~PUC-31 at 171 (FEIS).
[711] Ex. ~~EERA-10~~PUC-31 at 171 (FEIS).
[712] Ex. ~~EERA-10~~PUC-31 at 171 (FEIS).
[713] Ex. ~~EERA-10~~PUC-31 at 171 (FEIS).
[714] Ex. ~~EERA-10~~PUC-31 at 171 (FEIS).
[715] Ex. ~~EERA-10~~PUC-31 at 171 (FEIS).
[716] Ex. ~~EERA-10~~PUC-31 at 171 (FEIS).
[717] Ex. ~~EERA-10~~PUC-31 at 171 (FEIS).
[718] Ex. ~~EERA-10~~PUC-31 at 171 (FEIS).
[719] Ex. ~~EERA-10~~PUC-31 at 171 (FEIS).
[720] Ex. ~~EERA-10~~PUC-31 at 171 (FEIS).
[721] Ex. ~~EERA-10~~PUC-31 at 171 (FEIS).
[722] Ex. ~~EERA-10~~PUC-31 at 171 (FEIS).

annual aerial inspection of the line.[723] Once every four years, crews would visually inspect the lines from the ground.[724] Additionally, vegetation maintenance would generally occur once every four years. Emissions from routine inspection and maintenance activities would be minimal.[725]

~~324.~~331. If construction activities generate problematic dust levels, the Applicant would employ construction-related practices to control fugitive dust as needed.[726] This 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[727].

a. 345 kV Route Options

~~325.~~332. Construction of Route Options A, B, and C will result in minor short-term air quality impacts from the operation of heavy-duty construction equipment and fugitive dust due to travel on unpaved roads and excavation of transmission structure foundations.[728] If construction activities generate problematic dust levels, the Applicant will employ construction-related practices to control fugitive dust as needed.[729]

~~326.~~333. For Segment 3, construction of the Project will also result in minor-short term air quality impacts from the operation of heavy-duty construction equipment and fugitive dust.[730] The Applicant will follow construction-related practices to control fugitive dust as needed.[731]

b. 161 kV Route Options

~~327.~~334. Similar to the 345 kV route options, construction of the Route Options A, B, C, and D will result minor-short-term air quality impacts from the operation of heavy-duty construction equipment and fugitive dust.[732] The Applicant will employ construction-related practices to control fugitive dust as needed.[733]

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[723] Ex. ~~EERA-10~~PUC-31 at 171 (FEIS).
[724] Ex. ~~EERA-10~~PUC-31 at 171 (FEIS).
[725] Ex. ~~EERA-10~~PUC-31 at 171 (FEIS).
[726] Ex. ~~EERA-10~~PUC-31 at 171 (FEIS).
[727] Ex. ~~EERA-10~~PUC-31 at 171 (FEIS).
[728] Ex. ~~EERA-10~~PUC-31 at 169, 313, and 464 (FEIS).
[729] Ex. ~~EERA-10~~PUC-31 at 169, 313, and 464 (FEIS).
[730] Ex. ~~EERA-10~~PUC-31 at 585 (FEIS).
[731] Ex. ~~EERA-10~~PUC-31 at 585 (FEIS).
[732] Ex. ~~EERA-10~~PUC-31 at 716 (FEIS).
[733] Ex. ~~EERA-10~~PUC-31 at 716 (FEIS).

2. Greenhouse Gas Emissions

~~328.~~335. Greenhouse gas (GHG) emissions for the Project is considered within the ROW.[734] Project construction activities will result in temporary and intermittent increases in GHG emissions from fuel combustion in construction equipment and commuter vehicles.[735] 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 single location.[736]

~~329.~~336. The use pf fluorinated gas, sulfur hexafluoride (SF6), in high-voltage circuit breakers may increase GHG emissions associated with the Project.[737] Potential emissions from SF6 are minimal and not expected routinely because they are attributed to faulty equipment and leakage.[738] Equipment containing SF6 is designed to avoid SF6 emissions.[739]

a. 345 kV Route Options

~~330.~~337. Minimization efforts to reduce Project GHG emission may include efficient planning of vehicle and equipment mobilization and travel, vehicle idle time reduction, property equipment upkeep, efficient planning of material deliver, proper use of power tools, battery power tools when feasible, and alternative fuel vehicle usage when feasible.[740] The Project would ultimately result in a net decrease of GHG emissions during operation, as it would facilitate the replacement of legacy fossil fuel generation with renewable resources.[741]

~~331.~~338. The Applicant would employ similar mitigation measures for Segment 3 to reduce GHG emissions during construction.[742]

b. 161 kV Route Options

~~332.~~339. The same GHG minimization efforts used for the 345 kV route options would be followed for the 161 kV route options so as to minimize impacts while achieving an overall net GHG reduction for the Project.[743]

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[734] Ex. ~~EERA-10~~PUC-31 at 178 (FEIS).
[735] Ex. ~~EERA-10~~PUC-31 at 178 (FEIS).
[736] Ex. ~~EERA-10~~PUC-31 at 178 (FEIS).
[737] Ex. ~~EERA-10~~PUC-31 at 180 (FEIS).
[738] Ex. ~~EERA-10~~PUC-31 at 180 (FEIS).
[739] Ex. ~~EERA-10~~PUC-31 at 180 (FEIS).
[740] Ex. ~~EERA-10~~PUC-31 at 178, 320, and 472 (FEIS).
[741] Ex. ~~EERA-10~~PUC-31 at 178, 320, and 472 (FEIS).
[742] Ex. ~~EERA-10~~PUC-31 at 594 (FEIS).
[743] Ex. ~~EERA-10~~PUC-31 at 724 (FEIS).

3. Climate Change

~~333.~~340. Climate change is considered within the Project area.[744] The impact analysis for climate considers existing patterns in the region of influence and how the Project could be impacted by climate change, as well as how the Project could affect climate change.[745]

a. 345 kV Route Options

~~334.~~341. The Project is engineered to be resilient under changing climate factors and is designed to follow or exceed North America Electric Reliability Corporation reliability standards.[746] Construction of the Project would result in additional GHG emissions that contribute to climate change; however, the operation of the Project will provide additional transmission capacity to support additional renewable resources.[747]

~~335.~~342. The EIS analyzed the risk assessment for each of the counties which the Route Option A, B, and C traverse within Segments 1 and 2 to help identify current and future climate change risks.[748] Across the 345 kV route options for Segments 1 and 2, the flood risk is minor or moderate for all counties, the fire risk is moderate for all counties, and the wind, air quality, and heat risk are all minor.[749]

~~336.~~343. Segment 3 is also engineered to be resilient under changing climate factors and its operation will provide additional transmission capacity to support additional renewable resources.[750] The EIS analyzed the risk assessment for each of the counties that Segment 3 traverses across to identify current and future climate change risks.[751] Across Segment 3, the flood risk is minor or moderate for all counties, the fire risk is moderate for all counties, and the wind, air quality, and heat risk are all minor.[752]

b. 161 kV Route Options

[744] Ex. ~~EERA-10~~PUC-31 at 172 (FEIS).
[745] Ex. ~~EERA-10~~PUC-31 at 172 (FEIS).
[746] Ex. ~~EERA-10~~PUC-31 at 174, 318, and 469 (FEIS).
[747] Ex. ~~EERA-10~~PUC-31 at 175, 318, and 469 (FEIS).
[748] Ex. ~~EERA-10~~PUC-31 at 172, 315, and 466 (FEIS).
[749] Ex. ~~EERA-10~~PUC-31 at 172, 315, and 466 (FEIS).
[750] Ex. ~~EERA-10~~PUC-31 at 590-591 (FEIS).
[751] Ex. ~~EERA-10~~PUC-31 at 590 (FEIS).
[752] Ex. ~~EERA-10~~PUC-31 at 590 (FEIS).

~~337.~~344. The 161 kV Route Options are similarly engineered to be resilient under changing climate factors and will provide additional transmission capacity to support additional renewable resources.[753]

~~338.~~345. The EIS analyzed the risk assessment for each of the counties that Route Options A, B, C, and D traverse within Segment 4 to help identify current and future climate change risks.[754] Across the 161 kV route options, the flood risk is minor or moderate for all counties, the fire risk is moderate for all counties, and the wind, air quality, and heat risk are all minor.[755]

4. Water Quality and Resources

~~339.~~346. The Application and EIS analyzed impacts to water quality and resources, including groundwater, wetlands, and surface water that will be crossed by or located in the right-of-way of the proposed 345 kV route options and the 161 kV route options.[756]

a. Groundwater

~~340.~~347. Impacts to groundwater is considered within the ROW.[757] Minnesota is divided into six groundwater provinces based on bedrock and glacial geology.[758] Installation of concrete structure foundations could require dewatering to enable construction activities and could impact bedrock and groundwater if it is unable to be avoided or if minimization measures are not implemented.[759]

~~341.~~348. Wells are documented in the Project area as identified in the Minnesota Well Index, which provides information about wells and borings such as location, depth, geology, construction, and static water level at the time of construction.[760]

~~342.~~349. The Wellhead Protection Area program administers the public and non-public community water supply source-water protection in Minnesota.[761] This program also identifies areas surrounding public water supply wells that contribute

[753] Ex. ~~EERA-10~~PUC-31 at 718 (FEIS).
[754] Ex. ~~EERA-10~~PUC-31 at 718 (FEIS).
[755] Ex. ~~EERA-10~~PUC-31 at 718 (FEIS).
[756] Minn. R. 7850.4100(G).
[757] Ex. ~~EERA-10~~PUC-31 at 180 (FEIS).
[758] Ex. ~~EERA-10~~PUC-31 at 180 (FEIS).
[759] Ex. ~~EERA-10~~PUC-31 at 180 (FEIS).
[760] Ex. ~~EERA-10~~PUC-31 at 181 (FEIS).
[761] Ex. ~~EERA-10~~PUC-31 at 182 (FEIS).

groundwater to the well and identify contamination on the land surface or in the water that can affect the drinking water supply.[762]

~~343.~~350. The Applicant will coordinate with the MnDNR to confirm that geotechnical evaluations and structure installation placements do not disrupt groundwater hydrology.[763] Based on the results of the geotechnical evaluations, the Applicant will obtain a Water Appropriate Permit from the MnDNR if groundwater dewatering activities would be greater than 10,000 gallons of water per day or 1 million gallons per year.[764]

(a) 345 kV Route Options

~~344.~~351. Two wells were identified in the Minnesota Well Index in Route Option A and B. [765] Three drinking water supply management areas were also identified in Route Option A and B.[766] The Applicant also identified underground natural gas aquifer storage and production facilities near Waterville, Minnesota.[767] There are numerous gas injection/withdrawal wells, water observation wells, and test wells within the extent of the gas storage field and lands under lease.[768] According to the Minnesota Well Index, there are nine wells that appear to be associated with facility operations located within the Segment 1 South ROW, which is not part of Route Options A, B, or C.[769]

~~345.~~352. Multiple wells are located within the Project Area of Route Option C, as well as numerous drinking water supply management areas.[770]

~~346.~~353. For Segment 3, the Applicant will assess any wells identified within the right-of-way during construction to determine if they are open, and seal them, in accordance with Minnesota requirements.[771]

~~347.~~354. Potential impacts to groundwater could occur during construction if the artesian groundwater conditions are present and the confining layer is breached.[772] Indirect impacts to groundwater can be mitigated by avoiding or minimizing impacts

[762] Ex. ~~EERA-10~~PUC-31 at 182 (FEIS).
[763] Ex. ~~EERA-10~~PUC-31 at 186, 326, and 478 (FEIS).
[764] Ex. ~~EERA-10~~PUC-31 at 186, 326, and 479 (FEIS).
[765] Ex. ~~EERA-10~~PUC-31 at 179 and 321 (FEIS).
[766] Ex. ~~EERA-10~~PUC-31 at 181-182 and 324 (FEIS).
[767] Ex. ~~EERA-10~~PUC-31 at 181-182 (FEIS).
[768] Ex. ~~EERA-10~~PUC-31 at 182 (FEIS).
[769] Ex. ~~EERA-10~~PUC-31 at 182 (FEIS).
[770] Ex. ~~EERA-10~~PUC-31 at 476 (FEIS).
[771] Ex. ~~EERA-10~~PUC-31 at 599 (FEIS).
[772] Ex. ~~EERA-10~~PUC-31 at 182, 321, 476, and 598 (FEIS).

to surface waters, such as controlling soil erosion and sedimentation during construction activities.[773]

~~348.~~355. Overall impacts to groundwater resources are not anticipated because the Applicant will store materials, including fuel and gasoline, in sealed containers to prevent spills, leaks, or other discharges to groundwater.[774]

(b) 161 kV Route Options

~~349.~~356. There are 10 wells within the Project right-of-way for Route Options A, B, and C.[775] Further, there are four drinking water supply management areas in Route Options A, B, and C.[776] Route Option D has no wells or drinking water supply management areas within its right-of-way.

~~350.~~357. The Applicant will coordinate with the Minnesota Department of Natural Resources to confirm geotechnical investigation and structure installation placement does not disrupt groundwater hydrology.[777] The Applicant will also assess any wells identified within the right-of-way during Project construction to determine if they are open and seal them if necessary.[778]

~~351.~~358. The 161 kV route options will experience similar potential impacts and mitigation as the 345 kV route options.[779]

b. Wetlands

~~352.~~359. Impacts to wetlands are considered within the ROW.[780] The Project could temporarily or permanently impact wetlands if they cannot be avoided through Project design.[781] In most cases, wetlands can be spanned to avoid placing structures within the wetland.[782] When a wetland cannot be spanned, construction would occur within the wetland.[783]

[773] Ex. ~~EERA-10~~PUC-31 at 182, 321, 476, and 598 (FEIS).
[774] Ex. ~~EERA-10~~PUC-31 at 182, 321 476, and 598 (FEIS).
[775] Ex. ~~EERA-10~~PUC-31 at 728-729 (FEIS).
[776] Ex. ~~EERA-10~~PUC-31 at 730 (FEIS).
[777] Ex. ~~EERA-10~~PUC-31 at 731 (FEIS).
[778] Ex. ~~EERA-10~~PUC-31 at 731 (FEIS).
[779] Ex. ~~EERA-10~~PUC-31 at 731-732 (FEIS).
[780] Ex. ~~EERA-10~~PUC-31 at 215 (FEIS).
[781] Ex. ~~EERA-10~~PUC-31 at 215 (FEIS).
[782] Ex. ~~EERA-10~~PUC-31 at 215 (FEIS).
[783] Ex. ~~EERA-10~~PUC-31 at 215 (FEIS).

~~353.~~360. The National Wetlands Inventory (NWI), as updated by the MnDNR, identifies wetland complexes in the EIS.[784]

(a) 345 kV Route Options

~~354.~~361. All three 345 kV route options for Segments 1 and 2 have relatively similar acreages of wetlands, with Route Option A having the most wetland in the ROW (141 acres) and Route Option C having the least (129 acres).[785] The ROW of all three route options intersect forested wetland, with Route Option C intersecting the most (15 acres) and Route Option B intersecting the least (11 acres).[786] Because Route Option C would parallel U.S. Highway 14 for the majority of its length and Route Option A and Route Option B would double-circuit an existing transmission line for much of their lengths, most of forested wetlands within the existing ROW for both options have already been cleared.[787] However, there are three forested wetlands within the ROW of Route Option C that would require clearing adjacent to PWI watercourses.[788] The ROW Route Option A and Route Option B have nine crossings of wetlands that are wider than 1,000 feet; Route Option C has two crossings of wetlands that are wider than 1,000 feet.[789]

~~355.~~362. Two calcareous fens are located less than five miles from Route Options A and B.[790]

~~356.~~363. For Segment 3, the wetlands within this right-of-way are primarily non-forested, with only 10 acres of forested wetlands.[791] Temporary impacts for access could occur to the wetlands, but impacts will be minimal.[792]

(b) 161 kV Route Options

~~357.~~364. Route Option A and B have the most wetland acreage within the ROW, 12 and 11 acres respectively, and 5 acres of which is forested wetland.[793] Route Option D has the least wetland acreage in the ROW at 4 acres.[794] Route Option C has

[784] Ex. ~~EERA-10~~PUC-31 at 213 (FEIS).
[785] Ex. ~~EERA-10~~PUC-31 at 523 (FEIS).
[786] Ex. ~~EERA-10~~PUC-31 at 523 (FEIS).
[787] Ex. ~~EERA-10~~PUC-31 at 523 (FEIS).
[788] Ex. ~~EERA-10~~PUC-31 at 523 (FEIS).
[789] Ex. ~~EERA-10~~PUC-31 at 523 (FEIS).
[790] Ex. ~~EERA-10~~PUC-31 at 523 (FEIS).
[791] Ex. ~~EERA-10~~PUC-31 at 636 (FEIS).
[792] Ex. ~~EERA-10~~PUC-31 at 636 (FEIS).
[793] Ex. ~~EERA-10~~PUC-31 at 799 (FEIS).
[794] Ex. ~~EERA-10~~PUC-31 at 799 (FEIS).

8 acres of wetland and is the only route option that does not have forested wetland within its ROW.[795]

~~358.~~365. Route Options A and B cross a wetland that is wider than 700 feet, where an existing transmission line is not present, and could require pole placement within the wetland.[796]

c. Surface Water

~~359.~~366. The Project is within the Upper Mississippi and Minnesota River Basins and crosses two major watersheds.[797] Many of these watercourses and waterbodies are designated as public watercourses and public water basins by the Minnesota Department of Natural Resources in the public waters inventory (PWI).[798]

~~360.~~367. Major watercourses in the route width include Long Lake, Eagle Lake, Fish Lake, Mud Lake, Tentoka Lake, Lower Sakatah Lake, Wells Lake, Sprague Lake, Lily Lake, and several unnamed lakes.[799]

(a) 345 kV Route Options

~~361.~~368. Table 13 below summarizes the surface waters within the ROW and route widths of three end-to-end routes studied in the EIS for Segment 1 and 2.[800]

Table 13. Surface Water Crossings for Segments 1 and 2

Route Options	**Route Option B** **(Applicant's Preferred Route for Segment 1 and 2)**	**Route Option A** **(Route Segment 1 North and Route Segment 2 North)**	**Route Option C** **(Highway 14 or Route Segment 17)**
National Hydrography Dataset stream crossings (count)	73	84	62
PWI stream crossings (count)	23	32	9
Trout stream crossings (count)	0	0	1

[795] Ex. ~~EERA-10~~PUC-31 at 799 (FEIS).
[796] Ex. ~~EERA-10~~PUC-31 at 799 (FEIS).
[797] Ex. ~~EERA-10~~PUC-31 at 206 (FEIS).
[798] Ex. ~~EERA-10~~PUC-31 at 207 (FEIS).
[799] Ex. ~~EERA-10~~PUC-31 at 207 (FEIS).
[800] Ex. ~~EERA-10~~PUC-31 at 520 (FEIS).

Impaired stream crossings (count)	12	15	6
National Hydrography Dataset Lake crossings	4	4	4
Impaired lake crossings	1	1	0
PWI basin/wetland crossings	10	10	1
Forested wetlands (acres in ROW)	11	12	15
Total wetlands (acres in ROW)	135	141	129
Wetland crossings greater than 1,000 feet (count	9	9	2

~~362.~~369. For Segments 1 and 2, Route Option A has the most watercourse crossings (84) and Route Option C has the least (62).[801] However, Route Option A would cross approximately half of these watercourses while double-circuiting existing transmission lines. Route Option C would cross a trout stream, while Route Options A and B avoid trout streams.[802] Route Options A and B have 10 PWI basin/wetland crossings, while Route Option C only has 1; however, these PWI crossings are in areas that could be double-circuited.[803]

~~363.~~370. All three route options would cross waterbodies that are greater than 1,000 feet wide (e.g., Eagle Lake) and could require placement of structures within them if they cannot be spanned. [804]

~~364.~~371. Wetlands within the ROW of Segment 3 is mostly non-forested with 10 acres being forested wetlands.[805] Temporary impacts for access could occur to the wetlands, but impacts may be minimized by using best management practices.[806]

[801] Ex. ~~EERA-10~~PUC-31 at 520 (FEIS).
[802] Ex. ~~EERA-10~~PUC-31 at 520 (FEIS).
[803] Ex. ~~EERA-10~~PUC-31 at 520 (FEIS).
[804] Ex. ~~EERA-10~~PUC-31 at 520 (FEIS).
[805] Ex. ~~EERA-10~~PUC-31 at 636 (FEIS).
[806] Ex. ~~EERA-10~~PUC-31 at 636 (FEIS).

(b) 161 kV Route Options

~~365.~~372. Table 14 below denotes the surface waters within the right-of-way and route widths of four end-to-end routes for Segment 4 studied in the EIS.[807]

Table 14. Surface Water Crossings for Segment 4

Route Options	Route Option A (Segment 4 West Mod. And South-South)	Route Option B (Segment 4 West Mod. And then South-North)	Route Option C (Segment 4 West and then South-North)	Route Option D (CapX Co-Locate)
National Hydrography Dataset stream crossings (count)	20	21	23	30
PWI stream crossings (count)	5	5	3	1
Impaired stream crossings (count)	3	3	3	0
National Hydrography Dataset Lake crossings	0	0	5	1
PWI basin/wetland crossings	0	0	5	1
Forested wetlands (acres in ROW)	5	5	0	1
Total wetlands (acres in ROW)	12	11	8	4

~~366.~~373. Route Option D has 30 stream crossings, the most of any route crossing, while the other three options have between 20 and 23 crossings.[808] Route

[807] Ex. ~~EERA-10~~PUC-31 at 796 (FEIS).
[808] Ex. ~~EERA-10~~PUC-31 at 796 (FEIS).

Options A and B would have the most PWI watercourse crossings.[809] Route Option C would have the most waterbody crossings, including PWI basins. [810] Route Options A and B would not cross any waterbodies.[811]

~~367.~~374. Many of the watercourse crossings would occur in areas that the Project would be double circuited with or paralleling existing transmission lines or highway ROW. [812]

5. Flora

~~368.~~375. Vegetation resources across the Project are dominated by agricultural vegetation and crops, including grain, soybeans, hay/haylage, sweet corn, corn for silage, green peas, corn for grain, and oats for grain.[813]

~~369.~~376. Construction of the Project may result in short-term impacts such as clearing, compacting, or otherwise disturbing vegetation, could occur during construction and maintenance activities.[814] Potential long-term impacts on vegetation would occur where structures are located or where conversion of forested vegetation to low-growing vegetation would be requirements.[815]

~~370.~~377. The Project area is located within the Eastern Broadleaf Forest Province, which is a forested vegetation province that serves as an ecotone between semi-arid prairie of the southwest and semi-humid conifer-deciduous forests of the northwest.[816] The Project crosses four ecological subsections including the Big Woods, Oak Savanna, Rochester Plateau, and Blufflands subsections.[817]

~~371.~~378. Construction and maintenance activities have the potential to result in the introduction or spread of noxious weeds.[818] Other potential impacts to flora include vegetation disturbance along wind breaks, woodlots, fence rows, grassland swales, and other natural areas.[819] Disturbance may include cutting, mowing, and removal of vegetation, crushing of vegetation with construction equipment, and grading soils. This disturbance will be temporary during construction.[820]

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[809] Ex. ~~EERA-10~~PUC-31 at 796 (FEIS).
[810] Ex. ~~EERA-10~~PUC-31 at 796 (FEIS).
[811] Ex. ~~EERA-10~~PUC-31 at 796 (FEIS).
[812] Ex. ~~EERA-10~~PUC-31 at 796 (FEIS).
[813] Ex. ~~EERA-10~~PUC-31 at 213, 349, 503, 620, and 756 (FEIS).
[814] Ex. Xcel-15 at 288 (Application).
[815] Ex. ~~EERA-10~~PUC-31 at 212 (FEIS).
[816] Ex. Xcel-15 at 286 (Application).
[817] Ex. Xcel-15 at 286 (Application).
[818] Ex. Xcel-15 at 289 (Application).
[819] Ex. Xcel-15 at 289 (Application).
[820] Ex. Xcel-15 at 289 (Application).

~~372.~~379. Most of the existing vegetation, other than agricultural lands, in the right-of-way across all ~~the regions is~~ route options consists of forested landcover.[821] Table 15 below summaries the number of acres covered of forested landcover in the 345 kV route options for Segments 1 and 2.[822]

Table 15. Forested Landcover in the ROW of the 345 kV Route Options for Segments 1 and 2

Route Options	Route Option B (Applicant's Preferred Route for Segment 1 and 2)	Route Option A (Route Segment 1 North and Route Segment 2 North)	Route Option C (Highway 14 or Route Segment 17)
Forested landcover in the ROW (acres)	75	94	42

~~373.~~380. All three route options would impact forested vegetation, with Route Option A having the most forested vegetation in the ROW (94 acres) and Route Option C having the least amount of forested vegetation in the ROW (42 acres).[823] Because all three route options would follow existing transmission line and/or road ROW for most of their lengths, most of these forested areas have already been fragmented.[824] However, there are densely forested areas in the ROW of Route Option C in areas that do not follow an existing ROW; as such, these forested areas would become fragmented.[825]

~~374.~~381. The ROW for Segment 3 is already free of woody vegetation, but additional impacts to vegetation could occur as a result of construction activities and heavy equipment.[826]

~~375.~~382. Table 16 below summaries the number of acres ~~covered~~ of forested landcover in the four 161 kV route options for Segment 4.[827]

[821] Ex. ~~EERA-10~~PUC-31 at 520 (FEIS).
[822] Ex. ~~EERA-10~~PUC-31 at 520 (FEIS).
[823] Ex. ~~EERA-10~~PUC-31 at 523 (FEIS).
[824] Ex. ~~EERA-10~~PUC-31 at 523 (FEIS).
[825] Ex. ~~EERA-10~~PUC-31 at 523 (FEIS).
[826] Ex. ~~EERA-10~~PUC-31 at 636 (FEIS).
[827] Ex. ~~EERA-10~~PUC-31 at 796 (FEIS).

Table 16. Forested Landcover in the ROW of the 161 kV Route Options for Segment 4

Route Options	Route Option A (Segment 4 West Mod. And South-South)	Route Option B (Segment 4 West Mod. And then South-North)	Route Option C (Segment 4 West and then South-North)	Route Option D (CapX Co-Locate)
Forested landcover in the ROW (acres)	18	22	15	19

~~376.~~383. Route Option B has the most forested vegetation within the ROW (22 acres), and Route Option C has the least (15 acres). Given the proposed double-circuiting and/or paralleling of existing transmission line or road rights-of-way, fragmentation of forested areas has mostly already occurred where the rights-of-way intersect forested vegetation.[828]

6. Fauna

~~377.~~384. 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] Typical wildlife species inhabiting the route width include mammals such as deer, fox, squirrels, raccoons, and beavers; birds, such as turkeys, hawks, pheasants, and ducks; reptiles and amphibians, such as toads, salamanders, frogs, turtles, and snakes; and fish, such as large-mouth bass, bluegills, and brown bullheads.[830]

~~378.~~385. Construction activities that generate noise, dust, or disturbance of habitat could result in short-term, indirect impacts on wildlife.[831] Larger or more mobile animals, such as deer, foxes, and various bird~~s~~ species will be able to vacate the immediate area of construction and should return upon completion of construction.[832] Smaller species such as reptiles, amphibians, and small mammals could be more affected by construction because of their inability to vacate the construction area.[833] Nocturnal ~~animals~~ species and aquatic species~~specific will~~ populations are unlikely to be permanently impacted by construction and should return to preconstruction conditions

[828] Ex. ~~EERA-10~~PUC-31 at 796 (FEIS).
[829] Ex. Xcel-15 at 289 (Application).
[830] Ex. Xcel-15 at 290-291 (Application).
[831] Ex. Xcel-15 at 290-291 (Application).
[832] Ex. Xcel-15 at 291 (Application).
[833] Ex. Xcel-15 at 291 (Application).

following completion of the Project.[834] The construction, operation, and maintenance of the Project will be designed to minimize potential adverse impacts to wildlife resources.[835]

~~379.~~386. Table 17 below summarizes the wildlife resources within the route width and ROW for the three end-to-end 345 kV route options for Segments 1 and 2.[836]

Table 17. Wildlife Resources in the 345 kV Route Options for Segments 1 and 2

Route Options	**Route Option B** **(Applicant's Preferred Route for Segment 1 and 2)**	**Route Option A** **(Route Segment 1 North and Route Segment 2 North)**	**Route Option C** **(Highway 14 or Route Segment 17)**
Wildlife Management Areas (acres in ROW, acres in route width)	10 79	10 79	0
Important Bird Areas (acres in ROW, acres in route width)	4 42	4 42	0
Grassland Bird Conservation Areas (acres in ROW, acres in route width)	443 2,958	509 3,400	67 446
State Game Refuge (acres in ROW, acres in route width)	17 127	17 127	64 428
Waterfowl Production area (acres in ROW, acres in route width)	0 <1	0 <1	0
Designated Shallow Wildlife Lakes (count in ROW, count in route width)	1	1	1

[834] Ex. Xcel-15 at 291 (Application).
[835] Ex. Xcel-15 at 291 (Application).
[836] Ex. ~~EERA-10~~PUC-31 at 520 (FEIS).

Aquatic Management Areas crossings (count in ROW, count in route width)	1 1	1 1	0
Wildlife Action Network Corridors (acres in ROW, acres in route width)	123 841	181 1,219	92 754

~~380.~~387. The route width and ROW of all three route options would intersect wildlife resources.[837] Route Options A and B would generally intersect more acres of wildlife resources but would mostly do so while double-circuiting existing transmission lines.[838] While the ROW may need to be expanded to accommodate the double-circuiting, these areas have already been fragmented. Route Option C would mostly follow U.S. Highway 14 and as such, would also mostly intersect wildlife resources in areas that have already been fragmented.[839] There is one location where the anticipated alignment of Route Option C would cross a densely forested Wildlife Action Network corridor in an area where there is not an existing transmission line or road ROW; as a result, this corridor would be fragmented.[840] In addition, the majority of Route Option C would not follow an existing transmission line corridor, this could result in more avian impacts relative to Route Options A and B, which follow existing transmission line corridors for most of their length.[841]

~~381.~~388. Segment 3 would intersect with a National Wildlife Refuge, an Important Bird Area, a Wildlife Management Area, and Wildlife Action Network corridors.[842] Segment 3 would double-circuit with an existing transmission line for its entire length and the proposed double-circuiting would require an additional horizontal plane to the transmission line, which could increase potential impacts to avian species.[843]

~~382.~~389. Table 18 below summarizes the wildlife resources within the route width and ROW for the four end-to-end 161 kV route options for Segment 4.[844]

[837] Ex. ~~EERA-10~~PUC-31 at 523 (FEIS).
[838] Ex. ~~EERA-10~~PUC-31 at 523 (FEIS).
[839] Ex. ~~EERA-10~~PUC-31 at 523 (FEIS).
[840] Ex. ~~EERA-10~~PUC-31 at 523 (FEIS).
[841] Ex. ~~EERA-10~~PUC-31 at 523 (FEIS).
[842] Ex. ~~EERA-10~~PUC-31 at 636 (FEIS).
[843] Ex. ~~EERA-10~~PUC-31 at 636 (FEIS).
[844] Ex. ~~EERA-10~~PUC-31 at 796 (FEIS).

Table 18. Wildlife Resources in the 161 kV Route Options for Segment 4

Route Options	Route Option A (Segment 4 West Mod. And South-South)	Route Option B (Segment 4 West Mod. And then South-North)	Route Option C (Segment 4 West and then South-North)	Route Option D (CapX Co-Locate)
Grassland Bird Conservation Areas (acres in ROW, acres in route width)	33 328	33 328	0 0	0 0
Wildlife Action Network Corridors (acres in ROW, acres in route width)	25 255	25 255	9 109	23 269

~~383.~~390. The ROW of Route Options A and B intersect a Grassland Bird Conservation Area (GBCA), while the rights-of-way of Route Options C and D avoid the GBCA.[845] However, impacts would be minimized because Route Options A and B would cross the GBCA in an existing transmission line corridor while double-circuiting a 161 kV line.[846] The ROW of all four route options would intersect several Wildlife Action Network corridors.[847] All route options would cross Wildlife Action Network corridors in an existing transmission line or road ROW; as such, these corridors are already fragmented.[848]

F. Effects on Rare and Unique Natural Resources

~~384.~~391. Minnesota Rule 7850.4100(F) requires consideration of the Project's effects on rare and unique resources.

~~385.~~392. Rare and unique natural resources include federally and state-protected species and sensitive ecological resources.[849] The EIS evaluated potential impacts of the protected specifics by reviewing documented occurrences within one mile of the Project area.[850] The EIS also evaluated potential impacts to sensitive

[845] Ex. ~~EERA-10~~PUC-31 at 799 (FEIS).
[846] Ex. ~~EERA-10~~PUC-31 at 799 (FEIS).
[847] Ex. ~~EERA-10~~PUC-31 at 799 (FEIS).
[848] Ex. ~~EERA-10~~PUC-31 at 799 (FEIS).
[849] Ex. ~~EERA-10~~PUC-31 at 189 (FEIS).
[850] Ex. ~~EERA-10~~PUC-31 at 189 (FEIS).

ecological resources, which could provide suitable habitat for protected species, by assessing the presence of these resources within the route width.[851]

~~386.~~393. The MnDNR established several categories for sensitive ecological resources across the state, many of which are scattered throughout the Project.[852] The MnDNR also designates Scientific and Natural Areas to protect natural features with exceptional scientific of educational value including native plant communicates, populations of rare species, and geological features.[853]

~~387.~~394. Table 19 below summarizes the rare and unique natural resources in the three 345 kV route options for Segments 1 and 2.[854]

Table 19. Rare and Unique Natural Resources in the 345 kV Route Options for Segments 1 and 2

Route Options	Route Option B (Applicant's Preferred Route for Segment 1 and 2)	Route Option A (Route Segment 1 North and Route Segment 2 North)	Route Option C (Highway 14 or Route Segment 17)
State Threatened or Endangered Species (documented records in NHIS database; count in ROW, count in route width)	6 12	6 12	7 10
Scientific and Natural Areas (acres in ROW, acres in route width)	2 28	2 28	0
Sites of Biodiversity Significance (acres in ROW, acres in route width)	41 363	47 388	21 357
Native Plant Communities (acres in ROW, acres in route width)	23 191	27 212	7 177

[851] Ex. ~~EERA-10~~PUC-31 at 189 (FEIS).
[852] Ex. ~~EERA-10~~PUC-31 at 195 (FEIS).
[853] Ex. ~~EERA-10~~PUC-31 at 195 (FEIS).
[854] Ex. ~~EERA-10~~PUC-31 at 521 (FEIS).

Designated Old Growth (acres in ROW, acres in route width)	<1 6	<1 6	0
Railroad rights-of-way prairie crossings (count)	1	1	3
Lakes of Biological Significant (count in ROW, count in route width)	1 3	1 3	1 1

~~388.~~395. All three route options have a similar number of NHIS records within the ROW and route width.[855] Route Options A and B would intersect the Townsend Woods Scientific and Natural Area, in an area where it could be double-circuited; Route Option C would avoid this resource.[856]

~~389.~~396. The ROW of Route Options A and B intersect more acres of SBS and native plant communities than Route Option C.[857] Route Option C intersects more railroad rights-of-way prairie than Route Options A and B. Route Options A and B would generally intersect sensitive ecological resources in areas that could be double-circuited with an existing transmission line.[858] For the most part, Route Option C would traverse these sensitive ecological resources while paralleling U.S. Highway 14 or an existing transmission line or railroad ROW.[859] However, in a few situations, the Route Option C anticipated alignment would cross a sensitive ecological resource while establishing a new corridor, such as through the Kaplan Woods SBS (ranked outstanding) and associated southern floodplain forest.[860]

~~390.~~397. The ROW of Segment 3 will intersect with a National Wildlife Refuge, an Important Bird Area, a Wildlife Management Area, and Wildlife Action Network corridors.[861] Segment 3 will be double-circuited for its entire length, as these wildlife resources have already been fragmented, and the additional horizontal plane to the transmission line could increase impacts to avian species.[862]

[855] Ex. ~~EERA-10~~PUC-31 at 524 (FEIS).
[856] Ex. ~~EERA-10~~PUC-31 at 524 (FEIS).
[857] Ex. ~~EERA-10~~PUC-31 at 524 (FEIS).
[858] Ex. ~~EERA-10~~PUC-31 at 524 (FEIS).
[859] Ex. ~~EERA-10~~PUC-31 at 524 (FEIS).
[860] Ex. ~~EERA-10~~PUC-31 at 524 (FEIS).
[861] Ex. ~~EERA-10~~PUC-31 at 636 (FEIS).
[862] Ex. ~~EERA-10~~PUC-31 at 636 (FEIS).

~~391.~~398. Table 20 below summarizes the rare and unique natural resources in the four 161 kV route options for Segment 4.[863]

Table 20. Rare and Unique Natural Resources in the 161 kV Route Options for Segment 4

Route Options	Route Option A (Segment 4 West Mod. And South-South)	Route Option B (Segment 4 West Mod. And then South-North)	Route Option C (Segment 4 West and then South-North)	Route Option D (CapX Co-Locate)
State Threatened or Endangered Species (documented records in NHIS database; count in ROW, count in route width)	4 7	4 7	3 4	1 1
Sites of Biodiversity Significance (acres in ROW, acres in route width)	1 39	1 39	<1 30	9 110
Native Plant Communities (acres in ROW, acres in route width)	1 33	1 33	0 8	3 28

~~392.~~399. Route Options C and D have fewer NHIS records within the ROW and route width than Route Options A and B.[864]

~~393.~~400. Blanding's turtle, Blanchard's cricket frog, glade mallow, and a mussel species have been documented within the ROW of Route Options A and B.[865] Tuberous Indian-plantain has been documented within the ROW of Route Options C and D; two mussel species have also been documented within the ROW of Route Option C.[866] All four route options could impact terrestrial protected species should

[863] Ex. ~~EERA-10~~PUC-31 at 796 (FEIS).
[864] Ex. ~~EERA-10~~PUC-31 at 800 (FEIS).
[865] Ex. ~~EERA-10~~PUC-31 at 800 (FEIS).
[866] Ex. ~~EERA-10~~PUC-31 at 800 (FEIS).

they be present in the ROW during construction.[867] Watercourses would be spanned by all Route Options; as such impacts to protected mussel species are not anticipated. [868]

~~394.~~401. The ROW of Route Option D would intersect with 9 acres of sites of biodiversity significance and 3 acres of native plant communities, the most among the four route options.[869]

G. Application of Various Design Considerations

~~395.~~402. Minnesota Rule 7850.4100(G) requires consideration of whether the applied design options maximize energy efficiencies, mitigate adverse environmental effects, and could accommodate expansion of transmission or generating capacity.

~~396.~~403. The Project is designed to maximize the use of existing ROWs to the extent practicable as demonstrated in sections VIII(H) and (I) below.[870]

~~397.~~404. The Project is also designed to meet current and projected future needs of the local and regional transmission network.[871]

~~398.~~405. To accommodate future expansion, the Project was designed to route the new 345 kV transmission line near the West Faribault Substation.[872] This will allow for the potential for a 345 kV connection into the West Faribault Substation in the future as needed to support greater renewable generation in this area.[873] By routing the new 345 kV transmission line in close proximity to the existing lower voltage transmission system near Faribault, there is the ability to make this connection to the backbone transmission system in the future while also minimizing additional impacts to the surrounding area.[874]

[867] Ex. ~~EERA-10~~PUC-31 at 800 (FEIS).
[868] Ex. ~~EERA-10~~PUC-31 at 800 (FEIS).
[869] Ex. ~~EERA-10~~PUC-31 at 800 (FEIS).
[870] Ex. Xcel-15 at 157 (Application).
[871] Ex. Xcel-15 at 26 (Application).
[872] Ex. Xcel-15 at 26 (Application).
[873] Ex. Xcel-15 at 26 (Application).
[874] Ex. Xcel-15 at 26 (Application).

H. Use or Paralleling of Existing Right-of-Way, Survey Lines, Natural Division Lines, and Agricultural Field Boundaries

~~399.~~406. Minnesota's HVTL routing factors require consideration of the Project's use of or paralleling of existing rights-of-way, survey lines, natural division lines, and agricultural field boundaries.[875]

~~400.~~407. Table 21 summarizes the paralleling of transmission lines, roads and railroads, existing survey lines, natural division lines, and agricultural field boundaries for the three end-to-end 345 kV route options for Segments 1 and 2.[876]

Table 21. Use or Parallelling with Existing Rights-of-Way for the 345 kV Route Options for Segments 1 and 2

Route Options	Route Option B (Applicant's Preferred Route for Segment 1 and 2)	Route Option A (Route Segments 1 North and 2 North)	Route Option C (Highway 14 or Route Segment 17)
Transmission line (miles, percent)	41.5 (55%)	68.9 (83%)	21.2 (22%)
Roads (miles, percent)	12.9 (17%)	32.2 (38%)	67.3 (71%)
Railroad (miles, percent)	2.9 (4%)	2.9 (4%)	8.2 (9%)
Pipeline (miles, percent)	0	0	0
Total ROW sharing or paralleling with existing infrastructure (transmission line, road, railroad, and pipeline) (miles, percent)	48.8 (64%)	75.1 (90%)	81.5 (86%)
Total ROW paralleling with division lines (parcel, section, and field lines) (miles, percent)	59.5 (78%)	68.4 (82%)	81.4 (86%)
Total ROW sharing or paralleling (all)	69.3 (91%)	80.3 (96%)	89.1 (94%)

[875] Minn. Stat. § 216E.03, subd. 7(b)(8) and (9); Minn. R. 7850.4100, subp. H.
[876] Ex. ~~EERA-10~~PUC-31 at 519 (FEIS).

~~401.~~408. Cumulatively, Route Option A parallels existing infrastructure (transmission lines, roads, or railroads) for 90 percent of its length. Route Option B parallels existing infrastructure (transmission lines, roads, or railroads) for 64 percent of its length. [877] Route Option C parallels existing infrastructure (transmission lines, roads, or railroads) for 86 percent of its length.[878]

~~402.~~409. Segment 3 would parallel existing transmission lines, roads, or railroads for 100 percent of its length.[879]

~~403.~~410. Table 22 summarizes the paralleling of transmission lines, roads and railroads, existing survey lines, natural division lines, and agricultural field boundaries for the four 161 kV route options for Segment 4.[880]

[877] Ex. ~~EERA-10~~PUC-31 at 524 (FEIS).
[878] Ex. ~~EERA-10~~PUC-31 at 524 (FEIS).
[879] Ex. ~~EERA-10~~PUC-31 at 637 (FEIS).
[880] Ex. ~~EERA-10~~PUC-31 at 795 (FEIS).

Table 22. Use or Parallelling with Existing Rights-of-Way for the 161 kV Route Options for Segment 4

Route Options	Route Option A (Segment 4 West Mod. And South-South)	Route Option B (Segment 4 West Mod. And then South-North)	Route Option C (Segment 4 West and then South-North)	Route Option D (CapX Co-Locate)
Transmission line (miles, percent)	16.4 (74%)	13.8 (61%)	4.0 (20%)	13.7 (84%)
Roads (miles, percent)	9.5 (43%)	7.4 (33%)	12.2 (61%)	<0.1 (0%)
Railroad (miles, percent)	0	0	0	0
Pipeline (miles, percent)	0	0	0	0
Total ROW sharing or paralleling with existing infrastructure (transmission line, road, railroad, and pipeline) (miles, percent)	18.2 (82%)	16.1 (71%)	13.9 (70%)	13.7 (84%)
Total ROW paralleling with division lines (parcel, section, and field lines) (miles, percent)	19.3 (87%)	20.0 (89%)	18.9 (95%)	7.8 (48%)
Total ROW sharing or paralleling (all)	21.2 (96%)	21.8 (97%)	19.2 (96%)	14.7 (90%)
Total length following no infrastructure or division lines (miles, percent)	1.0 (4%)	0.7 (3%)	0.8 (4%)	1.7 (10%)

~~404.~~411. Cumulatively, Route Option A parallels existing infrastructure (transmission lines, roads, or railroads) for 82 percent of its length.[881] Route Option B parallels existing infrastructure (transmission lines, roads, or railroads) for 71 percent of its length.[882] Route Option C parallels existing infrastructure (transmission lines, roads,

[881] Ex. ~~EERA-10~~PUC-31 at 800 (FEIS).
[882] Ex. ~~EERA-10~~PUC-31 at 800 (FEIS).

or railroads) for 70 percent of its length.[883] Route Option D parallels existing infrastructure (transmission lines, roads, or railroads) for 84 percent of its length.[884]

I. Use of Existing Transportation, Pipeline, and Electrical Transmission System Rights-of-Way

~~405.~~412. Minnesota HVTL routing factors require consideration of the Project's use of paralleling of existing transportation, pipeline, and electrical transmission system rights-of-way.[885]

~~406.~~413. Table 23 below summarizes the opportunities for double-circuiting with existing transmission lines for the three 345 kV route options for Segments 1 and 2.[886]

Table 23. Opportunities for Double-Circuiting the 345 kV Route Options for Segments 1 and 2

Route Options	Route Option B (Applicant's Preferred Route for Segment 1 and 2)	Route Option A (Route Segment 1 North and Route Segment 2 North)	Route Option C (Highway 14 or Route Segment 17)
Double-circuit with existing 69 kV line (miles, percent)	5.5 (7%)	26.7 (32%)	0
Double-circuit with existing 115 kV line (miles, percent)	33.5 (44%)	35.0 (42%)	4.0 (4%)
Double-circuit with existing 161 kV line (miles, percent)	<0.1	<0.1	<0.1
Double-circuit with existing 345 kV line (miles, percent)	0 (0%)	0 (0%)	13.9 (15%)
Total opportunity for double-circuiting (miles, percent)	39.0 (51%)	61.7 (74%)	17.9 (19%)

[883] Ex. ~~EERA-10~~PUC-31 at 800 (FEIS).
[884] Ex. ~~EERA-10~~PUC-31 at 800 (FEIS).
[885] Minn. R. 7850.4100(J).
[886] Ex. ~~EERA-10~~PUC-31 at 519 (FEIS).

~~407.~~414. Route Option A provides the greatest opportunity for double-circuiting, and Route Option B has the second greatest opportunity for double-circuiting.[887]

~~408.~~415. Segment 3 would be double circuited within existing 345 kV transmission line for 43.4 miles, which is 100 percent of its length.[888]

~~409.~~416. Table 24 below summarizes the opportunities for double-circuiting with existing transmission lines for the four 161 kV end-to-end route options.[889]

Table 24. Opportunities for Double-Circuiting for the 161 kV Route Options

Route Options	**Route Option A** (Segment 4 West Mod. And South-South)	**Route Option B** (Segment 4 West Mod. And then South-North)	**Route Option C** (Segment 4 West and then South-North)	**Route Option D** (CapX Co-Locate)
Double-circuit with existing 69 kV line (miles, percent)	5.1 (23%)	2.5 (11%)	2.5 (13%)	0
Double-circuit with existing 161 kV line (miles, percent)	11.3 (51%)	11.3 (50%)	0	0
Total opportunity for double-circuiting (miles, percent)	16.4 (74%)	13.8 (61%)	2.5 (13%)	0

~~410.~~417. Route Option A offers the greatest opportunity for double-circuiting, followed by Route Option B and C.[890] Route Option D has zero miles of double-circuiting as it will be constructed adjacent to the existing 345/345 kV Hampton – La Crosse line.

[887] Ex. ~~EERA-10~~PUC-31 at 519 (FEIS).
[888] Ex. ~~EERA-10~~PUC-31 at 636 (FEIS).
[889] Ex. ~~EERA-10~~PUC-31 at 795 (FEIS).
[890] Ex. ~~EERA-10~~PUC-31 at 795 (FEIS).

J. Electrical System Reliability

~~411.~~418. Minnesota's HVTL routing factors require consideration of the Project's impact on electrical system reliability.[891]

~~412.~~419. The North American Electric Corporation has established mandatory reliability standards for American utilities.[892] For new transmission lines, these standards require the utility to evaluate whether the grid would continue to operate adequately under various contingencies.[893]

~~413.~~420. The purpose of the Project is to construct a transmission line that will provide additional transmission capacity to reduce congestion and improve electric system reliability throughout the region as more renewable resources are added to the transmission system.[894] The Project would increase transfer capability across the MISO Midwest subregion to allow reliability to be maintained for all hours under varying dispatch patterns driven by differences in weather conditions.[895]

K. Costs of Constructing, Operating, and Maintaining the Facility

~~414.~~421. Minnesota's HVTL routing factors require consideration of the Project's cost of construction, operation, and maintenance.[896]

~~415.~~422. Xcel Energy provided the total estimated cost to construct the Project based the specific costs for each route alternative included in the EIS.[897] There are several main components of the cost estimate, including (1) transmission line structures and materials; (2) transmission line construction and restoration; transmission line and substation permitting design; transmission line ROW acquisition; and (5) substation materials, substation land acquisition, and construction. Each of these components also may include a risk reserve.[898] Below is a table of total estimated construction costs for the Project.[899]

[891] Minn. R. 7850.4100(K).
[892] Ex. Xcel-15 at 91 (Application).
[893] Ex. Xcel-15 at 91 (Application).
[894] Ex. ERRA-10 at 1 (FEIS).
[895] Ex. ERRA-10 at 227 (FEIS).
[896] Minn. R. 7850.4100(L).
[897] Ex. ~~ERRA-10~~PUC-31 at 71 (FEIS).
[898] Ex. ~~ERRA-10~~PUC-31 at 71 (FEIS).
[899] Ex. Xcel-35 at 2-3 (T. Wendland Surrebuttal).

Table 25. Total Estimated Construction Costs for the Project[900]

Project Components	Low Capital Expenditures ($Millions)	High Capital Expenditures ($Millions)
Mankato – Mississippi River 345 kV Transmission Line	$376.6	$490.7
Wilmarth Substation Modifications	$8.6	$9.1
North Rochester Substation	$10.5	$11.5
North Rochester to Chester 161 kV Transmission Line	$41.1	$69.7
Eastwood Substation Modifications	$0	$8.7
Total	$436.8	$589.7

~~416.~~423. Xcel Energy also provided a comparison of the estimated costs of Route Option B to Route Option C for Segments 1 and 2.[901] The estimated cost for Route Option B~~A~~ is $341.9 million as compared to $397.1 million for Route Option C.[902]

~~417.~~424. Xcel Energy also provided a comparison of the estimated costs of Route Option A to Route Option D for Segment 4.[903] The estimated cost for Route Option A is $69.7 million as compared to $41.1 million for Route Option C.[904]

~~418.~~425. These costs include all transmission line and substation modification costs, including materials, associated construction, permitting and design costs, and risk reserves.[905] The aerial inspections cost approximately $75 to $100 per mile and the ground inspections cost approximately $200 to $400 per mile.[906] 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.[907]

[900] Ex. Xcel-35 at 2-3 (T. Wendland Surrebuttal).
[901] Ex. Xcel-35 at 4 (T. Wendland Surrebuttal).
[902] Ex. Xcel-35 at 4 (T. Wendland Surrebuttal).
[903] Ex. Xcel-30 at 8 (T. Wendland Direct).
[904] Ex. Xcel-30 at 8 (T. Wendland Direct).
[905] Ex. Xcel-30 at 3 (T. Wendland Direct).
[906] Ex. Xcel-15 at 348 (Application).
[907] Ex. Xcel-15 at 348 (Application).

L. Adverse Human and Natural Environmental Effects Which Cannot be Avoided

~~419.~~426. Minnesota Rule 7850.4100(M) requires consideration of unavoidable human and environmental impacts.

~~420.~~427. Resource impacts are unavoidable when an impact cannot be avoided even with mitigation strategies.[908]

~~421.~~428. Transmission lines are infrastructure projects that have unavoidable adverse human and environmental impacts.[909] 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; 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; greenhouse gas emissions.[910]

~~422.~~429. Unavoidable adverse impacts associated with the operation of the proposed project include visual impact of structures and conductors; loss of land for other purpose, such as agriculture, where structures are placed; injury or death of avian species that collide with, or are electrocuted by, conductors; interference with AM radio signals; potential decrease to property values; continued maintenance of tall-growing vegetation; greenhouse gas emissions; increased electromagnetic fields on the landscape, however, potential impacts from electromagnetic fields are minimal and are not expected to impact human health.[911]

~~423.~~430. These potential impacts and the possible ways to mitigate against them were discussed in the Application and the EIS.[912] However, even with mitigation strategies, certain impacts cannot be avoided.[913]

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[908] Ex. ~~EERA-10~~PUC-31 at 804 (FEIS).
[909] Ex. ~~EERA-10~~PUC-31 at 804 (FEIS).
[910] Ex. ~~EERA-10~~PUC-31 at 804 (FEIS).
[911] Ex. ~~EERA-10~~PUC-31 at 804 (FEIS).
[912] Ex. ~~EERA-10~~PUC-31 at 804 (FEIS); Ex. 15 at 320-322 (Application).
[913] Ex. ~~EERA-10~~PUC-31 at 804 (FEIS).

M. Irreversible and Irretrievable Commitments of Resources

~~424.~~431. Minnesota's HVTL routing factors require consideration of the irreversible and irretrievable commitments of resources that are necessary for the Project.[914]

~~425.~~432. 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.[915]

~~426.~~433. Irreversible impacts include the land required to construct the transmission line.[916] Certain land uses within the right-of-way will no longer be able to occur, especially at the substation.[917] While it is possible that the structures, conductors, and substations, could be removed and the right-of-way restored to previous conditions, this is unlikely in the reasonably foreseeable future (approximately 50 years).[918] The loss of forested wetlands is considered irreversible, because replacing these wetlands would take a significant amount of time.[919]

~~427.~~434. Irretrievable impacts are primarily related to Project construction, including the use of water, aggregate, hydrocarbons, steel, concrete, wood, and other consumable resources.[920] The commitment of labor and fiscal resources is also considered irretrievable.[921]

N. Summary Comparison of Route Alternatives

1. 345 kV Route Options

~~428.~~435. The EIS provided a comparison of Route Options A, B, and C for Segments 1 and 2 based on routing criteria.[922] The table below summarizes a comparison of certain routing criteria.[923]

[914] Minn. Stat. § 216E.03, subd. 7(b)(11); Minn. R. 7850.4100(N).
[915] Ex. ~~EERA-10~~PUC-31 at 805 (FEIS).
[916] Ex. ~~EERA-10~~PUC-31 at 805 (FEIS).
[917] Ex. ~~EERA-10~~PUC-31 at 805 (FEIS).
[918] Ex. ~~EERA-10~~PUC-31 at 805 (FEIS).
[919] Ex. ~~EERA-10~~PUC-31 at 805 (FEIS).
[920] Ex. ~~EERA-10~~PUC-31 at 805 (FEIS).
[921] Ex. ~~EERA-10~~PUC-31 at 805 (FEIS).
[922] Ex. ~~EERA-10~~PUC-31 at 519-521 (FEIS).
[923] Ex. ~~EERA-10~~PUC-31 at 519-521 (FEIS).

Table 26. Summary Comparison of 345 kV Route Options for Segments 1 and 2

Route Options	Route Option B (Applicant's Preferred Route for Segment 1 and 2)	Route Option A (Route Segment 1 North and Route Segment 2 North)	Route Option C (Highway 14 or Route Segment 17)
Length (miles)	76.0	83.3	95.2
Total opportunity for double-circuiting (miles, percent)	39.0 (51%)	61.7 (74%)	17.9 (19%)
Total ROW sharing or paralleling (miles, percent)	69.3 (91%)	80.3 (96%)	89.1 (94%)
Total Residences within 1,600 feet	218	334	254
Total Non-Residential Structures within 1,600 feet	546	842	769
Agricultural land (acres in ROW)	1,061	1,024	1,208
Prime Farmland (acres in ROW)	907	967	1,436
Total Archaeology and Historic Architecture within route width (count in route width)	16	35	100
Total Wetlands (acres in ROW)	135	141	129
Estimated Construction Costs	$341.9 Million[924]	Not estimated[925]	$397.1 Million[926]

~~429.~~436. Xcel Energy noted in its Post-Hearing Brief that it also supported Route Option B because it more easily enables future expansion of the transmission system. Route Option B allows for the potential for a future 345 kV connection into the West Faribault Substation to support greater renewable generation in this area while

[924] Ex. Xcel-35 at 4 (T. Wendland Surrebuttal).
[925] Xcel Energy did not estimate that cost to construct Route Option A but because Route Option is longer than Route Option B it is expected that it would be more costly to construct than Route Option B. Ex. ~~EERA-10~~PUC-31 at 524 (FEIS).
[926] Ex. Xcel-35 at 4 (T. Wendland Surrebuttal).

minimizing future impacts.[927] Route Option B is located approximately 0.13 miles or 690 feet from the West Faribault Substation while Route Option C is located 15 miles to the south. If Route Option C is selected, a new 15-mile 345 kV transmission line would be required for any future connection of this Project to the West Faribault Substation.[928]

~~430.~~437. Xcel Energy also stated in its Post-Hearing Brief that Route Option C also has the potential to make the routing of future transmission projects more difficult. In order to connect to the North Rochester Substation, Route Option C requires a new approximately 13-mile long 345 kV line from where this alternative leaves Highway 14 near Byron to the North Rochester Substation.[929] There is already an existing 345 kV line in this corridor, the Pleasant Valley – North Rochester 345 kV line.[930] In December 2024, MISO approved its Tranche 2.1 portfolio of projects. One of the projects that was approved was the Pleasant Valley – North Rochester – Hampton 345 kV project which involves rebuilding the existing Pleasant Valley – North Rochester 345 kV line as a double-circuit 345/345 line.[931] The Tranche 2.1 portfolio of projects also includes a new 765 kV transmission line from Pleasant Valley to North Rochester.[932] These two new projects are planned for the same corridor as Route Option C and selection of Route Option C will limit the routing opportunities for these two future projects making their routing more challenging.[933] In comparison, Route Option B avoids this congested corridor because it enters the North Rochester Substation from the northwest.[934]

~~431.~~438. Based on the information presented in the Application and EIS, Route Option B 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, agricultural impacts, archeological and historic resource impacts, natural resource impacts, and cost). Route Segment 18 and Alignment Alternative 2 should be included in Route Option B as these options minimize tree clearing (Route Segment 18) and avoid a development that is under construction (Alignment Alternative 2).[935]

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[927] *See* Ex. Xcel-15 at 26 (Application) ("By routing the new 345 kV transmission line as close as possible to the existing lower voltage transmission system near Faribault, there is the ability to make this connection to the backbone transmission system in the future while also minimizing additional impacts to the surrounding area.")
[928] Ex. Xcel-29 at 14 (E. Heine Direct Testimony and Schedules).
[929] Ex. Xcel-29 at 14 (E. Heine Direct Testimony and Schedules).
[930] Ex. Xcel-29 at 14 (E. Heine Direct Testimony and Schedules).
[931] Ex. Xcel-29 at 14 (E. Heine Direct Testimony and Schedules).
[932] Ex. Xcel-29 at 15 (E. Heine Direct Testimony and Schedules).
[933] Ex. Xcel-29 at 15 (E. Heine Direct Testimony and Schedules).
[934] *See* Ex. EERA-8 at Map 47 (FEIS).
[935] Ex. ~~EERA-10~~PUC-31 at 233-235 (FEIS).

2. 161 kV Route Options

~~432.~~439. The EIS provided a comparison of the Route Option A, B, C, and D based on certain routing criteria.[936] The table below summarizes a comparison of certain routing criteria.[937]

[936] Ex. ~~EERA-10~~PUC-31 at 795-796 (FEIS).
[937] Ex. ~~EERA-10~~PUC-31 at 795-796 (FEIS).

Table 27. Summary Comparison of 161 kV Route Options for Segment 4

Route Options	Route Option A (Segment 4 West Mod. And South-South)	Route Option B (Segment 4 West Mod. And then South-North)	Route Option C (Segment 4 West and then South-North)	Route Option D (CapX Co-Locate)
Length (miles)	22.1	22.5	20.0	16.4
Total opportunity for double-circuiting (miles, percent)	16.4 (74%)	13.8 (61%)	2.5 (13%)	0
Total ROW sharing or paralleling (miles, percent)	18.2 (82%)	16.1 (71%)	13.9 (70%)	13.7 (84%)
Total Residences within 1,600 feet	196	172	234	40
Total Non-Residential Structures within 1,600 feet	269	235	322	92
Agricultural land (acres in ROW)	153	170	119	159
Prime Farmland (acres in ROW)	190	193	154	108
Total Archaeology and Historic Architecture within route width (count in route width)	18	10	35	6
Total Wetlands (acres in ROW)	12	11	8	4
Estimated Construction Costs	$69.7 Million	Not estimated[938]	Not estimated[939]	$41.1 Million

[938] Xcel Energy did not prepare a cost estimate for this Route Option.
[939] Xcel Energy did not prepare a cost estimate for this Route Option.

~~433.~~440. Based on the information presented in the Application and EIS, Route Options A and D are 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 and natural resource impacts).

IX. SPECIAL ROUTE PERMIT CONDITIONS

~~434.~~441. Special conditions on the Route Permit were proposed by the MnDNR in its two comment letters.[940] The record supports inclusion of the conditions discussed below.

~~435.~~442. Calcareous Fen: Should any calcareous fens be identified within the Project area, the Applicant must work with the MnDNR to determine if any impacts will occur during any phase of the Project.[941] If the Project is anticipated to impact any calcareous fens, the Applicant must develop a Calcareous Fen Management Plan in coordination with the MnDNR, as specified in Minn. Stat. § 103G.223.[942] Should a Calcareous Fen Management Plan be required, the approved plan must be submitted currently with the plan and profile.[943]

~~436.~~443. Avian Flight Diverters: The Applicant in cooperation with the MnDNR shall identify areas of the transmission line where bird flight diverters will be incorporated into the transmission line design to prevent large avian collisions attributed to visibility issues.[944] Standard transmission design shall incorporate adequate spacing of conductors and grounding devices in accordance with Avian Power Line Interaction Committee standards to eliminate the risk of electrocution to raptors with larger wingspans that may simultaneously come in contact with a conductor and grounding devices.[945] The Applicant shall submit documentation of its avian protection coordination with the plan and profile.[946]

~~437.~~444. Vegetation Management Plan: The Applicant shall coordinate with the Vegetation Management Plan Working Group to develop a Vegetation Management Plan for the Project.[947]

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[940] Comments at 2 (Minnesota Department of Natural Resources) (June 10, 2025) (eDocket No. 20256-219807-01).
[941] Comments at 2 (Minnesota Department of Natural Resources) (June 10, 2025) (eDocket No. 20256-219807-01).
[942] Comments at 2 (Minnesota Department of Natural Resources) (June 10, 2025) (eDocket No. 20256-219807-01).
[943] Comments at 2 (Minnesota Department of Natural Resources) (June 10, 2025) (eDocket No. 20256-219807-01).
[944] Comments at 3 (Minnesota Department of Natural Resources) (June 10, 2025) (eDocket No. 20256-219807-01).
[945] Comments at 3 (Minnesota Department of Natural Resources) (June 10, 2025) (eDocket No. 20256-219807-01).
[946] Comments at 3 (Minnesota Department of Natural Resources) (June 10, 2025) (eDocket No. 20256-219807-01).
[947] Comments at 3 (Minnesota Department of Natural Resources) (June 10, 2025) (eDocket No. 20256-219807-01).

~~438.~~445. Wildlife Friendly Erosion Control: The Applicant shall only use "bio-netting" or "natural netting" types of erosion control materials and mulch products without synthetic (plastic) fiber additives.[948]

~~439.~~446. Dust Control: To protect plants and wildlife from chloride products that do not break down in the environment, the Applicant is prohibited from using dust control products containing calcium chloride or magnesium chloride during construction and operation of the Project.[949]

~~440.~~447. Facility Lighting: The Applicant shall utilize downlit and shielded lighting and minimize blue hue to reduce harm to birds, insects, and other animals.[950]

X. CONSIDERATION OF ISSUES PRESENTED BY STATE AGENCIES AND LOCAL UNITS OF GOVERNMENT

~~441.~~448. 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.

XI. NOTICE

~~442.~~449. 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 after the filing of an application for a Route Permit.[951]

~~443.~~450. The Applicant provided notice to the public and to local governments in satisfaction of Minnesota statutory and rule requirements.[952]

~~444.~~451. Minnesota statutes and rules also require the EERA and the Commission to provide certain notice to the public throughout the Route Permit

[948] Comments at 3 (Minnesota Department of Natural Resources) (June 10, 2025) (eDocket No. 20256-219807-01).
[949] Comments at 4 (Minnesota Department of Natural Resources) (June 10, 2025) (eDocket No. 20256-219807-01).
[950] Comments at 4 (Minnesota Department of Natural Resources) (June 10, 2025) (eDocket No. 20256-219807-01).
[951] Minn. Stat. § 216E.03, subd. 3(a) and 4; Minn. R. 7850.2100, subps. 2 and 4.
[952] Ex. Xcel-15 at 323 and Appendix M (Application); Ex. Xcel-21 (Notice of Filing of Route Permit Application Compliance Filing).

process.[953] The EERA and the Commission provided the notice in satisfaction of Minnesota statutes and rules.[954]

XII. ADEQUACY OF THE EIS

~~445.~~452. The Commission is required to determine the adequacy of the EIS.[955]

~~446.~~453. 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.[956]

~~447.~~454. The EIS provides responses to the comments received during the draft environmental impact statement review process.[957]

~~448.~~455. The EIS was prepared in compliance with the procedures in Minnesota Rules.[958]

Based on the foregoing Findings of Fact and the record in this proceeding, the ALJ makes the following:

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 ALJ have jurisdiction to consider the Applicant's Application.

3. The Commission determined that the Application was substantially complete and accepted the Application on June 26, 2024.

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[953] Minn. Stat. § 216E.03, subd. 6; Minn. R. 7850.2300, subp. 2; Minn. R. 7850.2500, subps. 2, 7, 8, and 9.
[954] Ex. PUC-7 (Notice of Comment Period on Application Completeness); Ex. PUC- 13 (Public Information and Environmental Impact Statement Scoping Meetings); Ex. PUC-14 (EQB Monitor); Ex. PUC-26 (Notice of Informational Meetings, Public and Evidentiary Hearings, and Availability of Draft Environmental Impact Statement); and Ex. EERA-7 (Notice of Environmental Statement Scoping Decisions); Ex. Xcel-39 (Affidavits of Publication); Notice of Availability of Final Environmental Impact Statement and Comment Period (July 25, 2025) (eDocket No.20257-221385-01).
[955] Minn. R. 7850.2500, subp. 10.
[956] Ex. EERA-8 at 22 (DEIS).
[957] Ex. ~~EERA-10~~PUC-31 at Appendix A (FEIS).
[958] Minn. R. 7850.1000 - 7850.5600.

4. EERA and EIP haves conducted an appropriate environmental analysis for the Project for purposes of these proceeding and the FEIS satisfied applicable law, including Minn. Stat. § 216E.03, subd. 5 and Minn. R. 7850.2500.

5. The Applicant gave notice as required by Minn. Stat. § 216E.03, subd. 3(a) and 4 and Minn. R. 7850.2100, subps. 2 and 4.

6. The Commission and/or the EERA gave notice as required by Minn. Stat. § 216E.03, subd. 6, Minn. R. 7850.2300, subp. 2, and Minn. R. 7850.2500, subps. 2 and 7-9.

7. Public hearings were conducted in communities along the proposed routes. The Applicant, EERA, and the Commission gave proper notice of the public hearings, as required by Minn. Stat. § 216E.03, subd. 6, and the public was given the opportunity to appear at the hearing or submit written comments.

8. All procedural requirements for processing the Route Permit have been met.

9. The record demonstrates that the Route Option B, incorporating Route Segment 18 and Alignment Alternative 2 (for Segments 1 and 2), Segment 3, and Route Options A and D (for Segment 4) satisfies the Route Permit criteria set forth in Minn. Stat. § 216E.03, subd. 7(a) and 7(b) and Minn. R. 7850.4100.

10. The record evidence demonstrates that Route Option B, incorporating Route Segment 18 and Alignment Alternative 2 (for Segments 1 and 2), Segment 3, and either Route Option A or D (for Segment 4) are the best routes for the Project.

11. The record evidence demonstrates that constructing the Project along Route Option B, incorporating Route Segment 18 and Alignment Alternative 2 (for Segments 1 and 2), Segment 3, and Route Options A or and D (for Segment 4) 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.

12. 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.

13. The Applicant's requested route widths are reasonable and appropriate for the Project.

14. The Applicant's right-of-way request for a 150-foot-wide right-of-way for the 345 kV portion of the Project and a 100-foot right-of-way for the 161 kV portion of the Project is reasonable and appropriate.

15. The evidence in the record demonstrates that the general Route Permit conditions are appropriate for the Project, as modified in Section IX herein.

Based on these Findings and Fact and Conclusions of Law, the ALJ makes the following:

RECOMMENDATION

Based upon these Findings of Fact and Conclusions of Law, the ALJ recommends that the Commission issue a Route Permit for the Route Option B, incorporating Route Segment 18 and Alignment Alternative 2 (for Segments 1 and 2), Segment 3, either Route Option A or D (for Segment 4), and associated facilities to Xcel Energy to construct and operate the Project in Blue Earth, Goodhue, Le Sueur, Olmsted, Rice, and Wabasha counties in Minnesota.

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: _____

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Ann O'Reilly
Administrative Law Judge