OAH Docket No. 11-2500-22932-2
PUC No. E002/TL-11-795

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS

FOR THE PUBLIC UTILITIES COMMISSION

In the Matter of the Route Permit Application for the Black Dog to Savage 115 kV Transmission Line Project in Dakota County, Minnesota	**FINDINGS OF FACT, CONCLUSIONS AND RECOMMENDATION**

This matter was assigned to Administrative Law Judge Barbara L. Neilson to conduct a public hearing and prepare Findings of Fact, Conclusions and Recommendation on the application by Northern States Power Company, doing business as Xcel Energy, for a route permit for the Black Dog to Savage 115 kV Transmission Line Project in Dakota County.

A public hearing was held on September 11, 2012, in Burnsville, Minnesota. The record remained open until September 28, 2012, for the receipt of public comments on the Project. Post-hearing submissions were filed by the Company and by the Department of Commerce on October 19, 2012, and November 2, 2012. The OAH record closed on November 16, 2012, upon receipt of the Company's submission of a "No-Rise" Certification and supporting materials executed by Thomas E. MacDonald, Professional Engineer.[1]

Lisa M. Agrimonti, Attorney at Law, Briggs and Morgan, P.A., appeared on behalf of the Applicant, Northern States Power Company doing business as Xcel Energy (Company or Xcel Energy). Tim Rogers, Supervisor of Siting and Permitting; Chris Rogers, Land Rights Agent; and Chris Ayika, Project Manager, also participated in the hearing on behalf of the Company.

Raymond Kirsch, State Permit Manager, appeared on behalf of the Energy Facility Permitting (EFP) Unit of the Department of Commerce.

Michael Kaluzniak, Staff Member, Minnesota Public Utilities Commission (PUC or Commission), appeared on behalf of the Commission staff.

Terry Schultz, Director of Parks, Recreation, and Natural Resources for the City of Burnsville, also participated in the hearing.

[1] These materials have been marked and received into the hearing record as Exhibit 21.

STATEMENT OF ISSUE

Has Applicant Xcel Energy satisfied the criteria set forth in Minnesota Statutes Section 216E.03 and Minnesota Rules Chapter 7850 for a Route Permit for the Black Dog to Savage 115 kV Transmission Line Project in Burnsville, Minnesota?

Based on information contained in the Route Permit Application submitted to the Commission, the testimony at the public hearing, and the written comments and exhibits received in this proceeding, the Administrative Law Judge makes the following:

FINDINGS OF FACT

PROCEDURAL SUMMARY

1. Xcel Energy is a Minnesota corporation headquartered in Minneapolis, Minnesota. Xcel Energy is a wholly owned subsidiary of Xcel Energy Inc., a utility holding company with its headquarters in Minneapolis. Xcel Energy owns and operates a number of electric generation facilities including coal, oil, natural gas, hydropower, refuse derived fuel, and nuclear power plants. Xcel Energy serves approximately 1.3 million electric customers in Minnesota.[2]

2. On August 1, 2011, Xcel Energy submitted a Notification to the Commission of its intent to file an application for a route permit under the alternative permitting process to replace approximately 3.8 miles of existing parallel 115 kV single circuit transmission lines with approximately 4.6 miles of 115/115 kV double circuit transmission lines between the Xcel Energy Black Dog Power Plant and the Savage Substation in the City of Burnsville (the Project).[3]

3. On February 14, 2012, Xcel Energy submitted a Route Permit Application (Application) for the Project to the PUC.[4] On February 17, 2012, Xcel Energy mailed a notice to interested parties regarding its filing of the Application.[5] On February 23, 2012, the notice was published in the Burnsville Lakeville Sun Current and, on February 24, 2012, the notice was published in Burnsville/Eagan ThisWeek.[6]

4. On March 13, 2012, Xcel Energy filed an Affidavit of Publication as required under Minn. Stat. §§ 216E.03, subd. 4, and 216E.04, subd. 4; and Minn. R. 7850.2100, subp. 4.[7]

5. On March 13, 2012, EFP staff filed comments and recommendations regarding the completeness of the Application.[8]

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[2] Exhibit (Ex.) 2 at 2-1 (Application).
[3] Ex. 1 (Notice of Intent to File Application). The Alternative Permitting Process is set forth in Minn. R. 7850.2800 through 7850.3900.
[4] Ex. 2 at 1-1.
[5] Ex. 3 (Notice and Affidavit of Mailing).
[6] Ex. 4 (Affidavit of Publication).
[7] Affidavit of Publication filed March 13, 2012 (eDocket Document No. 20123-72554-01).

6. On March 23, 2012, the Commission accepted the Application as complete and authorized EFP staff to process the Application under the Alternative Permitting Process set forth in Minnesota Rules Chapter 7850. The Commission also authorized EFP staff to name a public advisor, and determined that an advisory task force was not necessary.[9]

7. On March 28, 2012, EFP issued a Notice of Public Information and Environmental Assessment (EA) Scoping Meeting.[10] The meeting notice was published in the Burnsville/Eagan Sun ThisWeek on April 6, 2012.[11]

8. On March 30, 2012, Xcel Energy filed an Affidavit of Mailing as required under Minnesota Statutes §§ 216E.03, subd. 4, and 216E.04, subd. 4, and Minn. R. 7850.2100, subp. 2.[12]

9. On April 18, 2012, EFP held a Public Information and EA Scoping Meeting.[13]

10. On May 15, 2012, EFP issued the EA Scoping Decision that set forth the alternatives and issues to be addressed in the EA.[14]

11. On August 15, 2012, EFP issued the EA.[15]

12. On August 16, 2012, EFP issued its Notice of Public Hearing and Availability of EA, and advised that Administrative Law Judge Barbara L. Neilson of the Office of Administrative Hearings (OAH) would preside at the hearing.[16] Notice of the hearing was published in the Burnsville/Eagan Sun ThisWeek on August 17, 2012,[17] and the EQB Monitor on September 3, 2012.[18]

13. On September 10, 2012, Xcel Energy filed Direct Testimony by Timothy Rogers.[19]

14. On September 11, 2012, a Public Hearing was held at Burnsville City Hall Council Chambers, 100 Civic Center Parkway, Burnsville, Minnesota 55337.

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[8] Comments and Recommendations of EFP Staff filed March 13, 2012 (eDocket Document No. 20123-72553-01).
[9] Ex. 5 at 6 (Order Accepting Application as Complete).
[10] Ex. 6 (EFP Notice of EA Scoping Meeting).
[11] Ex. 7 (Affidavit of Publication).
[12] Affidavit of Mailing filed March 30, 2012 (eDocket Document ID 20123-73166-01).
[13] Ex. 6 (EFP Notice of EA Scoping Meeting); Ex. 8 (Transcript of Public Information and Scoping Meeting).
[14] Ex. 10 at 3–5 (EA Scoping Decision).
[15] Ex. 13 (EA) filed Aug. 15, 2012 (eDocket Document No. 20128-77883-01).
[16] Ex. 14 (EFP Notice of Public Hearing).
[17] Ex. 16 (Affidavit of Publication).
[18] Ex. 18 (EQB Monitor).
[19] Ex. 19 (Rogers Direct).

DESCRIPTION OF THE BLACK DOG PROJECT

15. The Project is proposed to move two existing 115 kV transmission lines from the center of Black Dog Lake, located in the City of Burnsville, to the northwestern edge of the lake, to consolidate the transmission lines on single poles for the majority of their length, and to relocate the transmission lines out of a limestone quarry planned for future development. The west and east ends of the Project Area are separated by Interstate 35 West (I-35W). The western portion of the Project Area is dominated by Kraemer Mining and Materials' limestone quarry operation (the Quarry). The eastern portion of the Project Area is dominated by the Black Dog Generating Plant (the Plant), which is located on land that is owned by Xcel Energy. (Collectively, the foregoing describes the Project Area.)[20]

16. Specifically, the Project is comprised of: (1) construction of two 115 kV transmission lines approximately 4.2 miles long on double-circuit structures on new right-of-way; (2) construction of approximately 0.4 miles of single circuit 115 kV transmission line facilities to connect Transmission Line 0844 (750 feet) and Transmission Line 0861 (1,225 feet) to Black Dog Substation; and (3) removal of approximately 3.8 miles of two parallel existing 115 kV transmission lines (0844 and 0861) and structures; and (4) reconductoring of one of the existing 115 kV lines (Line 0844) between structure 36 and the Savage Substation.[21]

17. The proposed route and anticipated alignment can be described as follows: Two new 115 kV single circuit transmission lines would leave the Black Dog substation and proceed westward approximately 0.4 miles, where these lines would join on a double circuit structure.[22] The line would then proceed, as a double circuit, westward along the northern edge of Black Dog Lake and along I-35W to a crossing of I-35W (approximately 2.4 miles).[23] The anticipated alignment of this section is at least five feet south of the Black Dog Road right-of-way (including right-of-way reserved for a bike trail planned by the City of Burnsville) and north of Black Dog Lake.[24] The anticipated alignment at the crossing of I-35W is the alignment used by the existing 115 kV single circuit transmission lines.[25] After crossing I-35W, the line would proceed westward along 118th Street and the northern edge of the Quarry for approximately 1.2 miles.[26] The anticipated alignment for this section is at least 30 feet south of the City of Burnsville's planned roadway surface.[27] At the intersection of 118th Street and Golf Drive, the line would turn southward and follow Golf Drive for approximately 0.6 miles to

[20] Ex. 2 at 1-1.
[21] *Id*.; Ex. 13 at 9-12.
[22] Ex. 13, Appendix B, Map B-2.
[23] *Id*., Maps B-2 to B-6.
[24] *Id*., Map B-10.
[25] *Id*., Map B-6.
[26] *Id*., Maps B-6 to B-7.
[27] *Id*., Map B-11.

its termination at structure 31A.[28] The anticipated alignment for this section is at least 48 feet east of the City of Burnsville's planned roadway surface.[29]

18. The Project structures are proposed to be 50 to 100 feet tall, depending on final design, with spans of 500 to 800 feet wide. The right-of-way is proposed to be 100 feet wide.[30]

19. The Project is needed in part to replace aging lines. Transmission Line 0844 and Transmission Line 0861 are more than 50 years old and have wooden poles. Both lines need to be rebuilt due to their deteriorating condition as a result of woodpecker damage and rotten pilings.[31]

20. In addition, a rebuild of Transmission Line 0844 is required to meet North American Electric Reliability Corporation (NERC) mandatory reliability standards. Transmission Line 0844 overloads when the circuit breaker at Xcel Energy's Wilson Substation has an internal fault. The proposed Project will rebuild both lines to a higher capacity, thereby preventing overloading on Transmission Line 0844 in the event of a Wilson Substation breaker fault.[32]

FUTURE CITY PLANS IN AND NEAR PROJECT AREA

21. The Project Area is within the Gateway Overlay District of the City of Burnsville as adopted in the City's Comprehensive Land Use Plan, which has been approved by the Metropolitan Council. The City's Comprehensive Plan contemplates that the Quarry will close, the area will be flooded, and a 350-acre recreational lake will be created west of I-35W in the area where the Quarry currently operates. The City's Plan includes the potential construction of an 18-hole golf course just west of the Project Area (where a sanitary landfill currently exists), a larger riverfront park just north of the Project Area (between the new Quarry Lake and the Minnesota River), and a smaller

[28] *Id*., Maps B-7 to B-8.
[29] In EFP's Initial Post-Hearing Comments in this matter, EFP noted that there is a technical error in Map B-12 attached to the EA, which shows a setback distance of 30 feet, and stated that it had intended to incorporate a 48-foot setback distance along Golf Drive into its EA. EFP indicated that the City of Burnsville's requested alignment of the poles along Golf Drive is reasonable and appropriate, and mitigates potential impacts to Golf Drive and its planned features. EFP's Initial Post-Hearing Comments at 3, 24 (Oct. 19, 2012) (eDocket Document No. 201210-79732-01). In its Proposed Findings of Fact, Xcel Energy agreed that there was an error in Map B-12 attached to the EA. Xcel asserted that the proposed alignment for the structures along this portion of Golf Drive is a minimum of 50 feet from the east of the western edge of the Kraemer Mining property and a minimum of 48 feet from the edge of the proposed expansion of Golf Drive. However, Xcel Energy also "requests the flexibility to modify this proposed alignment based on information gathered during the detailed design phase." Xcel Energy's Proposed Finding of Fact No. 161 (Oct. 19, 2012) (eDocket Document No. 201210-79754-03) at 34.
[30] Ex. 2 at 1-3.
[31] *Id*. at 3-1.
[32] *Id*. at 3-1.

city park with a beach and boat launch (in the northwest corner of the Project Area). Residential and commercial uses are also planned to be developed in the area.[33]

22. Dakota County and the City of Burnsville are also partners in a planned regional greenway trail in the Project Area. The trail is part of Dakota County's Minnesota River Greenway Regional Trail, which is a component of the regional parks system overseen by the Metropolitan Council. The foot/bike trail is proposed to run along the golf course eastward to the smaller city park on Quarry Lake, and continue eastward along the Minnesota River to the larger riverfront park and then connect, under 1-35W, with Black Dog Road. From this point, visitors could continue on to Cliff Fen Park (via an existing trail) or along Black Dog Road (via a proposed future trail). A future foot/bike trail along Black Dog Road could use the existing roadway or could be placed adjacent to the roadway. Future foot/bike trails may also be placed along 118th Street and Golf Drive to facilitate non-motorized access to Quarry Lake and city parks. In the portion of the Project Area west of I-35W, the planned foot/bike is anticipated to run south of Black Dog Road and north of the Proposed Route.[34]

ROUTES EVALUATED

23. In this Alternative Permitting Process, Xcel Energy evaluated routes that would reduce impacts to Black Dog Lake. As noted above, the City's future plans contemplate that Kraemer Mining and Materials will close the Quarry, Xcel Energy will remove the transmission facilities, and the area will be flooded to create a lake. Consequently, rebuilding on the existing alignment is not a reasonable alternative because the new lines would need to be moved when the City floods the Quarry.[35]

24. In the Application and during this proceeding, Xcel Energy has stated that its preferred route is the "Proposed Route," which begins at Black Dog Substation located approximately 2.0 miles east of I-35W and approximately 1.1 miles north of State Highway 13, and ends near the Savage Substation located approximately 1.3 miles west of I-35W along 126th Street West (also known as Golf Drive).[36]

25. Although not required in an Alternative Routing Process,[37] Xcel Energy also evaluated in the Application an "Alternative Route Segment" proposed by Dakota County.[38] The Alternative Route Segment follows the existing corridor for Xcel Energy's Transmission Lines 0832 and 5539 across Black Dog Lake and then turns to the southwest following Transmission Lines 0976, 0989, and 5539.[39] The segment then

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[33] *Id*. at 6-12 and Figure B-9; Ex. 13 at 50-51 and Map B-13; City of Burnsville Comments on Scoping at 1-2 and 4 (May 4, 2012) (eDocket Document No. 20125-74535-02) .
[34] Ex. 2 at 6-12 and Figure 8 (see 5-7); Ex. 13 at 50-51 and Maps B-10 through B-13; Dakota County Comments (Sept. 27, 2012) (eDocket Document No. (eDocket Document No. 201210-79147-01); Metropolitan Council Comments (Sept. 27, 2012) (eDocket Document No. 201210-79362-01).
[35] Ex. 2 at 1-4.
[36] *Id*. at 2-1, Figures B-1 and B-6, and 4-1, 4-2, and Table 5; see also Ex. 13 at 10 fn. 16 (126th Street is referred to as Golf Drive in the EA).
[37] Minn. R. 7850.3100 (2011).
[38] Ex. 2 at 4-5.
[39] *Id*. at 4-5 and Figures B-11 and B-12.

deviates to the west as a greenfield route until realigning with the Proposed Route at I-35W.[40] Based on its analysis, Xcel Energy rejected the Alternative Route Segment as inferior to the Proposed Route because of its potential impact on high value natural resources, relatively higher costs, reliability concerns, and constructability concerns.[41]

26. No other routes or route segment alternatives were put forth during this proceeding and the EA only evaluated the Proposed Route.[42]

TRANSMISSION LINE STRUCTURE TYPES, SPANS, AND UNDERGROUND CONSTRUCTION

27. For the Project, Xcel Energy proposes to use overhead construction with single-pole, galvanized steel or weathering-steel structures.[43] Xcel Energy proposes to use davit arm, delta, or Y-frame structures.[44]

28. Average spans between structures will be between 500 to 800 feet.[45]

29. Architectural transmission line structures were also considered for this Project. Architectural transmission line structures are non-standard structures, which may be used to mitigate potential aesthetic impacts of a transmission line. One type of architectural transmission line involves the use of specialized davit arms. Davit arms are those extensions from the transmission line pole, which support the conductor and hold them at safe distance from the pole. Davit arms come in a wide variety of shapes that can be utilized to minimize aesthetic impacts by selecting arms which match a specific setting.[46]

30. The City of Burnsville has also suggested the use of an arch-shaped structure in lieu of the standard monopole structures for the crossing of I-35W and the portion of the route west of I-35W.[47] These arch-shaped structures are known as "N-structures."[48] N-structures would be 60 to 80 feet in height, with a span of 500 to 800 feet.[49] N-structures require two foundations for each structure.[50] These foundations are approximately 16 feet apart.[51]

31. The Company also analyzed underground construction of Transmission Lines 0844 and 0861 west of I-35W and concluded that it is not a reasonable design

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[40] Ex. 2 at 4-5.
[41] *Id*. at 4-5 to 4-7.
[42] Ex. 13 at 13.
[43] Ex. 2 at 4-1.
[44] *Id*. at 5-1.
[45] *Id*.
[46] Ex. 13 at 16.
[47] *Id*.
[48] *Id*.
[49] *Id*. at 16-17 and Figure 9.
[50] *Id*. at 23.
[51] *Id*.

alternative, due to increased environmental impacts to wetlands during construction and potential repair, cost, and reliability considerations.[52]

32. The Company and its Wisconsin affiliate, Northern States Power Company, a Wisconsin corporation, currently own and operate approximately 12 miles of underground transmission line throughout the five-state upper-Midwest region compared to 7,300 miles of high voltage overhead transmission lines.[53]

33. Underground design has generally been used where no viable overhead route was available, typically due to close proximity to an airport or to multi-level buildings at heights taller than the proposed overhead transmission structures where industry standards required underground construction.[54]

34. There are three standard types of underground construction for transmission lines: surface cut open trenching, horizontal boring, and horizontal directional drilling (HDD).[55]

35. Trenching would be the preferred method of underground transmission line construction as the construction progress is easily controlled, it is readily adaptable to most conditions found in the field, and it is the most cost effective method of underground construction.[56] This method, however, requires substantial mitigation efforts, including those necessary to shore up the trench for worker safety, to dewater the trench to keep it dry, and to backfill the trench after installation has been completed with selective materials that improve heat transfer.[57]

36. Horizontal boring and HDD are more expensive than trenching and are typically only used to pass cables, pipes, and conduits below existing barriers that are difficult to trench such as deep ravines, railroad crossings, major roads, and rivers.[58]

37. All underground construction requires installation of a duct system to protect the conduit and the installation of cable vaults with manhole access to facilitate cable installation and for inspection and repair.[59] Underground construction of the Project would require construction of two identical concrete duct banks, each containing four 6-inch polyvinyl chloride conduits for the transmission circuits and two 2-inch PVC conduits for ground continuity and communication needs.[60] Depending on the physical conditions of the route, the duct banks might be installed adjacent to each other in the same trench, about 4 feet apart, or in separate trenches.[61] A typical cable vault with

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[52] Ex. 2 at 4-7 through 4-10.
[53] *Id*. at 4-7.
[54] *Id*.
[55] *Id*.
[56] *Id*.
[57] *Id*.
[58] *Id*.
[59] *Id*.
[60] *Id*. at 4-8.
[61] *Id*.

manhole access is about 24-25 feet long by 14 feet wide by 7-10 feet deep.[62] A vault must be installed every 1,500 feet or wherever there is a major change in the direction of the route, whichever occurs first.[63]

38. Underground construction would require excavation of a roughly 1.8 mile long by 17 feet wide by 6 feet deep trench, to allow for two 2-feet wide duct systems, from the west crossing of I-35W, along 118th Street and Golf Drive to Structure 31A.[64] Bedrock west of I-35W is generally very near the surface, and consists primarily of limestone and dolomite.[65] Accordingly, underground construction west of I-35W would require blasting to remove bedrock, and construction would necessarily proceed at a slower pace.[66]

39. Cost is a consideration when comparing underground to overhead lines. Construction costs for a double circuit underground 115 kV transmission line constructed via trenching are about 5 to 10 times higher per mile than costs for an overhead 115 kV transmission line constructed on steel self-weathering or galvanized steel poles.[67] Horizontal boring or HDD underground construction costs increase from this baseline based on the amount of right-of-way available.[68]

40. There are also reliability considerations to evaluate when examining underground transmission lines. Underground transmission lines are generally subject to fewer outages than overhead transmission lines.[69] The repair time for outages of underground transmission lines, however, can take several weeks to repair whereas the typical repair time for outages of overhead transmission lines is 10-24 hours.[70]

41. Additionally, underground transmission lines cannot be visually surveyed; instead, identifying the cause of the outage requires accessing the duct and inspecting the conductors for damage.[71]

42. Finally, if both ducts are installed in the same trench, both lines would have to be taken out of service while the problem area is located.[72]

43. Based on the record, self-weathering, steel monopole structures are appropriate for the Proposed Project. Structures with specialized davit arms agreeable to the Company and the City are also appropriate for the west end of the Project.

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[62] *Id*.
[63] *Id*.
[64] Ex. 13 at 19.
[65] *Id*. at 19, 58.
[66] *Id*. at 19.
[67] Ex. 2 at 4-9.
[68] *Id*.
[69] *Id*. at 4-10.
[70] *Id*.
[71] *Id*.
[72] *Id*.

TRANSMISSION LINE CONDUCTORS

44. For the Project, Xcel Energy proposes to use 795 thousand circular mils (KCmil) 26/7 Aluminum Core Steel Supported (ACSS) cables or conductors of comparable capacity.[73]

TRANSMISSION LINE ROUTE WIDTHS AND ANTICIPATED ALIGNMENT

45. For the Project, Xcel Energy has requested a 400-foot route width to the west of I-35W and a 750-foot route width to the east of I-35W.[74] A wider route to the east of I-35W is requested to provide flexibility in siting due to a potential bike trail proposed by the City of Burnsville and a bald eagle nest located south of Black Dog Road.[75]

46. The anticipated alignment for the project is designed to accommodate features of the City of Burnsville's comprehensive plan. On the eastern end of the project, along the northern edge of Black Dog Lake, the anticipated alignment is at least five feet south of the Black Dog Road right-of-way, including right-of-way reserved for a bike trail planned by the City of Burnsville.[76] The anticipated alignment at the crossing of I-35W is the alignment used by the existing 115 kV single circuit transmission lines.[77] After crossing I-35W, the line would proceed westward along 118th Street and the northern edge of the Quarry for approximately 1.2 miles.[78] The anticipated alignment for this section is at least 30 feet south of the City of Burnsville's planned roadway surface.[79] At the intersection of 118th St. and Golf Drive, the line would turn southward and follow Golf Drive for approximately 0.6 miles to its termination at structure 31A.[80] The anticipated alignment for this section is at least 48 feet east of the City of Burnsville's planned roadway surface.[81]

TRANSMISSION LINE RIGHT-OF-WAY

47. The right-of-way required for the Proposed Project is 100 feet.[82] Where the Proposed Route parallels other existing infrastructure rights-of-way (e.g., roads, railroads, other utilities, etc.), the easement required from the adjacent landowner may be of lesser width because a portion of the transmission right-of-way can overlap with public right-of-way.[83]

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[73] *Id*. at 3-1.
[74] *Id*. at 4-3.
[75] *Id*.
[76] Ex. 13, Appendix B, Map B-10.
[77] *Id.,* Map B-6.
[78] *Id.,* Maps B-6 and B-7.
[79] *Id.,* Map B-11.
[80] *Id.,* Maps B-7 and B-8.
[81] As noted in Footnote 29 above, both Xcel Energy and EFP have agreed that there is an error in Map B-12 attached to the EA, which shows a setback distance of only 30 feet.
[82] Ex. 2 at 4-3 and 5-5.
[83] *Id.* at 5-5.

48. For the crossing of I-35W, the alignment is proposed to follow the existing crossing area and poles will be placed in conformance with utility permitting requirements of the Minnesota Department of Transportation (MnDOT).[84]

PROJECT SCHEDULE

49. At the time it filed the Application, Xcel Energy anticipated that it would begin construction of the Project in the fourth quarter of 2012 and complete the Project by the second quarter of 2013, subject to revision based on changes in planning assumptions and further information.[85]

PROJECT COSTS

50. Xcel Energy estimates that the removal of the old transmission lines and the installation of the Project will cost approximately $8.69 million, plus or minus 30 percent. Therefore, the total Project cost could be between approximately $6.08 million and $11.30 million.[86]

PERMITTEE

51. The permittee for the Project is Northern States Power Company, a Minnesota corporation.[87]

PUBLIC AND LOCAL GOVERNMENT PARTICIPATION

Public Comments

52. Mr. Larry Schedin, a consultant, spoke at the EFP public meeting on April 18, 2012, and asked if the Project would be built all the way into the Savage Substation. When told that it would not, he asked whether the existing structures between Structure 31A and the Savage Substation would be able to handle the upgraded capacity. An Xcel Energy representative responded that he assumed they would be capable of doing so.[88]

53. Mr. Michael McGowan submitted a written public comment form noting that he had not agreed to any "conveyance, easement, or rights to Xcel [Energy] for this proposed transmission line project."[89]

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[84] *Id.*.
[85] *Id.* at 3-2. As discussed in the Memorandum, Xcel Energy noted in its post-hearing filings that it now anticipates that it will begin construction on the Project in the second quarter of 2013 and complete the Project by the fourth quarter of 2013.
[86] Ex. 2 at 3-2.
[87] *Id.* at 2-1.
[88] Ex. 8 (Transcript of April 18, 2012, EFP Public Meeting) at 5-6.
[89] Ex. 9 at 2 (Written Public Comments Received during Comment Period on the Scope of the EA).

Local Government and Community Organization Participation

City of Burnsville

54. Xcel Energy met with City of Burnsville officials on April 20, 2011, to discuss the Project.[90]

55. During the EFP public meeting on April 18, 2012, Terry Schultz, Director of Parks, Recreation, and Natural Resources for the City of Burnsville, asked if Xcel Energy was obligated to clear all vegetation from the entire width of the right-of-way.[91] Xcel Energy responded that it would clear vegetation that posed a reliability risk to the transmission line.[92]

56. Mr. Craig Ebeling, Burnsville City Manager, submitted written comments on behalf of the City of Burnsville on May 4, 2012.[93] Mr. Ebeling acknowledged in his comments that the Project was "clearly needed" to provide the residents of the City of Burnsville and the State of Minnesota "a reliable source of electricity well into the future."[94] Although he stated that the City of Burnsville "understands the challenges of putting the transmission lines underground in the project area east of 35W due to soil conditions and the prevalence of wetlands," he asserted that aesthetic impacts are "a very important consideration west of I-35W, as it is immediately adjacent to the City's future quarry lake and anticipated recreational, residential, and commercial uses."[95] He expressed concern that overhead transmission lines west of I-35-W "could negatively impact future development" and said that it is the City's preference that the transmission lines be buried in that area, in lieu of structures 20-31A.[96] If underground construction is not feasible, Mr. Ebeling requested that aesthetics be strongly considered when determining the spacing and type of transmission structures to be used, urged consideration of specialized architectural structures, and stated that the City prefers the use of weathered steel poles.[97]

57. Mr. Ebeling expressed particular concern about how the Project will maintain compliance with shoreland and floodplain ordinances. He indicated that, under the City's shoreland ordinance, intensive vegetative clearing is not allowed within shore impact zones (75 feet from the river and 25 feet from Black Dog Lake), asked that Xcel Energy provide more information regarding the extent of vegetative alterations, including a tree inventory indicating what trees are proposed to be removed and what is proposed to be preserved; and noted that Xcel may need a variance to the ordinance for its clearing operations and/or for the height of the structures. Mr. Ebeling also stated that a grading permit would be required under the shoreland requirements. Among

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[90] Ex. 2 at 7-2 (Application).
[91] Ex. 8 at 3.
[92] *Id.* at 4.
[93] Ex. 9 at 3-9.
[94] *Id.* at 3.
[95] *Id.* at 3-4 (emphasis in original).
[96] *Id.* at 4.
[97] *Id.* at 3, 4, 6.

other things, Mr. Ebeling also requested that the width of the right-of-way for the transmission structures be as narrow as feasible; asserted that conditional use permits, variances, and/or easements may be needed for certain portions of the Project; and asked that Xcel Energy cover the City's costs associated with review of the Project.[98]

58. Mr. Schultz (Burnsville's Director of Parks, Recreation, and Natural Resources) also spoke at the Public Hearing held on September 11, 2012, at the Burnsville City Hall. Mr. Schultz stated that "[t]he City of Burnsville believes this [P]roject is much needed and has great potential to provide positive outcomes for both the residents and businesses in Burnsville as well as utility users throughout the metro area."[99] He reiterated that the City of Burnsville was "interested in minimizing the aesthetic impacts of this [P]roject" and preferred the use of weathering steel structures if placing the lines underground was not financially feasible. He also requested that specialized architectural structures such as "N-structures" and specialized davit arm shapes be used.[100] Mr. Schultz again requested that Xcel Energy cover the City of Burnsville's costs for reviewing the route permit.[101] He also asked that the route permit specify that the City is to be involved in reviewing the construction drawings prior to their finalization and determining the final location of the structures.[102]

59. The City of Burnsville also submitted a letter on September 28, 2012, which outlined and reiterated several concerns regarding the Project. The City requested that the Route Permit issued by the Commission:

- require that the DNR or the City conduct a review of the Project for impacts and compliance with state shoreland and federal floodplain requirements as a condition of permitting;
- require the use of weathering steel structures and structure arms, special architectural structures, and specialized davit arm shapes if the PUC determines that placing the transmission lines underground in the Project area west of I-35W is not prudent;
- require the narrowest right-of-way feasible (50 feet) for the Project for aesthetic reasons and to minimize the impact of future road alignments on the west end of the project;
- specify that Xcel Energy must furnish the City with a copy of any easements for the project prior to construction;

[98] *Id.* at 4-8.
[99] Public Hearing Transcript (Sept. 11, 2012) at 17.
[100] *Id.* at 17, 18.
[101] *Id.* at 19.
[102] *Id.*

- require that the proposed structures west of I-35W must be at least 50 feet east of the Quarry's western property line on the proposed north-south road;

- require City involvement in determining final structure locations and how the various structure options will be utilized;

- require Xcel Energy to submit wetland delineation reports and plans to the City to make it clear whether the total wetland impacts will meet exemption requirements under the Minnesota Wetland Conservation Act and applicable rules; and

- require Xcel Energy to reimburse the City for review costs for the Route Permit.[103]

The City also requested in its September 28, 2012, comments that Xcel Energy clarify where the lines will be located in relation to property lines and existing/proposed rights of way and the location of the structures with respect to the future road proposed by the City; provide a map of potential areas where vegetation will be cleared; and provide a diagram of a davit arm structure with the distribution underbuild added. The City further noted that it disagreed with the statement in the EA that the longer-term impacts of the Project on future recreation and tourism will be "minimal to moderate" and stated that the impacts will be significant if the mitigation measures requested by the City are not implemented.[104]

Dakota County

60. Lynn Thompson, Director of the Physical Development Division, submitted a letter on behalf of Dakota County on September 27, 2012. The County noted that the new 100-foot right of way requested by Xcel Energy for the new transmission line places the line along Black Dog Road, next to a regional greenway trail that is being planned by Dakota County and the City of Burnsville. In addition, the County indicated that the County, City and MnDOT are discussing the possibility of removing the TH 13 and Cliff Road interchanges and constructing a new interchange at a location halfway between them, in the same area as the transmission line.[105]

61. Dakota County requested that:

- Xcel Energy consult with the County and City regarding placement of the power line poles to avoid conflicts with the greenway alignment;

[103] Comments of City of Burnsville (Sept. 28, 2012) (eDocket Document No. 201210-79147-01); *see also* Ex. 9 at 3-9.
[104] *Id*.
[105] Letter from Dakota County (Sept. 27, 2012) (eDocket Document No. 201210-79147-01).

- Xcel Energy consult with the County, City, and Minnesota Department of Transportation to minimize potential land use conflicts between the future 118th Street interchange and the Project's crossing of I-35W;

- Xcel Energy identify and investigate any old dump sites or fill sites along the power line route prior to beginning any construction or deconstruction activities that cause disturbance of land; and

- Xcel Energy manage any solid or hazardous waste or contaminated soil encountered during the construction in accordance with County ordinances and state and federal law.[106]

Minnesota Pollution Control Agency

62. Mr. Craig Affeldt, Supervisor of the Environmental Review Unit of the Minnesota Pollution Control Agency, submitted written comments regarding the proposed Project on February 24, 2012.[107]

63. Mr. Affeldt noted that Xcel Energy would have to obtain a National Pollutant Discharge Elimination System/State Disposal System Construction Stormwater permit if the total project will disturb one or more acres of land; a Clean Water Act permit may be necessary for Project-related wetland impacts and, if so, an MPCA Clean Water Act Section 401 Water Quality Certification or waiver would also be necessary to ensure compliance with state water quality standards; and that the old wood transmission poles that Xcel Energy removes may be considered hazardous waste and, if so, would be subject to proper disposal under Minn. Rules Chapter 7045.[108]

Minnesota Department of Transportation

64. On April 6, 2011, Xcel Energy sent a letter to MnDOT advising it of the Project and seeking input. At that time, the anticipated alignment was approximately 230 feet north of the existing crossing of I-35W. Xcel Energy sent another letter to MnDOT on September 12, 2011, advising that the proposed alignment for the double-circuit, single-pole design was at the existing crossing. MnDOT informed Xcel Energy that any parallel alignment would not be permitted to permanently encroach on the highway right-of-way.[109]

65. Ms. Stacy Kotch, Utility Transmission Route Coordinator for MnDOT, submitted written comments on Xcel Energy's Route Permit Application on May 4, 2012.

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[106] *Id*.
[107] Ex. 9 at 10-11.
[108] Ex. 9 at 10-11.
[109] Ex. 2 at 7-2.

Ms. Kotch indicated that MnDOT and stakeholders in the Burnsville area had begun to plan improvements and alterations to the area of I-35W between Highway 13 and the Minnesota River, including the possibility that the Black Dog Road and Cliff Road interchanges would be consolidated. She indicated that the location where the proposed transmission lines would cross I-35W could constrain the highway improvement options available and requested that Xcel Energy consult with MnDOT's Metro District planners to minimize that possibility. She asked that MnDOT be involved in planning and coordinating construction work that may affect MnDOT's right-of-way, including delivery or storage of structures, materials or equipment.[110]

Minnesota Department of Natural Resources

66. Xcel Energy submitted a formal review request to MnDNR on March 11, 2011, to determine whether rare plants, animals, natural communities, or other significant natural features were known to occur within the Project area.[111]

67. On May 25, 2011, Lisa Joyal, Natural Heritage Review Coordinator for MnDNR, replied on behalf of MnDNR. Ms. Joyal indicated that Blanding's turtles and peregrine falcons (both state-listed threatened species) existed in the Project area. She provided recommendations for avoiding and minimizing impacts to the Blanding's turtle and asked that MnDNR be notified if the falcons exhibit unusual behaviors or other signs of potential distress during construction. Ms. Joyal also indicated that the proposed lines would go through a Seepage Meadow/Carr native plant community in an area that the Minnesota County Biological Survey has identified as a Site of High Biodiversity Significance, and urged that disturbance to this ecologically significant area be minimized to the extent feasible. Finally, she stated that several calcareous fens (rare and distinctive peat-accumulating wetlands that are legally protected in Minnesota) have been documented within the Site. She advised that the fens be considered avoidance areas and acknowledged that it appeared that the Project as proposed would avoid the fens. Ms. Joyal stated that the MnDNR would have concerns regarding any activities that might affect groundwater flows or otherwise alter the hydrological conditions of the fens.[112]

68. Ms. Jamie Schrenzel, Principal Planner for MnDNR's Environmental Review Unit, submitted written comments regarding the Route Permit Application on May 4, 2012. Because 51% of the proposed route crosses wetlands or bodies of water, Ms. Schrenzel requested a more detailed discussion regarding potential impacts, avoidance, and mitigative measures. She suggested that natural resource impacts may be reduced if construction occurred during frozen conditions and outside of the avian nesting and migration seasons. Ms. Schrenzel also requested that Xcel Energy "practice selective vegetation removal based on safety, height and type of vegetation," and stated that vegetation maintenance should comply with the recommendations of the United States Fish and Wildlife Service. She urged that lines and old structures that will

[110] Ex. 9 at 12-14.
[111] Ex. 2 at 6-27, 7-2 and Appendix C.1.
[112] *Id.* at 6-27, 7-2 and Appendix C.2 (Application).

be retired due to the Project be removed soon after decommission and indicated that a DNR Work in Public Waters permit would be needed if the structures remained in place. She recommended that new poles be placed outside of open water areas to the extent possible. Finally, Ms. Schrenzel recommended that bird diverters be placed in areas outside of the proposed alignment "if it discovered during future planning or during construction, that trees are not located adjacent to the transmission line or of adequate height to divert avian flights."[113]

69. Ms. Schrenzel submitted additional written comments on behalf of MnDNR on September 28, 2012. In these comments, MnDNR indicated that it was unclear in the EA whether Xcel Energy had made a commitment to construct during the winter as a mitigation measure for natural resource impacts, and recommended that any work to be completed in Seepage Meadow/Carr plant communities occur only when the ground is frozen. Additionally, the MnDNR stated that the measures set forth in Appendix C of the EA regarding mitigation strategies for the Blanding's turtle would be appropriate and urged that Xcel Energy clarify the mitigation measures that it plans to use. MnDNR further stated that wildlife-friendly erosion control mesh is appropriate for construction areas near wetlands; Xcel Energy should coordinate its maintenance and restoration practices with the United States Fish and Wildlife Service; and the Route Permit should require that Xcel Energy develop and implement an invasive species management plan for the Project. MnDNR noted that the Project would likely require Xcel Energy to obtain a dewatering permit and a license to cross and work in public waters from the MnDNR. Finally, the MnDNR noted that the Project is located within the Minnesota River floodplain, discussed the manner in which floodplain and shoreland ordinances are administered in Minnesota, and encouraged project developers to coordinate with the City of Burnsville since the City regulates compliance with shoreland floodplain ordinances.[114]

Minnesota State Historic Preservation Office

70. Merjent, Inc., conducted a Phase 1a background research/literature review for the Project on behalf of Xcel Energy in December of 2010. On March 18, 2011, Merjent sent a consultation letter to the Minnesota State Historic Preservation Office (MnSHPO). In the letter, Merjent requested that the MnSHPO provide comments on the Project and agree with its finding that no archaeological or historic resources would be adversely affected by the Project.[115]

71. MnSHPO responded by letter dated April 20, 2011. The MnSHPO concluded that there are no properties in the Project area that are listed in the National or State Registers of Historic Places, and that no known or suspected archaeological properties would be affected by the Project.[116]

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[113] Ex. 9 at 15-16.
[114] MnDNR Comments (Sept. 28, 2012) (eDocket Document Nos. 20129-79074-01, 20129-79074-02, and 20129-79074-03.
[115] Ex. 2 at 6-15 through 6-16, 7-2, and Appendix E.
[116] *Id.* at 6-16, 7-2, and Appendix E.

Metropolitan Council

72. The Metropolitan Council provided comments on September 27, 2012. The Metropolitan Council noted in its letter that "the EA is complete and accurate with respect to regional concerns and raises no major issues of consistency with Council policies." It further commented that the rerouting of the transmission line "is not anticipated to impact future development of the regional trail and actually moves the line further from the trail corridor within the project area."[117]

CRITERIA FOR A ROUTE PERMIT

73. The Power Plant Siting Act (PPSA), Minnesota Statutes Chapter 216E, requires that route permit determinations "be guided by the state's goals to conserve resources, minimize environmental impacts, minimize human settlement and other land use conflicts, and ensure the state's electric energy security through efficient, cost-effective power supply and electric transmission infrastructure."[118]

74. Under the PPSA, the Commission and the Administrative Law Judge must be guided by the following responsibilities, procedures, and considerations:

> (1) evaluation of research and investigations relating to the effects on land, water and air resources of large electric power generating plants and high-voltage transmission lines and the effects of water and air discharges and electric and magnetic fields resulting from such facilities on public health and welfare, vegetation, animals, materials and aesthetic values, including baseline studies, predictive modeling, and evaluation of new or improved methods for minimizing adverse impacts of water and air discharges and other matters pertaining to the effects of power plants on the water and air environment;
>
> (2) environmental evaluation of sites and routes proposed for future development and expansion and their relationship to the land, water, air and human resources of the state;
>
> (3) evaluation of the effects of new electric power generation and transmission technologies and systems related to power plants designed to minimize adverse environmental effects;
>
> (4) evaluation of the potential for beneficial uses of waste energy from proposed large electric power generating plants;[119]

[117] Metropolitan Council Comments (Sept. 27, 2012) (eDocket Document No. 201210-79362-01).
[118] Minn. Stat. § 216E.03, subd. 7(a).
[119] Factor 4 is not applicable because Xcel Energy is not proposing to site a large electric generating plant.

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

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

(12) when appropriate, consideration of problems raised by other state and federal agencies and local entities.[120]

75. In addition, Minn. Stat. § 216E.03, subd. 7(e), provides that the Commission "must make specific findings that it has considered locating a route for a high-voltage transmission line on an existing high-voltage transmission 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."

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

A. effects on human settlement, including, but not limited to, displacement, noise, aesthetics, cultural values, recreation, and public services;

B. effects on public health and safety;

[120] Minn. Stat. § 216E.03, subd. 7(b).

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;[121]

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.[122]

77. There is sufficient evidence in the record for the Administrative Law Judge to assess the Proposed Route using the criteria and factors set out above.

APPLICATION OF STATUTORY AND RULE FACTORS TO THE PROPOSED ROUTE

78. The only route under consideration in this proceeding is the Applicant's Proposed Route.[123]

A. Effects on Human Settlement

79. The high voltage transmission line routing criteria set forth in applicable Minnesota statutes and rules require consideration of the proposed transmission line

[121] This factor is not applicable because it applies only to power plant siting.
[122] Minn. R. 7850.4100.
[123] Ex. 13 at 13.

route's effect on human settlement, including displacement of residences and business; noise created during construction and by operation of the Project; and impacts to aesthetics, cultural values, recreation, and public services.[124]

80. The land within the Project area is commercial, industrial, forested, and open lands, and includes existing road and utility corridors.[125]

Displacement

81. No residential properties are located within 1,000 feet of the centerline of the Proposed Route.[126] No residential or business displacement will occur as a result of the Project as proposed.[127]

Noise

82. The Minnesota Pollution Control Agency (MPCA) has established standards for the regulation of noise levels.[128] The lowest noise limits set by the MPCA are 60-65 A-weighted decibels (dBA) during the daytime and 50-55 dBA during the nighttime.[129]

83. Transmission lines produce noise under certain conditions. The level of noise depends on conductor conditions, voltage level, and weather conditions. Generally, activity related noise levels during the operation and maintenance of transmission lines are minimal and do not exceed the MPCA Noise Limits outside the right-of-way.[130]

84. The audible noise calculated for the proposed transmission line designs ranges from 12.3 dBA to 18.3 dBA. Thus, the audible noise levels for the Proposed Route are not predicted to exceed the MPCA noise limits.[131]

85. Intermittent noise will also be generated during the construction of the Project. The source will primarily be from diesel engine construction equipment. Potential noise impacts will be mitigated by proper muffling equipment and, if necessary, restricting construction activities.[132]

Aesthetics

86. Construction of the Project will occur adjacent to existing road rights-of-way and within an area already populated by transmission lines and structures. The

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[124] Minn. Stat. § 216E.03, subd. 7(b); Minn. R. 7850.4100(A).
[125] Ex. 2 at 6-2 to 6-3.
[126] *Id.* at 6-3.
[127] *Id.* at 6-3; Ex.13 at 32.
[128] Ex. 2 at 6-8; see Minn. R. Chapter 7030.
[129] Ex. 2 at 6-8; Minn. R. 7030.0040, subp. 2.
[130] Ex. 2 at 6-7; Ex. 13 at 31.
[131] Ex. 2 at 6-8; Ex. 13 at 31-32.
[132] Ex. 2 at 6-8.

aesthetic impacts of the Proposed Project in the current environmental setting are likely to be minimal or even positive, since the Project will consolidate existing lines, replace H-frame structures with single pole structures, and remove existing lines from Black Dog Lake, thereby making them less visible to residents and visitors. [133]

87. The aesthetic impacts of the Proposed Project in the future environmental setting envisioned by the City of Burnsville's comprehensive plan are more speculative and subjective. According to the EA, aesthetic impacts on the eastern end of the Project are expected to be minimal, while impacts on the western end are expected to be moderate.[134] As noted above, the City of Burnsville stated in its comments that it disagrees with the EA's statement that longer-term impacts of the Project on future recreation and tourism will be minimal to moderate, and believes that such impacts will be significant if the mitigation measures it has requested are not implemented.[135]

88. The proposed structures for the 115 kV double circuit transmission line will be similar to the other 115 kV transmission lines used on the Xcel Energy system and in the area. The structures will be between 50 to 100 feet tall and will have an average span between 500 to 800 feet.[136] According to the Application, the finish of the proposed poles will be weatherized or galvanized steel. The proposed steel poles will give the new transmission line a more modern appearance.[137]

89. Like the existing transmission lines in the area, the new rebuilt transmission lines may be visible to some area residents and users of the planned bike trail on or along Black Dog Road. The majority of the landscape in the area is commercial/industrial but is bordered by a wildlife and recreational area as well as residences. The visual effect of the transmission structures and lines will depend largely on the subjective perceptions of the observer (some may find them a visual disruption and others may find them to be a point of visual interest). The removal of the existing transmission lines that cross Black Dog Lake within the Minnesota River Valley will result in improved aesthetics.[138]

90. Mitigation strategies that are reasonable and appropriate to limit the aesthetic impacts include minimizing vegetation removal, adding plants to minimize the visual exposure of structures and foundations, choosing structure heights and finishes that better blend with the environment, and (as discussed further below) using specialized davit arms in the western end of the Proposed Route.

(1) Underground Construction

91. In its September 28, 2012 comments, the City of Burnsville requested that several mitigation measures be implemented to reduce the aesthetic impact of the

[133] Ex. 2 at 6-12; Ex. 13 at 29.
[134] Ex. 13 at 29.
[135] City of Burnsville Comments at 3 (Sept. 28, 2012) (eDocket Document No. 201210-79147-01).
[136] Ex. 2 at 6-12.
[137] *Id.* at 6-12.
[138] *Id.* at 6-12 through 6-13.

Project. One of the mitigation measures proposed by the City is to construct the proposed transmission lines underground west of I-35W.[139] Xcel Energy analyzed this design option and concluded that the potential aesthetic impacts of the Project do not warrant underground construction.[140]

92. Generally, underground design is used in rare circumstances where impacts on sensitive environmental resources can be minimized with underground construction or in constrained areas where overhead design cannot physically fit within the location available for the line.[141] Neither of these circumstances is present here.[142] In addition, although the aesthetic impacts of overhead construction are eliminated with an underground design, there are other aesthetic impacts that will result from this design.[143]

93. Construction of a duct and vault system to accommodate a double-circuit 115 kV line west of I-35W would require a trench of approximately 17 feet wide and 6 feet deep-from the crossing or I-35W, along 118th St. and Golf Drive, to Structure 31A (approximately 1.8 miles).[144] Vaults would require more extensive excavation, as finished vaults are approximately 25 feet long, 14 feet wide, and 10 feet deep.[145] Bedrock west of I-35W is generally very near the surface, and consists primarily of limestone and dolomite.[146] Xcel Energy anticipates that excavation for a duct and vault system west of I-35W would require blasting in some areas to remove bedrock, and that construction would necessarily proceed at relatively slow pace.[147]

94. The incremental costs associated with an underground design are also significant. As noted in the EA, underground design for just the west portion of the Project would more than double the Project costs from $8.14 million to $20.85 million.[148]

95. The reliability of an underground design is also a consideration. While underground lines are generally subject to fewer outages compared to overhead lines, the repair times for outages of underground lines is longer.[149] Overhead line outages are typically repaired in 10-24 hours after the outage event is reported.[150] An underground facility can take several weeks to repair.[151]

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[139] City of Burnsville Comments at 2 (Sept. 28, 2012) (eDocket Document No. 201210-79147-01).
[140] Ex. 19 at 3 (Rogers Direct).
[141] *Id.* at 3; Ex. 13 at 19.
[142] Ex. 19 at 3.
[143] Ex. 2 at 4-8.
[144] Ex. 13 at 19.
[145] *Id.*
[146] *Id.* at 19, 58.
[147] *Id.* at 19.
[148] *Id.* at 20; Ex. 19 at 3.
[149] Ex. 2 at 4-10.
[150] *Id.*.
[151] *Id.*

96. Based on the environmental impacts, higher costs, and reliability concerns, underground design is not a reasonable alternative for the Project.[152]

(2) Special Transmission Structures

97. If underground construction is not a prudent alternative, the City of Burnsville requested in its comments that special structure types be utilized for portions of the Project. In particular, the City requested that N-structures be utilized where the Proposed Route crosses I-35W and that specialized davit arms be utilized west of I-35W.[153]

98. Because the N-structure is a two-pole design, it requires a larger footprint than a single-pole design (approximately 30 feet compared to 10 feet). The larger footprint of N-structures would likely conflict with the proposed bike path. The N-structures would also pose more constructability challenges on steep embankments than the single-pole design. Use of N-structures would increase Project costs by $1.7 million.[154]

99. The use of specialized davit arm structures would not increase Project costs.[155]

100. If the Commission concludes that architectural structures should be used for the west end of the Project, Xcel Energy believes that specialized davit arm structures would be more appropriate than N-structures.[156]

101. The use of N-structures has not been demonstrated to be warranted in light of the significantly higher financial costs, larger footprint, and construction challenges associated with such structures. However, the use of specialized davit arms after consultation with the City of Burnsville is an appropriate mitigation strategy for the Project.

102. In the Route Permit Application, Xcel Energy indicated its willingness to use either weathering steel or galvanized steel.[157] The City requested that the Project use weathering steel as opposed to galvanized steel structures to conform to the natural character of the Project area.[158]

103. The use of weathering steel structures has been shown to be an appropriate mitigation strategy.

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[152] Ex. 19 at 3.
[153] City of Burnsville Comments at 2 (Sept. 28, 2012) (eDocket Document No. 201210-79147-01).
[154] Ex. 19 at 4.
[155] *Id*.
[156] *Id.*
[157] Ex. 2 at 5-1.
[158] City of Burnsville Comments at 2 (Sept. 28, 2012) (eDocket Document No. 201210-79147-01). As noted in the Memorandum below, Xcel Energy indicated in its post-hearing submissions that it has no objection to using only weathering steel structures in the Project or to using specialized davit arms west of I-35W.

(3) Reduced Right-of-Way

104. The proposed structures for the 115 kV double circuit transmission line will be 50 to 100 feet tall with spans of 500 to 800 feet.[159] The proposed right-of-way for these structures is 100 feet wide (50 feet on each side of the transmission line).[160]

105. The City of Burnsville suggested that another means to mitigate the aesthetic impacts of the Proposed Project is to reduce the right-of-way for the structures from 100 to 50 feet in some or all portions of the Project.[161]

106. The amount of right-of-way required for a particular transmission project is dependent on the National Electric Safety Code (NESC) clearance requirements plus the area needed by the Company for access to and maintenance of the line.[162]

107. The 100-feet right-of-way requested by Xcel Energy takes into account the number of circuits, the heights of the proposed structures, and the spans between structures.[163]

108. The record in this case does not demonstrate a need to reduce the proposed right-of-way to 50-feet in all portions of the Project but additional consideration should be given to whether a reduction might be warranted in particular areas.

Cultural Values

109. The region surrounding the Project area has cultural values tied to the area's strong German, Norwegian, and Irish heritage, and the manufacturing, retail, finance, insurance, professional, scientific, and technical services economies.[164]

110. Construction of the proposed Project is not expected to conflict with the cultural values in the region.[165]

Recreation

111. Recreational opportunities within the Project Area include the Minnesota Valley National Wildlife Refuge, Cliff Fen Park, and Black Dog Park.[166] Primary tourism activities in the region include camping, recreational use of lakes for fishing and boating, bicycling, hiking, bird and wildlife viewing, and cross-country skiing.[167] Impacts to

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[159] Ex. 2 at 1-3, 5-1.
[160] Ex. 2 at 5-1, 5-5; Ex. 13 at 9.
[161] City of Burnsville Comments at 2 (Sept. 28, 2012) (eDocket Document No. 201210-79147-01); City of Burnsville Comments at 2.
[162] Ex. 13 at 9.
[163] Ex. 2 at 5-1 and Figures 4-6.
[164] *Id.* at 6-11.
[165] *Id.*
[166] *Id.*
[167] *Id.*

recreation as a result of the Project in this current environmental setting are anticipated to be minimal.[168]

112. As noted above, the City of Burnsville's future plans include reclaiming the Quarry, creating a new Quarry Lake that will be used for swimming and boating, constructing a city park, golf course, and riverfront park near the Proposed Route, and installing a foot/bike trail along Black Dog Road adjacent to the Proposed Route west of the Black Dog Substation [169] The EA determined that impacts to recreation as a result of the Project in the environmental setting envisioned in the City's development plans would likely be minimal to moderate.[170]

113. If constructed along the Proposed Route, the Project will relocate two existing 115 kV transmission line facilities from the limestone quarry and away from the City's planned development features.[171]

114. In a letter filed on September 27, 2012, the Metropolitan Council noted that "rerouting the transmission line is not anticipated to impact future development of the regional trail and actually moves the line further from the trail corridor within the project area."[172]

115. The City of Burnsville provided comments regarding the foot/bike trail and requested the opportunity to review Xcel Energy's Plan and Profile for the Project prior to filing to assess potential impacts on this future trail.[173]

116. The same mitigation strategies that were found to be reasonable and appropriate to limit the aesthetic impacts of the Proposed Project[174] are also appropriate to mitigate the impacts on recreation and tourism (i.e., minimizing vegetation removal, adding plants to minimize the visual exposure of structures and foundations, choosing structure heights and finishes that better blend with the environment, and using specialized davit arms in the western end of the Proposed Route).

Public Service and Infrastructure

117. The City of Burnsville provides water and sewer services to its residents. It is not anticipated that the Project will have any impact on public services or infrastructure.[175]

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[168] Ex. 13 at 51.
[169] Ex. 2 at 6-12; Ex. 13 at 51.
[170] Ex. 13 at 51.
[171] *Id.* at 49-52.
[172] Metropolitan Council Comments at 1 (Sept. 27, 2012) (eDocket Document No. 201210-79362-01).
[173] City of Burnsville Comments at 3 (Sept. 28, 2012) (eDocket Document No. 201210-79147-01). As noted in the Memorandum below, Xcel Energy indicated in its post-hearing submissions that it plans to meet with the City of Burnsville to discuss ways to mitigate impacts to the potential bike trail and recreational features that may be constructed as part of the limestone quarry reclamation plan.
[174] *See* Finding 90.
[175] Ex. 2 at 6-10; Ex. 13 at 44.

B. Effects on Public Health and Safety

118. Minnesota high voltage transmission line routing criteria require consideration of the Project's effect on health and safety.[176]

Construction and Operation of Facilities

119. The Project will be designed in compliance with local, state, NESC, and Xcel Energy standards regarding clearance to ground, clearance to crossing utilities, clearance to buildings, strength of materials, and right-of-way widths.[177]

120. In the Application, Xcel Energy asserted that its construction crews and/or contract crews will comply with local, state, NESC, and Xcel Energy standards regarding installation of facilities and standard construction practices and will follow Company safety procedures during and after installation of the transmission lines.[178] This will include clear signage during all construction activities.[179]

121. The transmission lines will be equipped with protective devices that will de-energize the line if an accident occurs, such as a structure or conductor falling to the ground.[180]

EMF

122. The possible effect of electric and magnetic fields (EMF) exposure on human health has been investigated by public health professionals for the past several decades. While the general consensus is that electric fields pose no risk to humans, the question of whether exposure to magnetic fields can cause biological responses or health effects continues to be debated.[181]

123. There is no federal standard for transmission line electric or magnetic fields.[182] However, the Commission has imposed a maximum electric field limit of 8 kV/m measured at one meter above the ground at the edge of the right-of-way.[183]

124. The calculated electric fields associated with the Project are significantly less than the maximum limit of 8 kV/m that has been imposed by the Commission.[184]

125. The main research on magnetic fields began in 1979. Since that time, epidemiological studies have shown that there is an association between childhood leukemia and EMF exposure. There has not been shown to be a consistent association

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[176] Minn. Stat. § 216E.03, subd. 7(b)(1); Minn. R. 7850.4100(B).
[177] Ex. 2 at 6-3.
[178] *Id.*
[179] *Id.*
[180] *Id.* at 6-4.
[181] *Id.*
[182] *Id.* at 5-10.
[183] *Id.*; Ex. 13 at 36.
[184] Ex. 2 at 5-10; Ex. 13 at 37.

between EMF exposure and other diseases in children or adults. Studies have failed to show a cause and effect relationship between disease and EMF exposure at common EMF levels, and no biological mechanism for how EMF might cause disease has been established.[185]

126. In Orders issued in 2007 and 2008, the Commission concluded that there is currently "insufficient evidence to demonstrate a causal relationship between EMF exposure and any adverse human health effects."[186]

127. The potential impacts of EMF on human health were recently at issue in the route permit proceeding for the Brookings – Hampton 345 kV transmission line. In that proceeding, Administrative Law Judge Richard Luis found that: "The absence of any demonstrated impact by [EF or MF] exposure supports the conclusion that there is no demonstrated impact on human health and safety that is not adequately addressed by the existing State standards for such exposure. The record shows that the current exposure standard for [EF/MF] is adequately protective of human health and safety."[187] The Commission ultimately adopted this finding in its Order granting the route permit.[188]

128. Similarly, in the route permit proceeding for the St. Cloud – Fargo 345 kV transmission line, Administrative Law Judge Beverly Jones Heydinger found: "Over the past 30 years, many epidemiological studies have been conducted to determine if there is a correlation between childhood leukemia and proximity to electrical structures. Some studies have shown that there is an association and some have not. Although the epidemiological studies have been refined and increased in size, the studies do not show a stronger related effect. In addition, a great deal of experimental, laboratory research has been conducted to determine causality, and none has been found."[189] The Commission adopted this finding in an Order issued on June 24, 2011.[190]

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[185] Ex. 2 at 6-4; Ex. 13 at 35.

[186] Findings of Fact, Conclusions of Law and Order at 7-8 in *In the Matter of the Application of Xcel Energy for a Route Permit for the Lake Yankton to Marshall Transmission Project in Lyon County*, PUC Docket No. E-002/TL-07-1407 (Aug. 29, 2008); Findings of Fact, Conclusions of Law and Order at 23 in *In the Matter of the Application for a HVTL Route Permit for the Tower Transmission Line Project,* Docket No. ET-2, E015/TL-06-1624 (Aug. 1, 2007).

[187] *See* Finding 216 of the ALJ's Report in *In the Matter of the Route Permit Application by Great River Energy and Xcel Energy for a 345 kV Transmission Line from Brookings County, South Dakota to Hampton, Minnesota*, PUC Docket No. ET-2/TL-08-1474, OAH Docket No. 7-2500-20283-2 (April 22, 2010, as amended on April 30, 2010).

[188] Order Granting Route Permit in *In the Matter of the Route Permit Application by Great River Energy and Xcel Energy for a 345 kV Transmission Line from Brookings County, South Dakota to Hampton, Minnesota,* PUC Docket No. ET-2/TL-08-1474 (Sept. 14, 2010).

[189] *See* Finding 125 of the ALJ's Report in *In the Matter of the Application for a Route Permit for the Fargo to St. Cloud 345 kV Transmission Line Project*, PUC Docket No. ET-2, E002/TL-09-1056, OAH Docket No. 15-2500-20995-2 (April 25, 2011).

[190] Order Granting Route Permit in *In the Matter of the Application for a Route Permit for the Fargo to St. Cloud 345 kV Transmission Line Project* (June 24, 2011).

129. No significant health impacts due to EMF are anticipated as a result of the Project.[191]

C. Effects on Land-Based Economies and Direct and Indirect Economic Impacts

Effect on Land-Based Economies

130. Minnesota's high voltage transmission line routing criteria require consideration of the Project's impacts to land-based economies, specifically agriculture, forestry, tourism, and mining.[192]

131. As the Project is located in a highly developed urban area, there are no existing commercial agriculture or forestry activities that occur within the Project Area.[193] The Project will remove the existing transmission lines that cross the active Quarry in the vicinity of the Project Area, thereby providing the Quarry owner with additional space to conduct mining operations. Accordingly, the impacts on the Quarry are anticipated to be positive.[194]

132. There are several tourist attractions located in the Project Area. The Minnesota Valley Natural Wildlife Reserve and various parks along the Mississippi River represent the major tourism resources in the general vicinity of the Project.[195]

133. Impacts to tourism as a result of the Project are anticipated to be minimal in the near term and minimal to moderate in the longer term, assuming the City of Burnsville's planned redevelopment in the Project Area occurs. Although the Project will not impede recreation and tourism, it may influence recreation decisions made by citizens and their enjoyment of recreational features.[196] Temporary impacts to the Minnesota Valley Natural Wildlife Reserve may occur during construction.[197]

D. Effects on Archeological and Historic Resources

134. Minnesota Rule 7850.4100(D) requires consideration of the effects on historic and archaeological resources.

135. On behalf of Xcel Energy, Merjent, Inc. conducted Phase Ia background research/literature review for the Project in December 2010 at the MnSHPO. This review indicated that there are three archaeological sites within one mile of the Project

[191] Ex. 13 at 37.
[192] Minn. Stat. § 216E.03, subd. 7(b)(5); Minn. R. 7850.4100(C).
[193] Ex. 2 at 6-13; Ex. 13 at 48, 49.
[194] Ex. 2 at 6-14; Ex. 13 at 48, 49.
[195] Ex. 2 at 6-14; Ex. 13 at 49-50.
[196] Ex. 13 at 48, 49, 51.
[197] Ex. 2 at 6-14.

area. None of these sites are located within the Proposed Route. The review also indicates that there are no historic sites within one mile of the Project area.[198]

136. No impacts to archaeological or historic resources are anticipated as a result of construction of the Project along the Proposed Route.[199]

E. Effects on Natural Environment

137. Minnesota's high voltage transmission line routing criteria require consideration of the proposed route's effect on the natural environment, including effects on air and water quality resources and flora and fauna.[200]

Air Quality

138. Construction of the Project will result in temporary air quality impacts caused by, among other things, construction-vehicle emissions and fugitive dust from right-of-way preparation. In addition, ozone and nitrous oxide may be emitted during transmission line operation.[201]

139. No significant impacts to air quality are anticipated as a result of the Project. Ozone and nitrous oxide emissions are expected to be well below applicable state and federal standards and have a relatively minor impact on concentrations in the greater metropolitan area. Impacts to air quality due to construction dust are anticipated to be minor and temporary.[202]

Water Quality and Resources

140. The Project is located within and surrounded by significant surface water features that include the Minnesota River and Black Dog Lake.[203] The City of Burnsville's comprehensive plan anticipates that a third body of water, Quarry Lake, will be created in the Project Area after the closure of Kraemer Quarry, and that Quarry Lake will serve multiple purposes, such as a fishery, a recreational lake, and a drinking water resource.[204] The portion of the Project east of I-35W is located within a Federal Emergency Management Agency (FEMA) designated floodplain.[205]

(1) Surface Waters and Groundwater

141. The Project's impacts to existing surface waters potentially could be significant, particularly on the eastern end of the project. However, it is expected that

[198] Ex. 2 at 6-15 through 6-16; Ex. 13 at 52.
[199] Ex. 13 at 52.
[200] Minn. Stat. § 216E.03, subd. 7(b)(1) and (2); Minn. R. 7850.4100(E).
[201] Ex. 2 at 6-16; Ex. 13 at 41.
[202] Ex. 13 at 41.
[203] Ex. 2 at 6-18.
[204] Ex. 13 at 54.
[205] Ex. 2 at 6-23.

impacts will be minimal because there are strategies that can be employed to mitigate potential impacts.[206]

142. During construction of the Project, there is potential for adverse impacts to existing surface water due to construction traffic, clearing of vegetation, and ground disturbances. These activities can speed water flow and expose previously undisturbed soils, increasing erosion and the potential for sediment to reach surface waters. If the transmission line is placed underground in the western end of the Project, soils will be disturbed throughout the transmission line right-of-way; otherwise, disturbed soils will generally be limited to pole locations. The removal of existing transmission lines from Black Dog Lake also has the potential for direct adverse impacts to that lake, since removal of the poles may stir up sediment and equipment on the barges that will be used to access the existing structures may introduce small amounts of hydrocarbons into the lake.[207]

143. Impacts to groundwater due to the Project are anticipated to be minimal.[208]

144. Potential direct impacts to groundwater from the Project could occur as a result of the drilling and placement of concrete structure foundations, the leaching of soluble components of the concrete into groundwater, and the dewatering required to facilitate construction of the foundations. In addition, because groundwater in the Project Area is at or very close to surface water levels due to the Project's location in the bottom of the Minnesota River valley, construction activities resulting in sedimentation that affects surface water could have a similar effect on groundwater. If the transmission line is placed underground in the western end of the Project, there would be a relatively greater impact on groundwater because excavation and construction would be required along the entire length of the right-of-way rather than being limited to individual pole foundations, and extensive dewatering likely would be required.[209]

145. In addition to a route permit from the Commission, construction of the Project will require Xcel Energy to obtain a number of other permits and approvals from state and federal agencies that focus on preventing and mitigating impacts of the Project on water resources (such as a Clean Water Act Section 401 Water Quality Certification from the MPCA, a Clean Water Act Section 404 Permit from the U.S. Army Corps of Engineers, a Public Waters Work Permit from the MnDNR, and a National Pollutant Discharge Elimination System/State Disposal System permit from the MPCA).[210]

146. Impacts to surface waters and groundwater can be avoided and minimized by implementing appropriate sediment control practices and best management

[206] Ex. 13 at 54.
[207] *Id*. at 54-55.
[208] *Id*. at 55.
[209] *Id*. at 55-56.
[210] *Id*. at 7-8, 55; Ex. 2 at 6-18.

practices.[211] In its application, Xcel Energy indicated that it will apply erosion control measures identified in the Storm Water Best Management Practices Manual issued by the Minnesota Pollution Control Agency (MPCA). Xcel Energy further stated that it will control its operations to minimize and prevent material discharges to surface waters and ensure that disturbed soils are stabilized upon completion of the construction process to minimize the potential for subsequent effects on surface water quality.[212]

147. Mitigation strategies that are reasonable and appropriate to limit the impacts of the Proposed Project on surface waters and groundwater include requiring Xcel Energy to: (1) ensure that construction of the Project does not disturb soils in a manner that leads to impairment of surface waters or groundwater; (2) employ soil erosion control measures consistent with those identified in the MPCA's Stormwater Best Management Practices Manual; (3) minimize and prevent material discharges to surface water; and (4) stabilize disturbed soils upon completion of the construction process.

(2) Wetlands

148. Wetlands are prevalent in the project area, particularly on the eastern end of the project around Black Dog Lake. On the western end of the Project, the proposed route is estimated to cross 3.8 acres of wetlands. On the eastern end of the Project, the proposed route is estimated to cross 31.5 acres of wetlands.[213]

149. Crossing a wetland does not necessarily mean that the wetland will be impacted, since the line could merely span the wetland. However, where the crossing requires construction activities within the wetland, there is a strong potential for impacts. Activities typically associated with construction of transmission line structures, such as vegetation clearing, movement of soils, and construction traffic, could impair the functioning of wetlands or cause small changes in hydrology. If wetlands are crossed by an underground line, significant impacts would result from placing a duct and vault system.[214]

150. Impacts to wetlands can be mitigated by spanning them, using stabilization mats, working in wetlands when they are frozen, and utilizing existing roads for the movement of equipment and materials.[215]

151. In its Application, Xcel Energy stated that it should be able to successfully span the small pockets of wetlands in the portion of the Project west of I-35W and avoid having construction equipment travel through those wetlands. Xcel noted that, where wetlands must be crossed to pull in new conductors and shield wires, its workers may drive equipment on top of stabilization mats if soil conditions are saturated and susceptible to rutting.

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[211] Ex. 13 at 55.
[212] Ex. 2 at 6-19; Ex. 13 at 55-56.
[213] Ex. 2 at 6-19 through 6-22, Table 15; Ex. 13 at 56-57.
[214] Ex. 13 at 56-57
[215] *Id.* at 57.

152. Because the portion of the Project east of I-35W is predominantly composed of wetlands, Xcel Energy indicated in its Application that it would not be feasible to span and avoid travel across those wetlands. Xcel noted that workers may drive equipment on top of stabilization mats when crossing wetlands, if soil conditions are saturated and susceptible to rutting. During winter months, Xcel indicated that its equipment will travel across the wetlands under frozen ground conditions and, if saturated, unfrozen areas are present, it will use stabilization mats. Finally, Xcel noted that heavy equipment will travel on Black Dog Road to the greatest extent possible and use the shortest route when wetland access is unavoidable.[216]

153. In general, Xcel Energy noted in its Application that it will follow standard erosion control measures identified in the MPCA's Stormwater Best Management Practice Manual (such as using a silt fence), implement construction practices within or near wetlands to prevent soil erosion and sedimentation, and ensure that equipment is fueled and lubricated at a sufficient distance from the wetlands. The Company indicated that the practices it uses may include containing excavated material, protecting exposed soil, and stabilizing restored soil, and asserted that it would obtain necessary permits and approvals and work closely with regulatory agencies to establish additional mitigative measures.[217]

154. Although impacts to wetlands as a result of the Project have the potential to be significant, actual impacts to wetlands are anticipated to be minimal to moderate because there are strategies that can be employed to mitigate potential impacts.[218]

155. Mitigation strategies that are reasonable and appropriate to limit the impacts of the Proposed Project on wetlands include requiring Xcel Energy to: (1) avoid wetlands whenever possible by routing around them or crossing over them; (2) use existing roads for movement of equipment and machinery; (3) cross wetlands when frozen (engage in construction during the winter); (3) use stabilization mats to facilitate construction; and (4) place staging and assembly areas outside of wetlands.

(3) Floodplain and Shoreland Ordinances

156. The City of Burnsville has expressed concern about the Project's potential impact on state shoreland and floodplain areas.[219]

157. Local governments have the responsibility for enforcing federal and state floodplain requirements and state shoreland requirements. Under the Minnesota Floodplain Management and Municipal Shoreland Management laws, MnDNR adopts rules that establish statewide minimum standards and criteria for development in floodplains and shorelands and reviews and approves local ordinances for substantial

[216] Ex. 2 at 6-22.
[217] *Id*. at 6-23.
[218] Ex. 13 at 56.
[219] City of Burnsville Comments (Sept. 28, 2012) (eDocket Document No. 201210-79147-01).

compliance with these statewide standards. Once approved, the local governments are responsible for administering and enforcing the ordinances.[220]

158. Accordingly, the City of Burnsville has the authority to administer and enforce its shoreland and floodplain ordinances, subject to the provisions of the PPSA and other applicable law.

(4) MnDNR Floodplain Regulations

159. Minnesota Rules Chapter 6120 sets out the minimum floodplain requirements that must be incorporated into local zoning ordinances. Specifically, part 6120.5800 of those rules specifies that "public utility facilities . . . within the floodplain should be designed to minimize increases in flood elevations and should be compatible with existing local comprehensive floodplain development plans."[221]

160. Xcel Energy proposes to place 32 concrete foundations within the 100-year floodplain. The Company calculates that the displacement attributable to the concrete foundations would cause a maximum incremental rise in water level of 0.0034 inch, and would have a negligible effect on flooding potential.[222]

161. Xcel Energy also plans to remove a total of 60 wooden pole H-frame structures that are currently placed within the 100-year floodplain, including Black Dog Lake, which would result in a decreased volume of displacement during flooding (and a recovery of the area of floodplain that was displaced when the structures were initially installed). The Company calculates that the total regained displacement would be approximately 5,652 cubic feet.[223]

162. Based on these calculations, Xcel Energy projected that the total displacement attributable to the concrete foundations over the area would cause a maximum incremental rise in water level of 0.0027 inch. Because the rise in water level will be negligible, Xcel Energy determined that it was not necessary to conduct modeling to evaluate the effects of the Project on flooding.[224]

163. On November 16, 2012, Xcel Energy filed a "No-Rise" Certification that was executed by Thomas E. MacDonald, a Professional Engineer with Barr Engineering and Environmental Consultants, on October 31, 2012. Mr. MacDonald conducted an analysis of the Project using the Hydrologic Engineering Center-River Analysis System (HEC-RAS). He attested that the Proposed Project "will not impact the floodway width or 100-year flood elevation (will not raise or lower by more than 0.00 feet) on the Minnesota River at published sections in the Flood Insurance Study for Dakota County dated December 2, 2011 and will not impact the 100-year flood elevation (will not raise

[220] Minn. Stat. §§ 103F.121, 103F.211, and 103F.221; MnDNR Comments at 3 (Sept. 28, 2012) (eDocket Document No. 20129-79074-01).
[221] Minn. R. 6120.5800, subp. 4(E).
[222] Ex. 2, Appendix F at 1-2.
[223] *Id*.
[224] *Id*. at 2.

or lower by more than 0.00 feet) at unpublished cross-sections in the vicinity of the proposed development/project." In an accompanying Technical Memorandum, Mr. MacDonald concluded, based upon the modeling that he conducted:

> It would be expected that the removal of the old H-frame structures and replacement with new towers would have no impact on flood levels for the following reasons:
>
> - The proposed towers have roughly the equivalent cross-sectional width as the combined H-frame poles;
> - A similar number of towers will replace each pairing of H-frame poles (i.e. one tower will replace two H-frame poles);
> - The proposed towers will be less prone to catching debris (this was not considered in the model);
>
> As expected, the HEC-RAS model results indicate that the proposed towers will have zero impact (and slightly less impact at some cross-sections) compared to the current towers. . . .[225]

(5) The City of Burnsville's Floodplain Zoning Regulations

164. The City of Burnsville has adopted floodplain regulations that are more restrictive than the state regulations.[226] Burnsville City Zoning Code provides that transmission lines are considered "floodway conditional or interim uses" and require a conditional or interim use permit.[227] The City Zoning Code further provides that no conditional or interim uses are allowed which "will cause any increase in the stage of the 100-year or regional flood."[228]

165. Pursuant to the Power Plant Siting Act, the issuance of a route permit by the Commission and the subsequent use of such route locations for high-voltage transmission line purposes "shall supersede and preempt all zoning, building, or land use rules, regulations, or ordinances" adopted by local governments.[229]

166. As discussed in the Memorandum below, the Administrative Law Judge recommends that Xcel Energy be required to consult with the City about the Project and consider any suggestions the City makes that it contends would make the project more consistent with floodplain and shoreland requirements.

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[225] No-Rise Certificate and Technical Memorandum (Nov. 16, 2012) (eDocket Document No. 201211-80763-01).
[226] Local government units are expressly permitted to adopt floodplain management ordinances that are more restrictive than required by state law. Minn. Stat. § 103F.121, subd. 2(f).
[227] Burnsville City Code at 10-10-4(C).
[228] *Id*. at 10-10-4(D).
[229] Minn. Stat. § 216E.10, subd. 1.

(6) Minnesota Wetland Conservation Act

167. Due to potential impacts to water resources and wetlands, Xcel Energy noted in its Route Permit Application that the Project may require approvals under various federal and state laws, including the Minnesota Wetland Conservation Act (WCA).[230] Xcel Energy indicated in its Application that it will work with the City to determine proper application of the WCA to the Project once the proposed locations of the structures and alignment are finalized.[231]

Flora

168. Transmission lines have the potential to affect flora due to the removal or disturbance of vegetation during construction, the possible introduction of non-native species, and changes in soils, water flow, or other habitat that adversely affect plant growth.[232]

169. The Project Area is located within the Minnesota River Valley in the biogeographic province known as the Eastern Broadleaf Forest Province. Historically, this area was primarily floodplain and terrace forests. Terrace forests generally include maple and basswood trees, and floodplain forests generally include cottonwood, willow, and elm trees. The Project Area includes forest, grassed areas, wetlands, and riparian areas that support a variety of plant communities.[233]

170. The eastern end of the Project Area primarily consists of open water, wetlands, and riparian areas. It includes a variety of high value native plant communities and natural resources such as bulrush marshes, seepage meadows, and calcareous fens. The western end is primarily developed commercial and industrial land and includes the Kraemer Quarry and a sanitary landfill.[234]

171. The proposed Project route along the isthmus of land between the Minnesota River and Black Dog Lake minimizes potential impacts by avoiding the high value plant communities that are located primarily on the south side of Black Dog Lake. The Project will involve removal of vegetation to construct and safely operate the transmission line. Trees and shrubs on the eastern and western ends of the project will likely be removed or affected, although the extent will depend upon the final alignment of the new transmission line. It is estimated that 8-11 acres of trees and shrubs will be affected on the eastern end of the Project and 7-10 acres on the western end.[235]

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[230] Ex. 2 at 6-18.
[231] *Id*. at 6-20.
[232] Ex. 13 at 59.
[233] Id.; Ex. 2 at 6-1.
[234] Ex. 13 at 59.
[235] *Id*. at 59-60.

172. The primary objective of Xcel Energy's vegetation management procedure is to keep transmission facilities clear of tall growing trees, brush, and other vegetation that could interfere with the safe operation of the transmission line.[236]

173. Whenever feasible, Xcel Energy tries to manage vegetation within the right-of-way using the wire zone/border zone concept. This concept allows for different, yet compatible, vegetation types in separate zones. Grasses and forbs are allowed to grow in the wire zone, which is the area directly beneath the conductors, and low-growing woody plants and trees are allowed to grow in the border zone, which begins at the outside edge of the wire zone and extends to the edge of the right-of-way. Using this management concept, the majority of vegetation clearing for the proposed Project will occur within Xcel Energy's right-of-way.[237]

174. The Project has the potential to have a significant impact on flora, particularly on the eastern end of the Project where high value native plant communities are present. However, the actual impacts are anticipated to be minimal because approaches can be taken to avoid or mitigate the adverse effects.[238]

175. The primary method of mitigating adverse impact on flora is to avoid these areas through prudent routing. If impacts cannot be avoided, they can be mitigated by choosing alignments that parallel and share right-of-way with existing infrastructure; engaging in construction during fall and winter months to limit plant damage; leaving compatible plants in the buffer zone of the transmission line right-of-way; replanting the transmission line right-of-way with low-growing native species; and avoiding the introduction of exotic or invasive species.[239]

176. Mitigation strategies that are reasonable and appropriate to limit the impacts of the Proposed Project on flora include requiring Xcel Energy to: (1) avoid high value native plant communities whenever possible by routing around them or crossing over them; (2) follow alignments that parallel and share right-of-way with existing infrastructure, where possible; (3) selectively remove only tall-growing trees; (4) retain low-growing plants and trees in the border zone of the right-of-way; (5) engage in construction during fall and winter months to minimize plant damage; (6) inspect and clean equipment to avoid the introduction of exotic or invasive plant species; and (7) replant disturbed soils with low-growing native plant species.

Fauna

177. The Project Area is within the Minnesota Valley National Wildlife Refuge (NWR), which is noted as an important bird area by Audubon Minnesota. The Black Dog unit of the Minnesota Valley NWR is approximately 1,400 acres in size and is a resting area for migratory birds and waterfowl. Bird species include eagles, turkeys, hawks, pheasants, ducks, herons, and songbirds. Because the Black Dog generating

[236] *Id*. at 22.
[237] *Id*. at 22-23.
[238] *Id*. at 59.
[239] *Id*. at 60.

station uses Black Dog Lake for heat rejection from the station, the lake remains open later into the season and is used on an extended basis by birds and waterfowl.[240]

178. The eastern end of the Project Area consists primarily of open water, wetlands, and riparian areas, and provides high value habitat for a variety of birds, mammals, reptiles, amphibians, and fish species. Mammals in the Project Area include deer, coyotes, raccoons, beavers, squirrels, and muskrats. Reptiles in the Project Area include a variety of turtles and snakes. Amphibians include frogs and toads. Fish species vary with the type of water body and include bass, sunfish, crappies, northern pike, and carp.[241]

179. Habitat in the western end of the Project is relatively poor. Most of the land is used for mining and landfills. Forested areas along the northern and western edges of the quarry provide habitat for some species.[242]

180. Transmission lines have the potential to affect fauna due to temporary displacement, loss of habitat, and, for avian species, collisions with transmission line conductors. Impacts to fauna as result of the Project are anticipated to be minimal to moderate.[243]

181. The Project could affect raptors, waterfowl, and other bird species due to collision with transmission line conductors. Electrocution occurs when birds with large wingspans come into contact with two conductors or a conductor and a grounding device.[244]

182. The electrocution of large birds, such as raptors, is more commonly associated with small distribution lines than large transmission lines. In addition, Xcel Energy's design standards for its transmission and distribution lines provide adequate spacing to eliminate the risk of electrocution of large birds.[245]

183. In its Application, Xcel Energy indicated that it will place the conductors of the transmission line in a horizontal configuration rather than a vertical configuration on the east side of the Project adjacent to Black Dog Lake to minimize the potential for avian collisions. The Company also stated that the lines and majority of structures will be placed along the road within the cover of trees where possible, instead of crossing directly north of Black Dog Lake.[246]

184. In the Application, Xcel Energy stated that Swan Flight Diverters will be placed every 40 feet on the overhead static lines of the Proposed Route east of I-35W. It also acknowledged its willingness to work with the MnDNR and the USFWS to identify areas that may be appropriate for marking transmission line shield wires with bird

[240] Ex. 2 at 6-24; Ex. 13 at 60-61.
[241] Ex. 13 at 60-61.
[242] *Id*. at 61.
[243] Ex. 13 at 60.
[244] Ex. 2 at 6-24.
[245] *Id*.
[246] *Id*. at 6-25.

diverters.[247] The EA indicated that Xcel Energy is planning to install Swan Flight Diverters along the entire length of the Project except the section crossing over I-35W.[248] In its written comments, the MnDNR supported Xcel's intention to place diverters east of I-35W and also recommended that they be used in other areas along the route where trees were not located adjacent to the transmission line or trees were not of adequate height to divert avian flights.[249]

185. The record in this matter suggests that the use of Swan Flight Diverters should not be limited solely to the Project Area east of I-35W.

186. Mitigation strategies that are reasonable and appropriate to limit the impacts of the Proposed Project on fauna include requiring Xcel Energy to: (1) use structures that place conductors in a horizontal configuration, such as delta structures; (2) ensure transmission line conductors are spaced far enough apart to minimize potential electrocution; (3) use Swan Flight Diverters on static lines above transmission line conductors east of I-35W and also in other areas along the route where trees are not located adjacent to the transmission line or trees are not of adequate height to divert avian flights; and (4) make use of existing treed areas to divert bird flights above conductors.

E. Effects on Rare and Unique Natural Resources

187. Minnesota's high voltage transmission line routing criteria require consideration of the proposed route's effect on rare and unique natural resources.[250]

Rare and Unique Fauna

188. Two federally-listed species are known to occur within Dakota County: the Higgins eye pearlymussell, which is listed as endangered, and the prairie bush-clover, which is listed as threatened. Because the Higgins eye pearlymussell occurs only within the Mississippi River and the lower portion of some of its larger tributaries, Xcel Energy determined that the Project will have no effect on that mussel or its habitat. In addition, Xcel Energy determined that the Project will have no effect on the prairie bush-clover or its habitat because it occurs within native dry mesic-prairies where the soils are well-drained and have high sand or gravel content. The U.S. Fish and Wildlife Service concurred with Xcel Energy's determination that the Project will not impact federally-listed species (the Higgins eye pearlymussell or the prairie bush-clover).[251]

189. The USFWS informed Xcel Energy that a bald eagle may occur within the Project Area near the outlet of the Minnesota River and Black Dog Lake, and Xcel Energy confirmed the location of an active bald eagle nest in the Project Area. On June 20, 2011, Xcel Energy representatives met with USFWS staff to discuss how to best

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[247] *Id.*; *see also* Xcel Energy's Initial Post-Hearing Brief at 20.
[248] Ex. 13 at 62 (citing Xcel Energy Project Information).
[249] MnDNR Scoping Comment Letter (May 4, 2012) (eDocket Document No. 2012574535-02).
[250] Minn. Stat. § 216E.03, subd. 7(b)(1); Minn. R. 7850.4100(F).
[251] Ex. 2 at 6-26 through 6-27.

route the transmission line in the area near the bald eagle nest. USFWS suggested angling a short segment of the transmission line away from the nest and placing structures along the shoreline or potentially within Black Dog Lake. Xcel Energy incorporated these recommendations into the Proposed Route by deviating from Black Dog Road between structures 12 through 16 to avoid the nest.[252] Impacts to bald eagles are anticipated to be minimal.[253]

190. Additional species and native plant communities in the Project Area were identified through review of the MnDNR's Natural Heritage Information System and based on additional information provided by MnDNR. These include paddlefish, Blanding's turtles, peregrine falcons, and a Seepage Meadow/Carr native plant community.

191. Peregrine falcons are a state-listed threatened species. They have regularly nested on a smokestack at the existing Black Dog Plant since 1993. It is unlikely that construction of the Proposed Project would affect this species since the majority of the construction will occur away from the Plant. In accordance with the MnDNR's recommendation, Xcel Energy will report any signs of unusual behavior or distress during construction of the Project to the regional wildlife specialist.[254]

192. The Blanding's turtle is also state-listed as threatened. Such turtles use wetlands and upland areas during their life cycle. They prefer marshes and wetlands with slow-moving water, such as those found around Black Dog Lake.[255]

193. In its September 28, 2012 comment letter, the MnDNR recommended that the Route Permit clarify the specific mitigation measures that will be used by Xcel Energy to avoid a taking of a state-listed threatened species and include a Special Condition relating to Blanding's Turtles similar to that set forth in Section 5.5 of the sample permit attached to the EA, which states:

> **Blanding's Turtle**
>
> The permittee shall follow measures and recommendations for avoiding and minimizing impacts to Blanding's turtle populations as outlined in the Minnesota Department of Natural Resources Division of Ecological Resources Environmental Review Fact Sheet Series for Blanding's Turtle (http://files.dnr.state.mn.us/natural_resources/animals/reptiles_amphibians/turtles/blandings_turtle/factsheet.pdf). Construction and maintenance personnel shall be made aware of the Blanding's turtle and their habitat during pre-construction meetings.[256]

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[252] *Id*. at 6-27; Ex. 13 at 64.
[253] Ex. 13 at 64.
[254] Ex. 2 at 6-28 and Appendix C.2; Ex. 13 at 63.
[255] Ex. 2 at 6-27; Ex. 13 at 63.
[256] MnDNR Comments at 2 (Sept. 28, 2012) (eDocket Document No. 20129-79074-01); Ex. 13, Appendix C, Section 5.5.

194. In its Application, Xcel Energy stated that it intends to adopt the measures recommended by the MnDNR to avoid and mitigate impacts to the Blanding's turtle. Among other things, Xcel Energy indicated that it would give all contractors a flyer with an illustration of a Blanding's turtle; would move turtles that are in imminent danger by hand to areas out of harm's way; would leave turtles not in imminent danger undisturbed; would use silt fencing to keep turtles out of construction areas; would not dredge, deepen, fill, or convert small vegetated temporary wetlands because they provide important habitat during spring and summer; would protect wetlands from pollution; and would manage vegetation in infrequently mowed areas mechanically and not chemically.[257] The EA recognizes that these are appropriate mitigation strategies.[258]

195. To mitigate potential impacts on species occupying wetland communities, Xcel Energy will place structures and poles so that the conductors span waterbodies, watercourses, and wetlands to the extent possible. Sediment will be controlled so that it does not reach aquatic and wetland habitats.[259]

196. Locating the proposed route on the isthmus between the Minnesota River and Black Dog Lake minimizes impacts to rare aquatic species such as paddlefish and freshwater mussels. The impacts caused by removal of old transmission structures are anticipated to be minimal and limited to the lake bottom and small areas around the structures to be removed.[260]

197. Mitigation strategies that are reasonable and appropriate to limit the impacts of the Proposed Project on rare and unique fauna include requiring Xcel Energy to: (1) avoid high value habitat (wetlands and riparian areas) whenever possible; (2) avoid nesting areas for rare avian species; (3) conduct construction during the fall and winter months; (4) provide a Blanding's turtle identification flyer to construction personnel; (5) move turtles by hand when they are in imminent danger; (6) leave turtles not in imminent danger undisturbed; (7) use wild-life-friendly erosion control silt mesh in wetland areas; (8) use erosion control measures to minimize impacts to turtle nests; (9) avoid or cross over wetlands when possible; (10) use mechanical rather than chemical vegetation management for the transmission line right-of-way and perform such management after October 1 and before June 1; (11) follow strategies identified for mitigating impacts to avian species generally; (12) follow all measures and recommendations set forth in the MnDNR's Environmental Review Fact Sheet Series for Blanding's turtle populations; and (13) consult with USFWS and MnDNR to develop an invasive species management plan for the Project and follow that plan.

Rare and Unique Flora

198. The Seepage Meadow/Carr plant community is a rare plant community on the western end of Black Dog Lake along I-35W which has been identified as a site of

[257] Ex. 2 at 6-28.
[258] Ex. 13 at 65.
[259] Id.
[260] *Id*. at 64.

high biodiversity significance.[261] Based on the proposed route, four transmission line structures will be placed in this plant community.[262]

199. In its September 28, 2012, comments, the MnDNR expressed concern about potential impacts to the Seepage Meadow/Carr plant communities and recommended that any construction work within these communities be completed when the ground is frozen.[263]

200. Although Xcel Energy noted that its mitigation measures "may" include doing work "if possible" in autumn or winter to avoid damaging plants during the growing season, it has not made a firm commitment to follow such an approach.

201. The MnDNR also identified calcareous fens in the Project Area. Calcareous fens are rare wetlands that result from the upwelling of groundwater through calcareous substrates. This hydrology creates calcium-rich environments which support unique plant communities. Calcareous fens are designated in Minnesota as outstanding resource value waters. They cannot be filled, drained, or otherwise degraded without a management plan approved by the Commissioner of the MnDNR. MnDNR advised Xcel Energy that these fens should be considered avoidance areas, and acknowledged that the Proposed Route would in fact avoid the fens.[264] Because the Proposed Route is on the lowland side of the fens, changes in water flows or hydrology which could impact calcium concentrations within the fens are not expected.[265]

202. In addition to unique native plant communities, rare and unique plant species also exist in the Project Area. These include Sullivant's Milkweed, Sterile Sedge, Snow Trillium, and Small White Lady's-slipper.[266]

203. Impacts to rare and unique species have the potential to be significant, particularly on the eastern end of the Project, which contains high value plant communities and habitat for rare fauna. However, actual impacts are anticipated to be minimal since mitigation strategies can be employed.[267]

204. The mitigation strategies that were recommended with respect to wetlands (see Finding 155) are also reasonable and appropriate to limit the impacts of the Proposed Project on rare and unique flora. In addition, with respect to the Seepage Meadow/Carr plant communities, it is reasonable and appropriate to require that construction of the Project occur only when the ground is frozen, as recommended by the MnDNR.

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[261] *Id*. at 62, 64.
[262] *Id*. at 64 and Map B-18.
[263] MnDNR Comments at 1 (Sept. 28, 2012) (eDocket Document No. 20129-79074-01).
[264] Ex. 2 at 6-27; Ex. 2, Appendix C.2; Ex. 13 at 63.
[265] Ex. 13 at 63.
[266] *Id*.
[267] *Id*. at 62.

G. Application of Various Design Considerations

205. Minnesota's high voltage transmission line routing criteria require consideration of the Project's applied design options that maximize energy efficiencies, mitigate adverse environmental effects, and could accommodate expansion of transmission or generating capacity.[268]

206. The Proposed Route is designed with sufficient capacity to meet both existing and anticipated distribution load in the City of Burnsville.[269]

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

207. Minnesota's high voltage transmission line routing criteria require consideration of the proposed routes' use or paralleling of existing rights-of-way, survey lines, natural division lines, and agricultural field boundaries.[270]

208. The Proposed Route maximizes the use of existing road rights-of-way. Approximately 3.4 miles of the 4.6-mile-long Proposed Route are within or adjacent to existing road rights-of-way.[271]

209. Using existing corridors reduces and minimizes impacts on planned future residential areas, commercial properties, and environmental and sensitive resources.[272]

210. In its September 28, 2012, comments, the City of Burnsville requested that the Route Permit specify that the proposed structures west of I-35W need to be at least 50 feet east of the western edge of the Kraemer Mining and Materials' (KMM) property line near the City's proposed expansion of the north-south section of Golf Drive in this area.[273] The proposed alignment for the structures along this portion of Golf Drive is a minimum of 50 feet from the east of the western edge of the KMM property and a minimum of 48 feet from the edge of the proposed expansion of Golf Drive.[274]

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

211. Minnesota's high voltage transmission line routing criteria require consideration of the proposed routes' use of existing transportation, pipeline, and electrical transmission systems or rights-of-way.[275]

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[268] Minn. Stat. § 216E.03, subd. 7(b)(3); Minn. R. 7850.4100(G).
[269] Ex. 2 at 1-4.
[270] Minn. Stat. § 216E.03, subd. 7(b)(8) and (9); Minn. R. 7850.4100(H).
[271] Ex. 2 at 4-3.
[272] *Id*.
[273] City of Burnsville Comments at 2 (Sept. 28, 2012) (eDocket Document No. 201210-79147-01).
[274] Xcel Energy and the EFP Unit both agree that Figure B-12 of the EA misrepresents the distance between the proposed structures and the edge of the proposed expansion of Golf Drive.
[275] Minn. Stat. § 216E.03, subd. 7(b)(8); Minn. R. 7850.4100(J).

212. As noted above, the Proposed Route maximizes the use of existing road rights-of-way. Approximately 3.4 miles of the 4.6-mile-long Proposed Route are within or adjacent to existing road rights-of-way.[276]

J. Electrical System Reliability

213. Minnesota's high voltage transmission line routing criteria require consideration of the Project's impact on electrical system reliability.[277]

214. The Project is designed to provide increased electrical system reliability. It will replace aging lines and deteriorating structures, and also will ensure that operators are able to reliably operate the system and serve all connected loads without any ongoing overloads or voltage problems, in accordance with NERC reliability requirements.[278]

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

215. Minnesota's high voltage transmission line routing criteria require consideration of the proposed route's cost of construction, operation, and maintenance.[279]

216. Construction cost estimates are subject to change as they can be affected considerably by several variables such as the timing of construction, availability of construction crews and components, and the final route selected by the Commission.

217. The estimated cost of the Project along the Proposed Route is $8.69 million. Xcel Energy provides this estimate with a plus or minus 30 percent accuracy; accordingly, the total Project cost could be between $6.08 and $11.30 million. Of this cost, the Quarry will contribute $1 million for relocation of the transmission lines.[280]

218. For all of the overhead designs, operating and maintenance costs for the transmission line will be nominal for several years since the line will be new, and minimal vegetation maintenance will be required. Annual operating and maintenance costs for the 115 kV transmission voltages across Xcel Energy's Upper Midwest system average approximately $300 to $500 per mile of transmission right-of-way. The principal operating and maintenance cost will be inspections, which are usually done on a regular basis by fixed-wing airplanes or helicopters.[281]

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[276] Ex. 2 at 4-3.
[277] Minn. Stat. § 216E.03, subd. 7(b)(10); Minn. R. 7850.4100(K).
[278] Ex. 2 at 3-1 through 3-2.
[279] Minn. R. 7850.4100(L).
[280] Ex. 2 at 3-2.
[281] *Id*. at 3-3.

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

219. Minnesota's high voltage transmission line routing criteria require consideration of the adverse human and natural environmental effects which cannot be avoided, for each proposed route.[282]

220. Unavoidable adverse impacts associated with the Project include tree removal and physical effects on the wetland in the Project Area caused by construction and placement of the structures along the Proposed Route.[283]

M. Irreversible and Irretrievable Commitments of Resources

221. Minnesota's high voltage transmission line routing criteria require consideration of the irreversible and irretrievable commitments of resources that are necessary for each proposed route.[284]

222. There are few commitments of resources associated with this Project that are irreversible and irretrievable, but those few resources primarily relate to construction of the Project. Only construction resources, such as concrete, steel, and hydrocarbon fuels, will be irreversibly and irretrievably committed to this Project.[285]

NOTICE

223. Minnesota statutes and rules require Xcel Energy to provide certain notice to the public and to local governments before and during the Application for a Route Permit process.[286]

224. Xcel Energy provided notice to the public and to local governments in accordance with applicable Minnesota statutes and rules.[287]

225. Minnesota statute and rules also require EFP to provide certain notice to the public throughout the Route Permit process.[288]

226. EFP provided notice to the public in accordance with applicable Minnesota statutes and rules.[289]

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[282] Minn. Stat. §§ 216E.03, subd. 7(b)(5) and (6); Minn. R. 7850.4100(M).
[283] Ex. 2 at 6-32.
[284] Minn. Stat. § 216E.03, subd. 7(b)(11); Minn. R. 7850.4100(N).
[285] Ex. 2 at 6-33.
[286] Minn. Stat. § 216E.03, subds. 3a and 4; Minn. R. 7850.2100, subps. 2 and 4.
[287] *See* Ex. 1 (Notice of Intent to File Application Pursuant to Alternative Permitting Process), Ex. 3 (Affidavit of Mailing Notice of Filing of Route Permit Application); Ex. 4 (Affidavit of Publication regarding Route Permit Application); Ex. 12 (Affidavit of Mailing Notice to Landowners of Reconductoring).
[288] Minn. Stat. § 216E.03, subd. 6; Minn. R. 7850.2300, subp. 2, and 7850.2500, subps. 2, 7, 8, and 9.
[289] *See* Ex. 7 (Affidavit of Publication of Notice of Public Information and Scoping Meeting); Ex. 8 (Transcript of Public Information and Scoping Meeting); Ex. 11 (Notice of Scoping Decision); Ex. 14 (Certificate of Service regarding Notice of Public Hearing and Availability of Environmental Assessment);

ADEQUACY OF EA

227. The Commission is required to determine the adequacy of the EA. An EA is adequate if it addresses the issues and alternatives raised during the scoping process and includes the items required by Minnesota Rule 7850.3700, subp. 4.[290]

228. The evidence in the record demonstrates that the EA is adequate because it addresses the issues and alternatives raised during the scoping process and identified in the Scoping Decision and includes the items required by Minnesota Rule 7850.3700, subp. 4.[291]

Based on the foregoing Findings of Fact, the Administrative Law Judge makes the following:

CONCLUSIONS

1. The Public Utilities Commission and the Administrative Law Judge have jurisdiction to consider Xcel Energy's Application for a Route Permit.

2. The Commission determined that the Application was substantially complete and accepted the Application on March 23, 2012.[292]

3. EFP has conducted an appropriate environmental analysis of the Project for purposes of this route permit proceeding and the EA satisfies the requirements of Minn. R. 7850.3700. Specifically, the EA addresses the issues and alternatives raised in scoping to a reasonable extent considering the availability of information; includes the items required by Minn. R. 7850.3700, subp. 4; and was prepared in compliance with the procedures in Minn. R. 7850.3700.

4. Xcel Energy gave notice as required by Minn. Stat. § 216E.03, subds. 3a and 4, and Minn. R. 7850.2100, subps. 2 and 4.

5. EFP gave notice as required by Minn. Stat. § 216E.03, subd. 6, Minn. R. 7850.2300, subp. 2, and Minn. R. 7850.2500, subps. 2, 7, 8, and 9.

6. Public hearings were conducted in the community near the proposed high voltage transmission line routes. Xcel Energy and EFP gave proper notice of the public hearings, and the public was given the opportunity to speak at the hearings and to submit written comments. All procedural requirements for the Route Permit have been met.

Ex. 15 (Certificate of Service of Environmental Assessment on Public Agencies); Ex. 16 (Affidavit of Publication of Notice of Public Hearing and Availability of Environmental Assessment); Ex. 17 (Certified Mail Receipts regarding Notice of Public Hearing and Availability of Environmental Assessment); Ex. 18 (Publication in EQB Monitor of Notice of Public Hearing and Availability of Environmental Assessment).

[290] Minn. R. 7850.3900, subp. 2.

[291] *See* Ex. 13.

[292] Ex. 5 at 6 (Order Accepting Application as Complete).

7. The Proposed Route satisfies the route permit criteria set forth in Minn. Stat. § 216E.03, subd. 7, and Minn. R. 7850.4100.

8. The Proposed Route does not present a potential for significant adverse environmental effects pursuant to the Minnesota Environmental Rights Act or the Minnesota Environmental Policy Act (with the mitigation measures recommended in this Report).

9. The Proposed Route is the best alternative on the record for the double-circuit 115 kV transmission line between the Black Dog Substation and the Savage Substation.

10. Undergrounding and the use of N-structures for the portion of the Proposed Route west of I-35W are not appropriate mitigation strategies for the Project. The costs of these measures are substantial and the benefits uncertain, given that the impacts they seek to mitigate are prospective, difficult to quantify, and estimated to be minimal to moderate in extent.

11. The use of weathering steel structures and structures with specialized davit arms agreed upon by Xcel Energy and the City of Burnsville are reasonable and appropriate to mitigate the aesthetic impact of the portion of the Proposed Route west of I-35W.[293] Other mitigation strategies as detailed in the Findings of Fact above are also reasonable and appropriate.[294]

12. It is appropriate for the Route Permit to require Xcel Energy to consult and coordinate with agencies and local units of government in planning and constructing the Project, including the U.S. Fish and Wildlife Service, the Minnesota Department of Natural Resources, the Minnesota Department of Transportation, the City of Burnsville, and Dakota County.

13. It is appropriate for the Route Permit to require Xcel Energy to obtain all required local, state, and federal permits and licenses, to comply with the terms of those permits or licenses, and to comply with all applicable rules and regulations.

14. It is also appropriate to require Xcel Energy to consult and coordinate with the City of Burnsville regarding floodplain and shoreline issues.[295]

15. The evidence in the record demonstrates that the Route Permit should be granted for the 115 kV transmission lines along the Proposed Route.

16. Any Findings more properly designated Conclusions are adopted as such.

17. The attached Memorandum is incorporated in these Conclusions.

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[293] *See* Findings of Fact 101 and 103.
[294] *See* Findings of Fact 90, 116, 147, 155, 176, 186, 197, and 204.
[295] See Finding of Fact 166.

Based upon these Conclusions, the Administrative Law Judge makes the following:

RECOMMENDATIONS

The Commission issue to Xcel Energy the following permit for the Project:

A Route Permit for a high voltage transmission line with a route, route width and anticipated alignment as described herein and depicted in Maps B-2 to B-9 of the Environmental Assessment, between the Black Dog Power Plant and the Savage Substation in the City of Burnsville, that further requires implementation of the mitigating measures set forth in Findings of Fact 90, 101, 103, 116, 147, 155, 176, 186, 197, and 204, and consultation with the City in accordance with Finding 166 and the attached Memorandum.

January 10, 2013

s/Barbara L. Neilson
BARBARA L. NEILSON
Administrative Law Judge

NOTICE

Under the Commission's Rules of Practice and Procedure (Minn. R. 7829.1000 to 7829.3200), exceptions to this Report, if any, by any party adversely affected must be filed within 15 days of the filing date hereof with the Executive Secretary of the PUC, 350 Metro Square Building, 121 Seventh Place East, St. Paul, Minnesota, 55101-2147. Exceptions must be specific, relevant to the matters at issue in this proceeding, and stated and numbered separately. Proposed Findings of Fact, Conclusions, and Order should be included, and copies thereof served upon all parties.

The Commission shall make its determination on the application for the Route Permit after the period to file Exceptions as set forth above, or after oral argument, if such is requested and conducted in this matter.

Notice is hereby given that the Commission may accept, modify, condition, or reject this Report and that this Report has no legal effect unless expressly adopted by the Commission.

MEMORANDUM

Overall, the Administrative Law Judge recommends that the Route Permit for the Proposed Route be granted. The Project will appropriately replace deteriorating structures, make use of existing rights-of-way, and minimize adverse effects on humans

and the environment while improving electric power reliability. The Findings and Conclusions above provide a sufficient basis for this recommendation. This Memorandum will discuss several additional matters that are not incorporated in the Findings but were discussed in the post-hearing submissions of Xcel Energy and the EFP Unit.

Xcel Energy noted in its post-hearing filings that it now anticipates that it will begin construction on the Project in the second quarter of 2013 and complete the Project by the fourth quarter of 2013.[296] Xcel Energy indicated that it has no objection to utilizing all weathering steel structures, as the City of Burnsville requested. The Company also agrees to the use of specialized davit arm structures west of I-35W as requested by the City, but wishes to be allowed flexibility in determining the types of structures that will be used for the portion of the Project east of I-35W.[297]

In the comments it filed regarding the Proposed Project, the City of Burnsville asked Xcel Energy to provide additional information regarding the extent of vegetation clearing that would be done for the Project and the specific locations where it would occur. EFP recommended that Xcel meet with the City following pre-construction surveying to share its plans with respect to vegetation removal for the Project. Xcel Energy responded that it would be agreeable to meeting with the City prior to beginning construction and providing the City with copies of a vegetation removal plan and a final Plan and Profile. The Company also provided more information in its post-hearing briefs regarding its vegetation management practices for transmission projects.

The City also asked that Xcel provide a diagram of a davit arm structure with the distribution underbuild added. The Company attached photographs and a diagram of a double circuit 115 kV structure with distribution underbuild to its initial post-hearing brief.[298] However, it noted in its reply brief that these attachments do not represent the proposed structures along 118th Street and Golf Drive because the existing distribution in this area will likely be placed underground.[299]

The City further requested that the right-of-way for the Project be reduced from 100 feet to 50 feet, and contended that Xcel Energy has proposed a 50-foot right-of-way on the Hiawatha Project and other 115 kV projects in the metro area. The City expressed concern that the proposed right-of-way would affect future road alignments on the west end of the Project Area and increase the aesthetic impacts by expanding the area where vegetation would have to be cleared. In its initial post-hearing brief, Xcel Energy asserted that the double circuit single-pole structures require a right-of-way of 100 feet in order to meet NESC clearance requirements and provide the area needed by the Company for access to and maintenance of the line. The Company further argued that, if the right-of-way was reduced to 50 feet, spans between structures would

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[296] *See* Proposed Findings of Fact Nos. 45 and 46 (Oct. 19, 2012) (eDocket Document No. 201210-79754-03).
[297] Xcel Energy's Initial Brief at 13 (Oct. 19, 2012) (eDocket Document No. 201210-79754-02).
[298] *Id*. at 14 and Attachment 2. Xcel Energy further requested that Attachment 2 to its initial brief be accepted into the record as a late-filed exhibit. It has been marked and received as Exhibit 22.
[299] Xcel Energy's Reply Brief at 4 (Nov. 2, 2012) (eDocket Document No. 201211-80330-01)..

be reduced to 200-300 feet (rather than 500-800 feet, as proposed in the Application), more structures would be required to cover the same distance, and the Project's costs and potential aesthetic impacts would increase.[300]

Xcel Energy indicated in its post-hearing submissions that it plans to meet with the City of Burnsville to discuss ways to mitigate impacts to the potential bike trail and recreational features that may be constructed as part of the City's long-term plan. The Company also stated that it is willing to request the City's comments prior to submitting a Plan and Profile for the Project.[301]

The City asserted that it typically requires applicants with development proposals to cover any public expenses incurred during the review and processing of an application, and asked that Xcel be required to cover the City's costs for reviewing the Route Permit.[302] The Administrative Law Judge is not aware of any authority for requiring such reimbursement for review conducted as part of a Commission proceeding.

Finally, Xcel Energy and EFP raised issues in their post-hearing submissions regarding the application of the City's floodplain and shoreland ordinances. The City of Burnsville requested that the Project be reviewed by the City or the MnDNR for impacts and compliance with the City's shoreland and floodplain standards, and noted that, for the City to comply with FEMA floodplain requirements, the Project must result in no increase in the floodway.[303] In response, Xcel Energy contended that the Project is in compliance with MnDNR floodplain regulations because the calculated maximum incremental rise in water level due to the Project is 0.00 feet, and a Barr Engineering floodplain analysis using the HEC-RAS model determined that the proposed transmission structures would have 0.00 foot impact on the 100-year flood level. . The Company argued that the City of Burnsville's more restrictive floodplain regulations set forth in its Zoning Code constitute zoning provisions enforced through a conditional or interim use permit process and, as such, are preempted by the Commission's Route Permit under Minn. Stat. § 216E.10. Xcel asserted that the Commission has the authority under the statute to evaluate the floodplain effects of the Project and to issue a Route Permit. In the alternative, Xcel Energy maintains that, even if the City's zoning regulations applied to the Project, they do not preclude construction of the Project because the Project will not result in a maximum incremental rise in water level greater than 0.00 feet.[304]

EFP staff argued that it is the responsibility of the City of Burnsville to determine how its ordinances are applied to a particular project, and the Commission's Order should not include a finding that the Project is in compliance with those ordinances. The EFP Unit agrees that the Commission's route permit supersedes and preempts all regulations and ordinances adopted by local units of government under Minn. Stat.

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[300] Xcel Energy's Initial Post-hearing Brief at 14.
[301] *Id*. at 15-16.
[302] City of Burnsville's Comments (Sept. 28, 2012) (eDocket Document No. 201210-79147-01).
[303] *Id*.
[304] Xcel Energy's Initial Post-hearing Brief at 16-18; Xcel Energy's Reply Brief at 1-3.

§ 216E.10, subd. 1. However, EFP points out that those who receive a route permit from the Commission must obtain all required state permits, and asserts that the fact that federal (floodplain) and state (shoreland) permitting authority has been delegated to the City of Burnsville raises questions about whether the City's ordinances are federal or state "permits" that must be obtained, or whether they are local ordinances that are preempted by the Commission's route permit. The EFP Unit acknowledged that the intent of the floodplain and shoreland programs could be frustrated if the issuance of a Route Permit by the Commission preempts local floodplain and shoreland ordinances, and that the responsibility of the Commission to ensure continuing electric power system reliability under Minn. Stat. § 216E.02, subd. 1, could be frustrated by the application of local floodplain and shoreland ordinances. As a middle course of action, EFP recommended that Xcel Energy be required to apply to the City for review of the Project under the City's floodplain and shoreland ordinances. The City could then review the Project to ensure that the floodplain and shoreland ordinances are met, without permitting the Project, and inform Xcel of what, if any, steps it could take to make the project more consistent with floodplain and shoreland requirements.[305]

The Administrative Law Judge believes that it would be reasonable to require Xcel Energy to consult and coordinate with the City of Burnsville as it finalizes its plan and profile drawings**,** and consider any suggestions the City makes that it contends would make the project more consistent with floodplain and shoreland requirements. Such an approach would allow the City to evaluate the Project's shoreland and floodplain implications at an early stage and provide feedback to the Company. It would also give the City and Xcel Energy an opportunity to agree upon an approach that is satisfactory to both of them, without interfering with the Commission's ultimate authority to determine whether issuance of a Route Permit is appropriate.

B. L. N.

[305] EFP's Initial Comments at 18-20 (Oct. 19, 2012) (eDocket Document No. 201210-79732-01); EFP's Reply Comments at 5 (Nov. 2, 2012) (eDocket Document No. 201211-80313-01)

MINNESOTA OFFICE OF ADMINISTRATIVE HEARINGS

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January 10, 2013

Burl W. Haar
Executive Secretary
MN Public Utilities Commission
350 Metro Square Building
121 Seventh Place E
St. Paul, MN 55101

Re: ***In the Matter of the Route Permit Application for the Black Dog to Savage 115 kV Transmission Line Project in Dakota County, Minnesota***
OAH Docket No. 11-2500-22932-2; PUC No. E002/TL-11-795

Dear Mr. Haar:

Enclosed herewith and served upon you by mail is a copy of the Administrative Law Judge's **FINDINGS OF FACT, CONCLUSIONS AND RECOMMENDATION** in the above-entitled matter. The original Report together with the official record will be sent to you under separate cover. Our file in this matter is now closed.

Sincerely,

s/Barbara L. Neilson

BARBARA L. NEILSON
Administrative Law Judge

Telephone: (651) 361-7845

BLN:dc
Enclosures
cc: Service List (attached)

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS
ADMINISTRATIVE LAW SECTION
600 NORTH ROBERT STREET
PO BOX 64620
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CERTIFICATE OF SERVICE

In the Matter of the Route Permit Application for the Black Dog to Savage 115 kV Transmission Line Project in Dakota County, Minnesota	OAH Docket No. 11-2500-22932-2 PUC No. E002/TL-11-795

Denise Collins, certifies that on the 10th day of January, 2013, she served a true and correct copy of the attached **FINDINGS OF FACT, CONCLUSIONS AND RECOMMENDATION** by eService, (in the manner indicated below) to the following individuals:

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