OAH 8-2500-20825-2

MPUC Docket Nos. E-017, E-015, ET-6 / TL-07-1327

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS

FOR THE PUBLIC UTILITIES COMMISSION

In the Matter of the Application for a Route Permit for the Bemidji – Grand Rapids 230kV Transmission Project	**FINDINGS OF FACT, CONCLUSIONS AND RECOMMENDATIONS**

This matter came before Administrative Law Judge Eric L. Lipman during a series of public and evidentiary hearings on April 21, 22 and 23, 2010, in Blackduck, Bemidji, Cass Lake, and Deer River, Minnesota.

The following persons noted their appearance: Thomas Erik Bailey, Briggs and Morgan, appeared on behalf of the Applicants Otter Tail Power Company, Minnesota Power and Minnkota Power Cooperative, Inc. (Applicants). Karen Finstad Hammel, Assistant Attorney General, appeared on behalf of the Department of Commerce Office of Energy Security (OES). Bret Eknes, Minnesota Public Utilities Commission, appeared on behalf of the Public Utilities Commission (the Commission or MPUC).

The hearing record closed following the receipt of the Final Environmental Impact Survey on September 2, 2010.

STATEMENT OF THE ISSUE

Have the Applicants satisfied the criteria set forth in Minnesota Statutes § 216E.03 and Minnesota Rules Chapter 7850 for a Route Permit for the Bemidji to Grand Rapids 230 kV Transmission Line Project?

Based upon the Findings and Conclusions that follow below, the Administrative Law Judge makes the following:

RECOMMENDATIONS

The Minnesota Public Utilities Commission should:

1. Determine that all relevant statutory and rule criteria necessary to obtain a Route Permit have been satisfied and that, on this record, there are no statutory or other requirements that preclude granting a Route Permit.

2. Grant a Route Permit to Applicants, on behalf of themselves and Xcel Energy and Great River Energy, for:

(a) The Applicants' Preferred Route (also denominated as "Route 4");

(b) Modifications and additions to three existing substations (Wilton Substation, Cass Lake Substation, and Boswell Substation) to accommodate the new transmission line facilities; and

(c) A new 115 kV breaker station at Nary Junction.

3. Require the Applicants to undertake such construction and maintenance practices so as to minimize the impacts to natural resources within the Project Area.

4. Require the Applicants 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.

5. Require the Applicants to take those actions necessary to implement the Commission's Orders in this proceeding.

Based upon the hearing record, the Administrative Law Judge makes the following:

FINDINGS OF FACT

A. Introduction:

1. The proposed project is a 230 kV transmission line that would run primarily along existing rights-of-way between the Wilton Substation (just west of Bemidji, Minnesota), and the Boswell Substation in Cohasset, Minnesota.[1]

2. The proposed line would traverse portions of Itasca, Cass, Hubbard, and Beltrami counties.[2]

3. The Chippewa National Forest (CNF), the Leech Lake Reservation (LLR), the Mississippi River, and the communities of Cass Lake, Bena, Ball Club, and Deer River are the major geographic features within the project area. Also there are several primary linear features located west to east within the project area, including: U.S. Highway 2, BNSF Railroad, Great Lakes Gas Transmission Company natural gas

[1] Ex. 24 (Route Application) at 1-1.

[2] Ex. 29 (Lindholm Direct) at 7; *see also* Ex. 24 (Route Application) at 6-2 to 6-8.

pipelines (Great Lakes), Enbridge Pipelines LLC crude oil pipelines (Enbridge), and several 69 kV and 115 kV power lines.[3]

4. Applicants initially proposed two route alternatives, both of which are approximately 68 miles long:

- Route 1 – This route generally follows the Great Lakes pipeline right-of-way from the Wilton Substation to just east of Deer River, where it then follows a Minnesota Power 115 kV transmission line to the Boswell Substation. There are three alternative route sections for Route 1: 1A, 1B, and 1C.

- Route 2 – This alternative generally follows U.S. Highway 2 and the pipeline rights-of-way of Enbridge for its entire length between the Wilton Substation and Boswell Substation. There is one alternative route section for Route 2: 2C.[4]

5. Following analysis of information developed through the Draft Environmental Impact Statement (DEIS) scoping process, the Applicants urged a combination of Routes 1 and 2 to establish Applicants' Preferred Route. The west and east ends of Route 4 primarily follow Route 1, while the central portion of Route 4 follows Route 2.[5]

6. In the Final Environmental Impact Statement (FEIS), the Applicants' Preferred Route is denominated and assessed as "Route 4."

7. Based upon discussions among various governmental agencies and other stakeholders, the OES concluded that the only route alternative that warranted study in addition to Routes 1 and 2 was a route in the North Corridor that avoids the boundaries of the Leech Lake Band of Ojibwe Reservation. This route was denominated as "Route 3." Route 3 bypasses the Reservation by taking a route from Bemidji which arcs around the Reservation's northwestern, northern, and northeastern boundaries to Cohasset. This route is approximately 116 miles long and generally parallels existing 69 kV power line rights-of-way between Bemidji, Blackduck, Deer River, and Grand Rapids, Minnesota.[6]

[3] Ex. 29 (Lindholm Direct) at 7; *see also* Ex. 24 (Route Application) at 6-2 to 6-8.

[4] Ex. 29 (Lindholm Direct) at 8; *see also* Ex. 24 (Route Application) at 6-2 to 6-8.

[5] Ex. 23; *see also* Ex. 29 (Lindholm Direct) at 9-10.

[6] Ex. 29 (Lindholm Direct) at 9.

B. Summary of Written Public Comments:

8. Lynné Holt, of Bemidji, Minnesota, expressed concern as to the environmental impact and costs associated with the Proposed Route 3 as compared to Routes 1 and 2. She opposes selection of Route 3.

9. Robert Harper, a Forest Supervisor for the Chippewa National Forest, outlined a set of considerations when granting special use permits for each proposed route. In the view of the Forest Service, Route 1 is the least desirable alternative because of its impacts on the Pike Bay Experimental Forest and to tribal lands of spiritual and cultural significance. Route 2 along the Enbridge pipeline impacts the fewest acres of wetlands, but would have extensive scenic impacts. Route 3 avoids all known archaeological sites and most tribal land, but has the greatest impact on wetlands and other biological resources.

10. Dean Sedgwick, of Spring Lake, Minnesota, questioned the cost of the improvements and the underlying need for additional transmission lines. He opposes each of the proposed alternatives and requested additional information regarding cost impacts to consumers.

11. Sally Sedgwick, of Spring Lake, Minnesota, opposed Proposed Route 3. She expressed concern that ratepayers would be ask to underwrite more transmission lines than are necessary. Likewise, she expressed concern over the impacts of the proposed line on wildlife, property values and scenic tourism.

12. Gary and Juanita Metheny, of Blackduck, Minnesota, expressed concern that their family farm would be taken from them, and that they would not be paid the true value of their property, if Route 3 were selected.

13. James and Karol McCracken, of Bemidji, Minnesota, expressed the view that among the various alternatives, Route 3 would have the greatest negative impacts upon natural resources. Because Route 3 would be longer than the alternatives and use a far greater amount of undeveloped land, they oppose the selection of Route 3.

14. Linda Bathen, landowner on Long Lake, opposes the selection of Route 3 due to its greater cost and length, and lower efficiency, when compared to Proposed Routes 1 and 2.

15. Joanne Mulbah, of Cass Lake, Minnesota, expressed concern for the environmental impacts the lines would have on the Chippewa National Forest and surrounding ecosystems.

16. Dan Gartrell, on Long Lake in Turtle River Township, Minnesota, expressed support for selection of either Proposed Route 1 or 2 over Route 3. In Mr. Gartell's view, selection of either Route 1 or 2 sharply reduces the amount of rights-of-way that are required and the range of potential conflicts.

17. Jane Johnson opposes the selection of Route 3 due to its greater cost, length and amount of rights-of-way, when compared to Proposed Routes 1 and 2.

18. Richard Ludtke, of Bemidji, Minnesota, argued that because local energy load needs were the most pressing in the area near Cass Lake, that the line which most directly served that need – Proposed Routes 1 or 2 – should be selected. Further, Mr. Ludtke opposed Proposed Route 3 due to its greater cost, length and environmental and community impacts.

19. Diane Plath, on behalf of Donald and Kristen Wagner of Bemidji, Minnesota, expressed opposition to Proposed Route 3 because it would make their home uninhabitable and oblige them to relocate.

20. Jack Haugen, a Long Lake seasonal resident, expressed opposition to Proposed Route 3 due to its length and expense.

21. Dave Baughn, of Bemidji, Minnesota, expressed support for Proposed Routes 1 or 2 over Route 3, because of the greater expense associated with Route 3.

22. Gerald and Eldora Solheim, of Bemidji, Minnesota, expressed support for a route along U.S. Highway 2 adjacent to existing transmission lines but opposed siting new lines along current pipeline rights-of-way. The Solheims own property along the pipeline right-of-way. They assert that the landowners whose land is traversed by the existing Enbridge pipeline will be further harmed, and unjustly burdened, if the transmission line is located on an adjacent right-of-way.

23. Rita Velat, of Arcata, California, expressed opposition to the project due to the effect that routing transmission lines may have on the value of her property. Ms. Velat reflected on past uses of eminent domain to construct power lines on her property and was concerned about further devaluation of her property.

24. Sheldon Johnson, Chair of the Mississippi River Parkway Commission of Minnesota, expressed the commission's concerns that the qualities of the Minnesota Great River Road (archaeological, cultural, historic, natural, recreational, and scenic) would be negatively affected by the CapX 2020 project. The Commission also requested a video visual impact simulation of the proposed lines.

25. Keith Pommerening, of Bemidji, Minnesota, expressed support for Proposed Route 2. In Mr. Pommerening's view, Route 2 is the most direct route; it effectively utilizes existing easements; and, because of its proximity to U.S. Highway 2, provides easy access to the lines by utility maintenance crews.

26. Jon Eggers, of Blackduck, Minnesota, expressed opposition to Proposed Route 3. Mr. Eggers questioned the need for any additional transmission lines. If

additional lines are needed, however, Mr. Eggers urges selection of a routing that would utilize currently-held easements along U.S. Highway 2.

27. Jamie Schrenzel, Principle Planner of the Environmental Review Unit of the Minnesota Department of Natural Resources, reviewed the DEIS and determined Proposed Route 2 to have the least potential for significant resource impacts. The DNR, in its report to the OES, requested further analysis of impacts to waterfowl and water birds from the proposed routes and special attention to protection of endangered species.

28. Bruce Johnson, Director of the Division of Resource Management for the Leech Lake Band of Ojibwe, outlined factors to consider for each proposed route. These considerations include minimizing interference with tribal land, protecting critical habitat, adhering to the Forest Plan, and minimizing impacts on wetlands, forested areas, and other biological resources. In Mr. Johnson's view, Proposed Route 1 was the least desirable because it affects areas of spiritual and cultural significance for the Leech Lake Band of Ojibwe. Proposed Route 2 would affect the least amount of water basins, but, in Mr. Johnson's view, would negatively impact the access by tribal members to these resources. Proposed Route 3, concludes Mr. Johnson, mostly avoids tribal lands and would parallel existing lines.

29. Dale and Jane Grasdalen, of Bemidji, Minnesota, expressed concern that adding a power line over the existing pipeline on their property would harm both the financial and scenic values of their property. Specifically, the Grasdalen's requested adequate compensation and time to relocate should the selected route cross their property.

30. Mike Schmid, of Cass Lake, Minnesota, expressed concern that adding a power line over the existing pipeline on his property would harm the financial and scenic values of his property as well as present possible health risks. He requested that any approved right-of-way not be larger than necessary. Mr. Schmid also questioned the fairness of burdening landowners who are now hosting a pipeline with another set of utility rights-of-way.

31. Craig Affeldt, Supervisor of the Environmental Review and Feedlot Section of the Minnesota Pollution Control Agency, provided the Agency's comments on the Draft Environmental Impact Statement. These comments highlighted features of the DEIS that should be clarified or where additional or more appropriate planning is required.

C. Summary of Testimony at the Public Hearings:

Following brief presentations from Messrs. Al Koeckeritz and Jason Weiers, of Otter Tail Power Company, Bob Lindholm, a manager in the Environmental Services Department at Minnesota Power, and Dave Seykora of the Minnesota Department of

Transportation, at the beginning of each hearing, testimony was received from members of the public.

32. Harold and Jackie Ferdig, of Blackduck, Minnesota, inquired about the features of Route 3, the width of the proposed right-of-way and the easement negotiation process.[7]

33. Gerald Zeise of Blackduck, Minnesota, expressed concerns over the health impacts and the impacts to property value following installation of a transmission line along Route 3.[8]

34. Troy Depew, of Hines, Minnesota, sought to update the Applicant's maps to show building sites added since Route 3 was initially selected. During a later colloquy, Mr. Depew also inquired about the process for developing Route 3.[9]

35. Ken Michalicek, of Blackduck, Minnesota, expressed concern over the number of residences that would be impacted by the right-of-way along Route 3.[10]

36. Mark Michalek, of Blackduck, Minnesota, inquired as to the siting and right-of-way selection process.[11]

37. Jerry Larson, of Blackduck, Minnesota, expressed support for improvements to the local energy infrastructure through the proposed Project.[12]

38. Dean Sedgwick, of Spring Lake, Minnesota inquired as to the criteria for selecting routes and particularly whether the proposed routes offered the "least cost and most reliable service." During a later colloquy, Mr. Sedgwick also inquired as to which reliability standards were considered when selecting the alternative routes.[13]

39. Sally Sedgwick, of Spring Lake, Minnesota, inquired about notice to land owners and negotiation and maintenance of rights-of-way. She likewise expressed concern as to the cost and impacts of Route 3.[14]

---

[7] Hearing Transcript (Tr.), (Volume I), at 39-42.

[8] *Id*. at 42-51.

[9] *Id.* at 51-54, 101-05.

[10] *Id*. at 55-59.

[11] *Id*. at 60-65.

[12] *Id*. at 65.

[13] Tr. (Vol. I), at 66-82, 94-99.

[14] *Id*. at 83-91.

40. Gerald Zeise, of Blackduck, Minnesota, inquired about the development of alternatives, the process for selecting the final route and the impact that route selection would have on local electricity rates.[15]

41. Jackie Ferdig, of Blackduck, Minnesota, inquired about set-back distances and health risks for the proposed line.[16]

42. Peter Guggenheimer, of Bemidji, Minnesota, expressed concerns about the property devaluation and environmental impact of Route 1 as compared to Route 2.[17]

43. Diane Plath, of Bemidji, Minnesota, on behalf of her brother and herself, expressed concerns over the costs of Route 3 and its potential impact on her parents' burial site, which abuts Route 3. She submitted a letter from her brother that was marked as Exhibit D.[18]

44. Jarrett Lish, of Bemidji, Minnesota, urged that the proposed route could utilize existing rights-of-way near his property so as to avoid relocation of his residence and that of his neighbor. He identified his home on a map that was received as Exhibit E.[19]

45. Sharon Lish, of Bemidji, Minnesota, questioned why her home was not previously identified on the maps in use at the hearing. Her home is identified on Exhibit E.[20]

46. Lester Hiltz, of Bemidji, Minnesota, expressed concern as to collocating natural gas and electric transmission lines. He urged the Applicants to select a route that avoided the pipeline altogether. Mr. Hiltz likewise inquired as to the effects of electric and magnetic fields (EMF). He is concerned with the impacts that the transmission will have upon the value of his business and property. Noting the limitations of a "one-time" payment for the right-of-way easement, he urged a system under which the Applicants would make a series of ongoing payments to landowners for rights-of-way.[21]

47. Doug Bjerke, of Bemidji, Minnesota, expressed concern about line losses and costs associated with installing and maintaining Route 3. Mr. Bjerke was also

---

[15] *Id.* at 92-93.

[16] *Id.* at 99-101.

[17] Tr. (Vol. II), at 28-31.

[18] *Id*. at 31-33.

[19] *Id*. at 34-39.

[20] *Id*. at 39-40.

[21] Tr. (Vol. III), at 29-38.

concerned that Route 3 would not address the power needs of residents in the Cass Lake area.[22]

48. Jerry Solheim, of Bemidji, Minnesota, expressed concern about property devaluation and expressed interest in receiving annual or monthly payments instead of a one-time payment. He likewise inquired as to the possibility of undergrounding the transmission wires. During a later colloquy, Mr. Solheim also expressed concern over the impacts of EMF.[23]

49. Karol Hendricks-McCracken, of Bemidji, Minnesota, expressed concerns over the environmental impacts of Route 3.[24]

50. Roy Williams, of Bemidji, Minnesota, inquired about the process for selecting rights-of-way and expressed concern over the amounts of line losses associated with Route 3.[25]

51. Scott Dingman, of Bemidji, Minnesota, expressed concern about the costs, the line losses, and the environmental impact of Route 3. He also expressed interest in receiving ongoing payments as a way of compensating him for the impacts to his land, instead of a one-time, lump-sum payment.[26]

52. Shirley Moe, of Bemidji, Minnesota, expressed concern as to the impact that proposed Route 1 would have on the value of her property. She identified her property on Sheet 3 of Exhibit 23 and proposed an alternative route around the parcel.[27]

53. Keith Pommerening, of Bemidji, Minnesota, inquired about the safety of collocating transmission lines near pipelines.[28]

54. Dan Reimer, of Cass Lake, Minnesota, identified his property on Sheet 20 of Exhibit 23. Mr. Reimer expressed concerns about the siting of the line and the potential disruption to a center-pivot irrigation system. He likewise expressed concerns as to the potential impacts to a nearby nesting area for bald eagles.[29]

---

[22] *Id.* at 39-45.

[23] *Id.* at 45-51, 65-67.

[24] *Id.* at 52-54.

[25] *Id.* at 54-56.

[26] Tr. (Vol. III), at 57-63.

[27] *Id.* at 63-65, 78-79.

[28] *Id.* at 67-74.

[29] Tr. (Vol. IV), at 31-35.

55. Cliff Westland, of Cass Lake, Minnesota, reiterated the concerns expressed by Mr. Reimer.[30]

56. Greg Chester, of Cass Lake, Minnesota, inquired as to the features of the Applicant's Route and expressed concern over collocating transmission line and pipeline rights-of-way. He likewise expressed concern as to the impacts to human health from the proposed transmission lines.[31]

57. Wanda Arenz, of Cass Lake, Minnesota, expressed concern as to the environmental impacts of the proposed lines and the impacts of practices for maintaining the rights-of-way.[32]

58. Barry Babcock, of Laporte, Minnesota, spoke first on behalf of Elizabeth Schurman, a member of the Leech Lake Band. Ms. Schurman was concerned about the impacts to human health from the project. As a member of the Leech Lake Band, Ms. Schurman was also concerned with the impacts to animal habitat, particularly of the habitat of eagles. Ms. Schurman also expressed concerns about eminent domain and tribal sovereignty. On his own behalf, Mr. Babcock urged conservation as an alternative to development of new transmission lines and generation plants. Mr. Babcock also expressed concern as to the environmental and health impacts of the Project.[33]

59. George Berbee, of Cohasset, Minnesota, owns property along the north side of Highway 2. He urged that the selected route would follow the existing rights-of-way on the south side of Highway 2.[34]

60. Norley Hansen, of Cohasset, Minnesota owns property along the north side of Highway 2, through which two pipeline corridors pass. He requested that the selected route remain on the south side of Highway 2 on land owned by Minnesota Power, one of the applicants.[35]

D. Certificate of Need:

61. On March 17, 2008, Otter Tail Power Company (Otter Tail Power), Minnesota Power, and Minnkota Power Cooperative, Inc. (Minnkota Power), collectively referred to as "the Applicants," on behalf of themselves and Northern States Power Company, a Minnesota corporation (Xcel Energy) and Great River Energy, a Minnesota cooperative association, filed an application with the Minnesota Public Utilities Commission (Commission) for a Certificate of Need to construct a 230 kV transmission

---

[30] *Id*. at 35-37.

[31] *Id*. at 38-43 and 62-63.

[32] *Id*. at 44-46.

[33] *Id*. at 47-61.

[34] Tr. (Vol. V), at 25-26.

[35] *Id*. at 27-29.

line between Bemidji, Minnesota and Grand Rapids, Minnesota (Bemidji-Grand Rapids Line or the Project). The Applicants proposed locating the Project along existing rights-of-way within a corridor that runs from Bemidji east to Grand Rapids.[36]

62. The Certificate of Need Application explained that the Project is needed to effectively meet projected future customer demand in the Bemidji area in north central Minnesota. The Bemidji area includes the communities from Bagley, Minnesota to the west, Walker, Minnesota to the south, and Blackduck, Minnesota to the northeast, as well as a large portion of the Leech Lake Reservation to the east.[37]

63. On July 14, 2009, the Commission granted Applicants a certificate of need for the Project.[38]

E. Route Permit Application:

64. On June 4, 2008, Otter Tail Power, Minnesota Power, and Minnkota Power filed an application for a Route Permit for the Bemidji to Grand Rapids 230 kV Transmission Line Project on behalf of the Applicants.[39]

65. On June 30, 2008, the Commission found the Route Permit Application complete and authorized the Application to be processed under the full review process (Minn. R. 7850.1700- 7850.2700).[40]

66. On July 2, 2008, the OES appointed eight persons to an Advisory Task Force that would render advice on the issues to be addressed in the Environmental Impact Statement.[41]

67. Public information meetings on the Project and the scope of its environmental review by OES were held in Blackduck, Cass Lake, Deer River, Bemidji, and Walker, Minnesota on August 11-15, 2008. Further, the original deadline for public comments on the Project and environmental review was extended to September 30, 2008.[42]

---

[36] *In the Matter of the Application of Otter Tail Power Company, Minnesota Power, and Minnkota Power Cooperative, Inc. for a Certificate of Need for a 230 kV Transmission Line from Bemidji to Grand Rapids, Minnesota ("CON Docket")*, Docket No. E017, E015, ET6/CN-07-1222, Application for a Certificate of Need for a 230 kV Transmission Line and Associated System Connections from Bemidji to Grand Rapids, Minnesota ("CON Application") at 1 (Mar. 17, 2008).

[37] *Id*.

[38] *CON Docket*, Finding that Minnesota Power, Minnkota Power Cooperative, and Otter Tail Power Company have met statutory and rule criteria for a certificate of need and granting a certificate of need to for the 230 kV transmission line between the Wilton and Boswell Substations (July 14, 2009).

[39] Ex. 24.

[40] Ex. 4.

[41] Ex. 6 at 1.

[42] Exs. 5, 7, and 8.

68. On September 24, 2008, the Advisory Task Force issued its report.[43]

69. On April 2, 2009, OES issued its Notice of Scoping Decision and Intent to Prepare an Environmental Impact Statement for the Project jointly with the Rural Utilities Service of the U.S. Department of Agriculture (RUS). Minnkota Power is seeking federal funding for its portion of the Project from the RUS.[44]

70. The closing date on the period for intervention in this matter was February 10, 2010. *In the Matter of the Application for a Route Permit for the Bemidji – Grand Rapids 230kV Transmission Project*, Second Prehearing Order, OAH Docket No. 8-2500-20825-2 (December 28, 2009).

71. On February 11, 2010, OES issued its Notice of Revised Environmental Impact Statement Scoping Decision.[45]

72. On February 23, 2010, OES issued its Notice of Availability of Draft Environmental Impact Statement (DEIS) and Notice of Public Information Meetings. The DEIS public information meetings were held on March 16-18 in Bemidji, Deer River, Blackduck, and Cass Lake, Minnesota.[46]

73. Combined public and evidentiary hearings on the Project were held on April 21 through April 23, 2010 in Blackduck, Bemidji, Cass Lake, and Deer River, Minnesota.[47]

- The post-hearing public comment period closed on May 3, 2010.[48]

- On August 8, 2010, NoCapX 2020 and United Citizens Action Network petition for intervention as parties in this matter and for an adjustment of the timelines set forth in the Third and Fourth Prehearing Orders. The undersigned denied the requests on the grounds that the requests were untimely and the requested relief unnecessary. *In the Matter of the Application for a Route Permit for the Bemidji – Grand Rapids 230kV Transmission Project*, Order on Intervention, OAH Docket No. 8-2500-20825-2 (August 12, 2010).

74. On September 2, 2010, OES issued its Notice of Availability of Final Environmental Impact Statement (FEIS).[49]

---

[43] Ex. 6.

[44] Ex. 10.

[45] Ex. 13.

[46] Ex. 15.

[47] Ex. 16.

[48] *See, In the Matter of the Application for a Route Permit for the Bemidji – Grand Rapids 230kV Transmission Project*, Third Prehearing Orders, OAH Docket No. 8-2500-20825-2 (March 16, 2010).

[49] *See,* Ex. 35A (E- Docket No. 20109-54088-01) (The undersigned denominated the FEIS as late-filed exhibits 35A through 35D).

F. Project and Associated Facilities 230 kV Transmission Line:

75. The Project will use predominantly H-frame 230 kV structures. These structures are suitable for single-circuit construction in rugged terrain and for areas which require longer spans – such as areas that are adjacent to wetlands or waterways. H-frames will range in height between 70 to 90 feet and be placed approximately 600 to 1,000 feet apart. A typical H-frame structure has two 24- to 36-inch diameter poles placed approximately 19.5 feet apart from each other.[50]

76. Single-pole self-supporting structures may also be used for single circuit portions of the transmission line in areas where the available width of the right-of-way is limited by existing infrastructure or development. While Applicants do not know precisely how wide the right-of-way will need to be in these areas, for planning purposes, they are using a right-of-way width of 75 feet.[51]

77. The height of single-pole single circuit structures would range from approximately 80 to 100 feet, with the span between structures approximately 400 to 800 feet apart.[52]

78. For each phase of the 230 kV circuit, 954 kcmil aluminum conductor steel reinforced (ACSR) is proposed. The use of 3/8-inch diameter extra high strength steel (EHS) and fiber optic ground wire (OPGW) is proposed for the shield wires. The conductor size and shield wire selection are subject to change pending completion of additional electrical optimization studies.[53]

79. The typical right-of-way needed to support a 230 kV transmission line is approximately 125 feet wide. However, the width of the right-of-way that is needed in a particular location depends upon topography, existing features and recommended clearances between the conductor and other facilities adjacent to the route. Applicants seek permanent easements providing the right to construct, operate, and maintain the transmission line along the full width and length of the proposed right-of-way.[54]

80. Applicants have agreed that when approaching landowners regarding the purchase of right-of-way easements, the Applicants' agents will provide written disclosures regarding the protections found in Minn. Stat. § 216E.12, subd. 4.[55]

---

[50] Ex. 24 (Route Application) at 6-16 to 6-17; Ex. 29 (Lindholm Direct) at 4-5.

[51] Applicants' Post-Hearing Response Brief (Applicants' Response Brief) at 4.

[52] Ex. 24 (Route Application) at 6-16; Ex. 29 (Lindholm Direct) at 5.

[53] Ex. 24 (Route Application) at 6-17; Ex. 29 (Lindholm Direct) at 5-6. A kcmil is one thousand circular mils. A circular mil is the area of a wire one mil in diameter.

[54] Ex. 24 (Route Application) at 6-17; Ex. 29 (Lindholm Direct) at 6; *see also,* Rural Utility Service Bulletin 1724E-200 at 5-7 (the right-of-way width for a particular line "requires the consideration of a variety of judgmental, technical, and economic factors" in place at the time of the line's final design).

[55] Applicants' Response Brief, at 11.

1. Substations

81. The Project requires modifications at the Wilton Substation near Bemidji, and the Boswell Substation near Grand Rapids.[56]

82. At the Wilton Substation, the Applicants propose to install a new line termination structure, two new 230 kV circuit breakers, five new 230 kV switches, and associated foundations, steel structures, and control panels. None of these modifications will require physical expansion beyond the limits of the existing fenced perimeter of the substation.[57]

83. The Applicants propose similar modifications to the Boswell Substation. The Applicants propose utilizing an unused line position in the substation and installing one new 230 kV circuit breaker, a 230 kV "dead-end structure," two new 230 kV switches, associated foundations, steel structures and control panels.[58]

84. Additionally, the power lines that now run into the substation will need to be relocated so as to accommodate the addition of another line. This relocation and addition may require additional 230 kV dead-end structures to be installed.[59]

85. The Applicants do not anticipate requiring additional land, beyond the Boswell Substation's current 1.3 acre parcel, to complete the needed modifications.[60]

86. Locating the Project along Route 4 also requires upgrading the existing 115 kV Cass Lake Substation to 230 kV.[61]

87. While the Applicants do not propose to acquire land in order to accommodate the needed improvements, the Applicants do propose substantial upgrades to the existing Cass Lake Substation site. The Applicants propose extending the existing fence line around the Substation approximately 320 feet west, so as to establish a new 230 kV switchyard; installing a new 230 kV three-breaker ring bus with line switches, a new 230/115 kV transformer and associated 115 kV facilities; establishing a new 115 kV four-breaker ring bus with switches; and placement of a new control house, relay panels, foundations, steel structures, and switches.[62]

---

[56] Ex. 24 (Route Application) at 6-21; Ex. 30 (Weiers Direct) at 3.

[57] Ex. 24 (Route Application) at 6-21; Ex. 30 (Weiers Direct) at 3.

[58] Ex. 24 (Route Application) at 6-21; Ex. 30 (Weiers Direct) at 3-4.

[59] Ex. 30 (Weiers Direct) at 3-4.

[60] Ex. 24 (Route Application) at 6-21; Ex. 30 (Weiers Direct) at 3-4.

[61] Ex. 24 (Route Application) at 6-21 to 6-22; Ex. 30 (Weiers Direct) at 4.

[62] Ex. 24 (Route Application) at 6-21 to 6-22; Ex. 30 (Weiers Direct) at 4-5.

88. Applicants likewise propose that a Breaker Station be constructed at Nary Junction so as to improve the reliability of the 115 kV system in the Bemidji area.

89. The addition of a Breaker Station at Nary Junction would connect three 230 kV sources of electric power (from the Wilton, Cass Lake, Badoura substations) to the existing 115 kV system. This configuration will allow at least two 230 kV sources to remain available if there is a fault on the underlying 115 kV system. Without the Nary Junction Breaker Station, a fault on the underlying 115 kV system will result in the disconnection of all three 230 kV sources.[63]

90. Installation of a Breaker Station at Nary Junction would improve reliability by sectionalizing the local 115 kV system and providing fault-interrupting capability at an important point in the transmission system. These upgrades would minimize the number of customers that would be affected in the event of a fault on the transmission system between Bemidji, Cass Lake, and Akeley.[64]

91. Installation of a Breaker Station at Nary Junction would also improve operational flexibility of the 115 kV system. Equipment at such stations can be remotely-controlled from dispatch centers – a feature that reduces both the amount of time that is needed to restore power following a fault on the transmission line and the length of periods of "de-energizing" of the line during facility construction and maintenance. Remote control of switches can operate faster than manual switching by field personnel. This greater speed thus minimizes the impact of outages to customers along the existing 115 kV system.[65]

92. The Applicants propose to establish this new 115 kV breaker station adjacent to the existing Nary Junction switch, and within the existing 5-acre site. The proposed breaker station will consist of three 115 kV circuit breakers; nine new 115 kV switches; communications, relay and control equipment; three 115 kV line termination structures; and a control house. An improved access road and small parking lot will also be required to move this equipment to the site.[66]

2. 115 kV Line Thermal Improvements

93. The Applicants propose upgrades to improve the thermal limits of the existing Cass Lake-Nary 115 kV line and the Nary-Helga-Bemidji 115 kV lines. The improvements would permit the lines to handle increased thermal flows during contingencies.[67]

---

[63] Ex. 24 (Route Application) at 6-22; Ex. 30 (Weiers Direct) at 5-8.

[64] Ex. 30 (Weiers Direct) at 6-7.

[65] *Id.* at 7-8.

[66] *Id*. at 8.

[67] *Id*. at 5-6. Because these thermal limit improvements do not change the voltage or the rights-of-way of these two lines, the improvements by themselves are not subject to environmental review and approval by the Commission. Minn. R. 4410.4400 and 7850.1500, subp. B.

94. Increasing the thermal limit of the Cass Lake-Nary 115 kV line requires replacing the existing 115 kV conductor with a larger 115 kV conductor.[68]

95. Moreover, to increase the thermal limit of the Nary-Helga-Bemidji 115 kV line, its conductor-to-ground clearances must be increased by either replacing the existing structures or by using a technique known as "phase raising." Phase raising involves cutting through the existing structures and placing steel spacers in them for added height and structural integrity.[69]

96. The Applicants propose to raise the structures along the Nary-Helga-Bemidji 115 kV line (which now reach between 65 and 70 feet tall) by 5 feet. No additional right-of-way would be required to complete the phase raising.[70]

3. Project Cost

97. The cost of constructing the 230 kV transmission line as proposed by Applicants is approximately $55.8 million. This total includes the estimated construction costs associated with each mile of wetland and forestland crossed, and the double circuiting of the Project with an existing 115 kV line at the Wilton Substation.[71]

98. The construction costs for the Project's associated facilities (substation modifications at Wilton, Boswell, and Cass Lake, and new breaker station at Nary Junction) are estimated at $10.4 million, for total Project costs of approximately $66.2 million.[72]

G. Route Alternatives:

99. In their Route Permit Application, the Applicants identified Route 1 as their preferred route.[73]

100. Based upon discussions among several federal agencies and other stakeholders – including the Rural Utilities Service (RUS), Chippewa National Forest (CNF), Army Corps of Engineers (ACE), and the Department of Resource Management (DRM) of the Leech Lake Band of Ojibwe (LLBO) – four additional corridors for the Project were identified:[74]

---

[68] Ex. 30 (Weiers Direct) at 5.

[69] *Id*. at 5-6.

[70] Ex. 34 at 3 (Applicants' Responses to Information Requests from April 21-23 Evidentiary Hearings).

[71] Ex. 29 (Lindholm Direct) at 6 and Schedule 2.

[72] *Id*. at Schedule 2.

[73] *Id*. at 9; *see also* Ex. 24 (Route Application) at 1-2 to 1-3.

[74] Ex. 24 (Route Application) at 5-1 to 5-3.

- The North Corridor is an approximately 116-mile long corridor that connects the Wilton and Boswell Substations without traversing any of the Leech Lake Reservation. It does so by following existing pipeline, transmission, and county road rights-of-way to the west, north, and east of the Reservation.

- The Central Corridor is approximately 69 miles long and from two to eight miles wide. It runs parallel to U.S. Highway 2 between Bemidji and Grand Rapids. It directly connects the two end points by following existing infrastructure rights-of-way, including: Minnesota Power and Otter Tail Power 115 kV transmission lines; Great River Energy 69 kV transmission lines; the Burlington Northern Santa Fe (BNSF) rail line; Enbridge pipelines; and Great Lakes Gas pipelines. This corridor is the shortest distance between the two endpoints of the Project.

- The South Corridor is an approximately 100-mile long corridor that connects the Wilton and Boswell Substations by following existing pipeline, transmission, and road rights-of-way south and around the Reservation. However, this corridor still traverses a portion of the Reservation along its route.

- The Non-CNF Corridor is an approximately 126-mile corridor that connects the Wilton and Boswell Substations by following a more-southerly combination of transmission and road rights-of-ways. This corridor avoids both the Chippewa National Forest and the Leech Lake Reservation.

101. The EIS scoping process also revealed that, with respect to the central portion of the CNF and LLR, both the CNF and the LLBO favor Route 2 over Route 1. Route 2 follows the Enbridge pipeline right-of-way near U.S. 2 and includes more previously-disturbed land than Route 1. In addition, locating the Project along Route 2 avoids areas of special cultural and biological significance – specifically, the Ten Section area of the CNF and the Pike Bay Experimental Forest within the CNF.[75]

H. Applicants' Route:

102. Based upon the information developed through the EIS scoping process, and the colloquies with various agencies, the Applicants combined segments of Routes 1 and 2 so as to create Applicants' Preferred Route. The west and east ends of this Route primarily follow Route 1. The central portion of this Route follows Route 2. As noted above, in the FEIS, this route is denominated as "Route 4."

[75] Ex. 29 (Lindholm Direct) at 9-10.

103. Beginning at the Wilton Substation west of Bemidji, Route 4 follows Route 1 along the Great Lakes pipeline. At Hubbard County Highway 45, Route 4 diverts northeast from the Great Lakes pipeline to parallel the Enbridge pipelines and then runs east to Route 2 at the Cass Lake Substation. From the Cass Lake Substation, Route 4 follows Route 2 along the Enbridge pipelines to a point 4.7 miles east of Bena, Minnesota. At this location, Route 1 is south of U.S. 2 while Route 2 is north of the highway. Route 4 generally follows Route 1 on the south side of the highway to the Boswell Substation in Cohasset, Minnesota.[76] Schedule 4 of Exhibit 29 (Lindholm Direct) consists of maps showing each of the segments of Route 4. Additionally, Schedule 3 of Exhibit 29 provides a detailed description of the route segments with cross-references to the relevant maps in Schedule 4.

104. Route 4 follows Route 1 at the point that it crosses the Mississippi River. The terrain in the area of the Mississippi crossing is a large floodplain wetland with multiple oxbows. The Applicants propose a set of single circuit H-frame structures to be located adjacent to the existing Great River Energy 69 kV line that crosses the river.[77]

105. An H-frame design allows longer spans between structures, requires fewer structures and therefore reduces the direct impacts to floodplain wetlands. While having the Project adjacent to Great River Energy's 69 kV line increases the number of horizontal planes of wire that birds moving along the river will encounter (i.e., three conductor levels and one shield wire level), the risk of avian collisions can be effectively minimized by the Applicants' plan to incorporate visual flight diverters to these multiple planes.[78]

106. Route 4 avoids crossing on, or over, any tribal trust lands of the LLBO or the Minnesota Chippewa Tribe.[79] Applicants have reviewed with the Bureau of Indian Affairs (BIA) the parcels within Route 4, and the BIA has confirmed that Applicants' right-of-way can be aligned so as to avoid crossing on, or over, tribal trust lands.[80]

I. Route Permitting Statutes and Rules:

107. The Power Plan Siting Act 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."[81] The statute then identifies twelve criteria for the Commission to consider when making a route designation:

---

[76] *Id*. at 10.

[77] *Id*. at 11.

[78] *Id*.

[79] Ex. 31 (Lindholm Rebuttal) at 1-2.

[80] *Id*. at 2-3.

[81] Minn. Stat. § 216E.03, subd. 7.

(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;

(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.[82]

108. Additionally, by rule, the Commission has established a set of evaluation factors that mirror the criteria established by Minn. Stat. § 216E.03, subd. 7 (b). The Commission is to consider the:

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

B. effects on public health and safety;

C. effects on land-based economies, including, but not limited to, agriculture, forestry, tourism, and mining;

D. effects on archaeological and historic resources;

E. effects on the natural environment, including effects on air and water quality resources and flora and fauna;

F. effects on rare and unique natural resources;

G. application of design options that maximize energy efficiencies, mitigate adverse environmental effects, and could accommodate expansion of transmission or generating capacity;

H. use or paralleling of existing rights-of-way, survey lines, natural division lines, and agricultural field boundaries;

I. use of existing large electric power generating plant sites;

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

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

N. irreversible and irretrievable commitments of resources.[83]

J. Analysis of Applicants' Route Under Commission Routing Factors (Minn. R. 7850.4100):

1. Effects upon Human Settlement

109. The Commission's consideration of the effects on human settlement includes displacement of homes by the Project, noise from the construction and operation of the Project, and the Project's impacts on aesthetics, cultural values, recreation, and public services.

(i) Displacement

110. The following summarizes the route alternatives' potential to displace residents:

Comparison of Route Alternatives' Potential to Displace Residences

	Route 1	Route 2	Route 3	Route 4
Residences within 125 feet of the right-of-way	3	15	25	0
Residences within the 1,000 foot route	109	281	459[84]	106

111. Route 4 avoids the greatest number of homes.

112. Additionally, the Applicants pledge to further mitigate potential displacement by altering the alignment of the Project so as to avoid those homes that lie in the right-of-way.[85]

(ii) Noise

113. The noise levels of the 230 kV line will be below the most restrictive state standards for noise. Area noise levels as a result of the modifications at the Wilton and Boswell substation and the new breaker station at Nary Junction should not change,

[83] Minn. R. 7850.4100 (2009).

[84] Ex. 35A (FEIS), Table 3.11-10 at 335; Ex. 29 (Lindholm Direct) at Schedules 5, 6, and 7.

[85] Ex. 29 (Lindholm Direct) at Schedules 5, 6, and 7, note A.

while the design for the addition of a 230 kV transformer to the Cass Lake substation will comply with state noise rules.[86]

(iii) Aesthetics

114. The principal aesthetic impact of building the Project in any of the routes is the loss of trees and the devaluation of high-value scenic resources because of the addition of transmission lines to the landscape.[87] The table below details the total loss of forested land that is associated with each route:[88]

Comparison of Route Alternatives' Impact on Forested Land (acres)

Forested Land	Route 1	Route 2	Route 3	Route 4
Total	579	439	823	581
Within CNF	294	202	324	249

115. Locating the Project in Route 2 results in the least tree loss.

116. The total loss of trees associated with Route 4 is comparable to Route 1 and results in significantly less tree loss within the CNF when compared to Route 1.

117. The greatest visual impact of the Project would be in Routes 1 and 2, which cross a central portion of the CNF and bisect the LLR. Between these two alternatives, Route 1 is the most visually isolated from highways and residential areas, but crosses important traditional gathering areas within the LLR – such as the Ten Section area.[89] Route 2, by contrast, parallels U.S. 2 most of its length, in a corridor that is already disturbed with railroad, pipeline, and power line rights-of-way along with a major highway. While this line would be partially buffered from U.S. 2 by forested areas, it would be noticeable along much of the route.[90]

118. In the view of both the CNF and the LLBO, the negative impacts associated with the Route 1 crossings of sensitive areas outweigh the negative impacts of Route 2.[91]

---

[86] Ex. 24 (Route Application) at 8.3-2 to 8.3-3.

[87] Ex. 35A (FEIS) at 66.

[88] Ex. 29 (Lindholm Direct) at Schedules 5, 6, and 7; *see also* Ex. 35A (FEIS), Table 5-3 at 506.

[89] Ex. 35A (FEIS) at 68-72.

[90] *Id*. at 69-73.

[91] Letter of Robert Harper, Chippewa National Forest, USDA (May 3, 2010); Letter of Bruce Johnson, Division of Resource Management, Leech Lake Band of Ojibwe (May 3, 2010).

(iv) Cultural Values

119. Route 4 minimizes the impacts upon natural resource appreciation and use. The Preferred Route avoids impacting the most sensitive areas and bisects an area where there are already existing human-made intrusions – such as roads, railways, buildings and utility lines.[92]

120. Adverse impacts on natural resource use, such as wild rice harvesting or berry picking, are likewise not expected. The opportunities for berry picking would likely increase due to conversion of forest lands to grasslands and shrub lands within the transmission line right-of-way, and the Project would span rivers and deep-water wetlands so as to avoid existing wild rice resources.[93]

121. Game animal populations are also not expected to be affected by locating the Project along Routes 1, 2, 3 or 4; thereby avoiding negative impacts upon hunting opportunities in the area.[94]

122. Additionally, due to the limited space available for construction in the area of Cass Lake, Minnesota, the Applicants have pledged to evaluate the use of single-pole construction in this area.[95]

(v) Recreation and Tourism

123. The Project would span recreation trails. It would have minimal, if any, impacts upon fishing, water recreation and developed recreation sites – such as golf courses.

124. The Project would likewise have only temporary impacts on hunting, due to the displacement of wildlife during the pre-construction clearing of vegetation.[96]

125. Among the route alternatives, because Route 4 is primarily located along existing transmission lines, pipeline rights-of-way and U.S. 2, it would have the least impacts upon recreation and tourism.[97]

---

[92] Ex. 24 (Route Application) at 8.7-2.

[93] *Id.*

[94] Ex. 35A at 282.

[95] Ex. 24 (Route Application) at 8.7-2 to 8.7-3.

[96] Ex. 35A at 361-62.

[97] Ex. 24 at 8.22-3; *see also* Ex. 35-A 391-93.

(vi) Public Services

126. The record demonstrates that there are no anticipated adverse consequences to public services as a result of the construction and operation of the Project along any of the proposed Routes.[98]

2. Effects on Public Health and Safety

127. Applicants have committed to build and operate Project facilities in compliance with the requirements of the National Electrical Safety Code (NESC), Occupational Safety and Health Act (OSHA), and other applicable federal, state and local regulations. The Applicants have made a detailed description of the procedures they will follow in building, operating, and maintaining the transmission line a part of this hearing record.[99]

128. The Applicants have established that transmission lines can be safely located in rights-of-way that are adjacent to rights-of-way that host underground natural gas and crude oil pipelines. The Applicants have pledged to implement modern engineering practices so as to safely collocate transmission lines adjacent to pipeline rights-of-way.[100]

129. The Applicants have also committed to meeting all applicable safety requirements with respect to routing the Project along pipeline rights-of-way.[101]

130. The Applicants have satisfied the applicable standards for protecting the public's health and safety with respect to electro-magnetic fields (EMF). The Project will have a peak magnitude of electric field density of approximately 2.6 kV/m at the point directly underneath the conductors at one meter above ground level. It will also have a peak magnitude of magnetic field density of approximately 260 mG at the point directly underneath the conductors. Both of these levels are below the applicable state and federal standards for electro-magnetic fields.[102] Further, it is not anticipated that the Project will create stray voltage events.[103]

131. Routes 1, 3 and 4 avoid the St. Regis Superfund Site in Cass Lake. Route 2 traverses this site.[104]

3. Effects on Land-Based Economies

[98] *Id.,* at 8.8-1 to 8.8-2; Ex. 35A (FEIS) at 513-15.

[99] Ex. 24 (Route Application) at 6-27, 8.2-3, and 8.24-4 to 8.24-6; Ex. 35A (FEIS) at 448-49.

[100] Tr. (Vol. III) at 30-33.

[101] Ex. 24 (Route Application) at 8.24-4 to 8.24-6; Tr. (Vol. III) at 30-31, 138-43; Tr. (Vol. IV) at 41-43.

[102] Ex. 24 (Route Application) at 8.10-2 to 8.10-3.

[103] *Id*. at 8.10-3; Ex. 35A (FEIS) at 446-47.

[104] Ex. 29 (Lindholm Direct) at Schedules 5, 6, and 7.

132. The Project's impacts to agriculture, forestry and mining are considered by the Commission as part of its assessment of the effects on land-based economies.

(i) Agriculture

133. The following table shows the impacts of the route alternatives on agriculture:[105]

Comparison of Route Alternatives on Agricultural Land (acres)

Route 1	Route 2	Route 3	Route 4
210	117	503	191

134. Among the four alternatives, Route 4 has the second least impact upon agricultural land.

135. Route 3 has a very high impact upon agricultural land.

136. The Applicants agree to further reduce the impact of its proposed route through the implementation of an Agricultural Mitigation Plan.[106]

(ii) Forestry

137. The record shows the following impacts on forested land:[107]

Comparison of Route Alternative Impacts on Forested Land (acres)

	Route 1	Route 2	Route 3	Route 4
Total	579	439	823	581
Within CNF	294	202	324	249

138. Route 2 traverses the Ten Section area of the CNF; an area that is of cultural and biological importance to the LLBO.[108]

139. Route 4 does not traverse the southern (and most highly-valued) portion of the Ten Section area of the CNF.[109]

---

[105] *Id*.

[106] Ex. 35A (FEIS) at 417-18.

[107] Ex. 29 (Lindholm Direct) at Schedules 5, 6, and 7.

[108] *Id.* at 10; Ex. 24 (Route Application) at 8.25-5.

[109] Ex. 35A (FEIS) 183.

140. Among the four alternatives, Route 3 has the greatest impact upon forested land.

141. Route 4 traverses two more acres of forested land than Route 1, but 45 fewer acres within the CNF.

(iii) Mining

142. There are mining resources located within all of the route alternatives, but none of the right-of-way alignments cross on, or over, active aggregate or mining areas. Even if a re-alignment of the Project's right-of-way is required, the proposed route width is large enough to avoid impacting existing aggregate operations and resources.[110]

4. Effects on Archaeological and Historic Resources

143. As part of its assessment of the impacts upon cultural resources, the Commission considers the adverse effects routing may have on properties that are eligible for listing on the National Register of Historic Properties (NRHP).[111]

144. Potential impacts to historic properties are evaluated in terms of the significance of the resource and the potential for the Project to detract from that significance.[112]

145. The number of known archaeological, historic and architectural sites of significance within each route alternative is summarized below:[113]

Route Alternatives' Potential Impacts on Known Cultural Resources

Route 1	Route 2	Route 3	Route 4
36	25	58	37

146. After a route is selected for the Project, the RUS will complete the identification and evaluation of cultural resources that are eligible for the National Register.[114]

147. RUS will undertake these functions under Programmatic Agreement between the other interested federal agencies, the LLBO Tribal Historic Properties Office, other interested tribes and the Applicants. The terms of the agreement will guide

[110] Ex. 24 (Route Application) at 8.26-1; Ex. 35A (FEIS) at 438-39.

[111] Ex. 35A (FEIS) at 282 and 286.

[112] *Id*. at 282.

[113] Data from Ex. 35A (FEIS), Table 3.9-3 at 281; Ex. 29 (Lindholm Direct) at Schedules 5, 6, and 7.

[114] Ex. 35A (FEIS) at 286.

the identification and evaluation of historic properties, the assessment of adverse effects to them, and the development of appropriate mitigation plans.[115]

148. The record suggests that while the Programmatic Agreement is not yet finalized, any adverse impacts identified by the RUS will be adequately mitigated.[116]

5. Effects on Natural Environment

149. As part of its assessment of the impacts upon natural environment, the Commission considers the potential adverse effects on air and water quality, and on flora and fauna.[117]

(i) Air Quality

150. The construction of the Project will result in the emission of air pollutants from construction equipment and the release of fugitive dust from disturbing soil. This impact is temporary. Concentrations of ozone from the operation of the Project would be *de minimus* and have a negligible impact on air quality.[118]

(ii) Water Quality

151. Short-term and long-term impacts to surface water resources are unlikely to occur to the water basins (*e.g.,* lakes and ponds) and watercourses (*e.g.,* rivers and streams) located in the route alternatives. For the most part, each route alternative avoids direct impact to surface water. In those instances where an impact occurs, the Applicant pledges to align the line, and to place supporting structures, so as to span affected water bodies.[119]

152. No adverse impacts to groundwater have been identified along any of the route alternatives.[120]

153. Routes 1, 2 and 4 all propose a crossing of the Mississippi River on the south side of U.S. 2, west of Ball Club, Minnesota.[121]

154. The Applicants pledge to locate structures outside the floodplain to the extent practicable and to restore any disruption to the floodplain contours that occurs during construction to its pre-construction state.[122]

---

115 *Id*.

116 *Id.*

117 Minn. R. 7850.4100 (E) (2009).

118 Ex. 35A (FEIS) at 103-05.

119 *Id*. at 131-34 and 136-39.

120 *Id*. at 136-36.

121 Ex. 29 (Lindholm Direct) at 11; Ex. 35A (FEIS) at 122-23.

155. The wetland impacts of the route alternatives are summarized in the table below:[123]

Comparison of Route Alternatives' Impact on Wetlands (acres)

	Route 1	Route 2	Route 3	Route 4
Total Wetland within right-of-way	292	225	420	317
Forested Wetland conversion	209	166	110	97

156. Direct impacts to wetlands due to pole placements would be similar for all the route alternatives – impacting less than one acre of land.[124]

157. Among the four alternatives, Route 3 has the greatest impact upon wetlands.

158. Route 4 traverses 92 more acres of wetlands than Route 2, but 69 fewer acres of forested wetlands. Among the four alternatives, Route 4 has the fewest impacts upon forested wetlands.

159. The location of structures by and in any wetland along the proposed routes is subject to review and permitting by Army Corps of Engineers, Minnesota Department of Natural Resources, Minnesota Pollution Control Agency, and Minnesota Board of Water and Soil Resources.[125]

160. Applicants have identified specific best management practices that they will use to minimize any impacts to wetlands.[126]

(iii) Flora

161. Among the four route alternatives, Route 3 results in the greatest disturbance to vegetation cover.[127]

---

[122] Ex. 24 (Route Application) at 8.16-5 to 18.6-6.

[123] Ex. 29 (Lindholm Direct) at Schedules 5, 6, and 7.

[124] Ex. 35A (FEIS), Table 3.6-4 at 161.

[125] Ex. 24 (Route Application), at 4-5 to 4-8.

[126] *Id*. at 8.17-5 to 8.17-6.

[127] Ex. 35A (FEIS) at 198.

162. Between Routes 1 and 2, the impacts on vegetation are comparable. Route 1 would have more impact on upland deciduous communities than Route 2, but less impact on upland shrub areas.[128]

163. One significant difference between Routes 1 and 2 is the potential impact on the Ten Section Area and Guthrie Till Plain. Route 1 crosses these areas, potentially impacting old growth forest. Route 2 passes along the northern border of the Ten Section Area and has a limited 3-mile impact on the Guthrie Till Plain, east of the Ten Section.[129]

164. The eastern sections of the Ten Section Area and Guthrie Till Plain crossed by Route 2 are now developed, with existing right-of-way, and are not as heavily used by members of the LLBO for hunting, gathering or spiritual activities as the portions of the Ten Section Area and Guthrie Till Plain crossed by Route 1.[130]

165. Route 4 incorporates the portion of Route 2 that avoids the impacts of Route 1 on the Ten Section and Guthrie Till Plain.[131]

(iv) Fauna

166. Because the Project primarily follows pre-existing rights-of-way, rather than establishing new rights-of-way, the Project will not result in substantial forest fragmentation or isolation of habitat patches.[132]

167. The Project will convert some forested habitat to shrub land within its right-of-way, but that is not anticipated to adversely impact the wildlife population generally.[133]

168. The impact of the Project on wildlife species and habitat is similar between and among the various route alternatives.[134]

169. With the possible exception of some mortality for less mobile species, and the disturbance of some nest habitats, wildlife populations in the vicinity of the existing rights-of-way would not be adversely affected by the expansion of those rights-of-way.

170. It is not expected that there will be impacts to aquatic species from the Project because the lines will either span or site around water bodies.[135]

---

[128] *Id.* at 197-98.

[129] *Id*. at 200-201.

[130] *Id*. at 202.

[131] *Id*. at 203.

[132] *Id*. at 213-19.

[133] *Id*. at 214.

[134] *Id*. at 211 and 213-16.

[135] *Id*. at 214.

171. Applicants pledge to design the Project with adequate spacing between conductors to reduce the risk of avian electrocution.[136]

172. Applicants pledge to complete an Avian Protection Plan and to use flight diverters on those portions of the Project that are located within primary flyways between breeding and foraging areas.[137]

6. Effects upon Rare and Unique Natural Resources

173. Species of special concern are those plants, birds, mammals, reptiles, and invertebrates that are identified as endangered, threatened, sensitive, or of special concern by federal, state or tribal authorities.[138]

174. The habitat for 17 species of special concern has been identified along Route 1; a comparable number in Route 2 but with fewer overall occurrences, and 23 species of special concern in Route 3.[139]

175. Route 4 has a comparable number of species of special concern as Routes 1 and 2.[140]

176. None of the routes traverse the federally-designated critical habitats for the Canada lynx or the gray wolf.[141]

177. The Applicants maintain that among the advantages of approving a wider route, at or near 1,000 feet wide, is the flexibility that such an authorization would provide to avoid plant species of concern within the later-selected Project right-of-way.[142]

178. The long-term impact on birds due to the conversion of forested land to shrub land within the Project right-of-way can be minimized by avoiding known breeding and nesting sites.[143]

179. The Minnesota Department of Natural Resources, the Chippewa National Forest, and the Leech Lake Division of Resource Management have preliminarily

---

136 *Id*.

137 Ex. 29 (Lindholm Direct) at 11.

138 Ex. 35A (FEIS) at 220-21.

139 *Id*. at 219-21.

140 *Id*. at 223, 233, 240, 254 and 258-62.

141 *Id*. at 257.

142 *Id*. at 263-64.

143 *Id*.

concluded that the disruptions to habitat associated with Project construction would have a short-term impact and would not likely affect mammal populations.[144]

180. Applicants have agreed to complete pre-construction surveys of each portion of the selected route to identify species of special concern so that they can be avoided in the alignment of the Project's right-of-way and siting of the Project's structures. If the impacts to such species cannot be reasonably avoided, Applicants have agreed to take prescribed steps to mitigate the impacts of the Project.[145]

7. Application of Various Design Options

181. As part of its assessment of design alternatives, the Commission considers options that could maximize energy efficiency, mitigate adverse environmental effects and accommodate the expansion of transmission or generating capacity in the future.[146]

182. Although the primary purpose of the Project is to improve long-term reliability of the local transmission system in the Bemidji area and regional system in northwestern Minnesota, it has the ancillary benefit of facilitating the expansion of wind-energy generation sources in the Red River Valley and eastern North Dakota.[147]

183. As detailed above, Applicants have also identified the specific mitigation procedures that will be taken to address the various adverse environmental impacts that could result from the Project.[148]

184. A line's ability to transport increasing amounts of electric power – referred to as the "line's loading limit" – is generally constrained by the "line's thermal limit." When a line exceeds a certain length, however, its loading limit is less than the thermal limit because of the increased impedance that is associated with longer transmission lines. The high impedance causes a drop in voltage at modest to high power transfer levels, thus making it difficult to maintain a steady voltage along the line.[149]

185. Because of its length, Route 3 reduces the Project's loadability to approximately 75 percent of the capacity of the shorter routes. In comparison to the other, much shorter routes, Route 3 is far less effective in addressing the current reliability concerns in the Bemidji-Cass Lake area. These limitations undermine the

---

144 *Id*. at 262.

145 *Id*. at 263-64.

146 Minn. R. 7850.4100 (G) (2009).

147 Ex. 24 (Route Application) at 1-1.

148 *Id*. at § 8, mitigation recommendations in subsections 8.1 to 8.26; *see also* Ex. 35A (FEIS), Table ES-3 at ES-24 to ES-30.

149 Ex. 30 (Weiers Direct) at 12-13, and Schedule 1.

ability of a transmission line along Route 3 to meet current as well as future load growths.[150]

186. The longer length of Route 3 also adversely impacts the Project's energy efficiency and ability to curb system losses. Some amount of energy transmitted across the transmission system is lost during transport. As the length of a transmission line increases, so does the amount of system losses over that line.[151]

Annual and 40-Year Cumulative Present Value of Loss Reductions

Route	Annual Savings ($ Thousands)			Cumulative Present Value
	Demand Savings	Energy Savings	Total Savings	
Route 3	$413	$3,490	$3,903	$25.7
Route 4	$499	$4,344	$4,843	$31.9

187. In comparison with Route 3, Routes 1, 2 and 4 present much greater opportunities to realize demand and energy savings.[152]

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

188. The various route alternatives compare favorably in the amount of existing road, pipeline or transmission rights-of-way paralleled by the Project. As each route alternative parallels existing rights-of-way for 90 percent or more of the length of each route, there is not a significant difference between alternatives in this respect.[153]

189. While most of Route 4 runs adjacent to existing road, rail and pipeline rights-of-way, it is not anticipated that it will share any of those rights-of-way due to construction, operation and maintenance issues.[154]

190. Applicants disfavor requirements that they undertake double circuiting of the Project line, for the following reasons:

- Within the Mid-Continent Area Power Pool (MAPP) region during the period 1991 – 2000, weather-related events were the cause of more than 70 percent of the outages of 230 kV lines; outdistancing every other cause of line disruption.

[150] *Id*. at 12-13.

[151] *Id*.

[152] *Id*. at 13.

[153] Ex. 35A (FEIS), Table ES-1 at ES-9; Ex. 29 (Lindholm Direct), Schedules 5-7.

[154] Ex. 24 (Route Application) at 8.24-1 to 8.24-6.

- During this period, weather-related outages occurred, on average, once per year for every 100 miles of transmission lines. These outages, on average, lasted more than one day each.

- Failure of the common structure, for whatever reason, results in an outage of two transmission elements.

- Buildups of sleet and ice on double-circuited structures placed these structures at greater risk of failure. The increased weight and stress placed on the conductors and the structures contributes to the failure of both circuited lines.

- Double circuiting involves higher construction costs and greater impacts to ratepayers. Double circuit construction, on average, is 1.5 times more costly than single circuit construction.

- Double-circuiting permits fewer, and less-attractive, planned outage options in comparison with single circuit designs. Adjacent transmission elements on double circuited segments must be de-energized at the same time in order to allow a safe approach by utility workers.

- Double circuited segments trigger higher maintenance costs, because specialized equipment and training is required when working near energized conductors.

- The reduced reliability of double-circuited systems places at risk residential customers who rely upon electricity to cool and heat their homes.

- Double-circuiting the 230 kV and 69 kV lines that would run between Bena and Ball Club, Minnesota would increase the number and height of the structures that would be needed to cross the Mississippi River, increasing the impacts on the floodplain and the risk of avian collisions.

9. The Costs Associated with Electrical System Reliability

191. Because Route 3 does not include a connection to a substation in the vicinity of Cass Lake, Minnesota it is a less desirable option than the other alternatives.

192. The estimated cost of constructing the Project in Route 4, Route 1, or Route 2 – each of which is approximately 68 to 70 miles long – is between $65.4 and $66.2 million.[155]

[155] Ex. 29 (Lindholm Direct) at Schedule 2.

Cost Comparison of Locating Project in Route Alternatives ($ millions)

Project Component	Route 1	Route 2	Route 3	Route 4
230 kV Line (including adders for woodland/ wetland construction)	$54.5	$52.8	$91.6	$55.8
Boswell Substation Expansion	$1.0	$1.0	$1.0	$1.0
Wilton Substation Expansion	$1.5	$1.5	$1.5	$1.5
Cass Lake Substation Expansion	N/A	$5.2	N/A	$5.2
New Cass Lake Substation	$5.7	N/A	N/A	N/A
Nary Breaker Station	$2.7	$2.7	$2.7	$2.7
Total for 230 kV Line and Associated Facilities	$65.4	$65.7	$96.8	$66.2

193. Each of the shorter alternatives links the 230 kV line to a new or expanded substation. The substations can provide the needed voltage support to the Cass Lake area. In order for Route 3 to provide similar support, a new 18.5-mile 115 kV line that connects the Wilton Substation to the Cass Lake Substation is required. Thus, the new line boosts the projected costs associated with Route 3 from approximately $97 million to $114 million.[156]

194. At an estimated cost of $114 million, the cost to construct the Project along Route 3 is 75 percent more than the cost of locating the Project along the shorter routes.[157]

10. Unavoidable Adverse Human and Natural Environmental Effects

195. Construction and operation of the Project will result in long-term impacts to some soils, forested land, wetlands, shrub land, cropland, grassland, agricultural land, and farmland.[158]

[156] Ex. 30 (Weiers Direct) at 13-14.

[157] *Id*.

[158] Ex. 35A (FEIS), Table 5-3 at 593.

Estimated Impacts to Resources Within 125-Foot Right-of-Way (acres)

Resource	Route 1	Route 2	Route 3	Route 4
Forested Land	579	439	813	575
Soils	3	3	5	3
Wetland type Conversion	209	166	269	226
Wetlands	<1	<1	<1	<1
Shrub Land	<1	<1	up to 1.4	<1
Cropland/Grassland	<1	<1	up to 2.4	<1
Agricultural Land Use	<1	<1	2.03	<1
Prime Farmland	1.3	<1	3.6	<1

196. These resources would not return to separate productive uses until the transmission line and associated facilities are removed.[159]

197. Because it is a combination of portions of Routes 1 and 2, Route 4 will have long-term impacts on resources comparable to those for Routes 1 and 2.[160]

198. It is not expected that there will be long-term impacts to other resources identified in the EIS beyond the Project's 50-year lifetime.[161]

199. The principal impact of the Project is the low-to-moderate visual impact of a high-voltage transmission line.[162] This impact would be experienced by the people who live and work in the areas adjacent to the line, as well as those who come to these communities for recreation and tourism.

11. Irreversible and Irretrievable Commitments of Resources

200. Construction and operation of the Project may result in the "irreversible or irretrievable commitment of certain resources." As commonly understood in this field, an irreversible resource commitment occurs when the commitment limits the future options for a resource and an irretrievable commitment occurs when a resource is consumed that is neither renewable nor recoverable.[163]

---

[159] *Id*.

[160] Ex. 29 (Lindholm Direct) at Schedules 5, 6, and 7.

[161] Ex. 35A (FEIS) at 593.

[162] Ex. 24 (Route Application) at 10-1, 10-2.

[163] *Id.* at 10-3.

201. The Applicants pledge to pursue preservation of archaeological and historical sites by avoiding these sites and recovering others as part of the Programmatic Agreement for these resources.[164]

202. Construction of the proposed Project would require the irretrievable commitment of some non-recyclable building materials and fuel for construction equipment. Many components of the Proposed Project would be recycled after their life, particularly metal components.[165]

203. Portions of Route 1 that are not included in Route 4 would require the irreversible or irretrievable commitment of old growth forest, including the Ten Section area and Pike Bay Experimental Forest.[166]

K. Evaluation of Route Alternatives:

204. Routes 1, 2 and 4 are comparable in terms of the costs of construction and later performance of the transmission line.

205. Each of the proposed alternatives will result in efficiencies and a greater reduction in energy losses than the current system.

206. However, because of their much shorter lengths, Routes 1, 2 and 4 all reduce energy losses far more than Route 3.[167]

207. Moreover, because of their shorter length, Routes 1, 2 and 4 have fewer environmental impacts than Route 3.

208. Among the route alternatives, Routes 1, 2 and 4 had comparable impacts forested wetlands, total wetlands within the right-of-way, the total acres of forested lands that are converted and the number of public crossings.[168]

209. Among the four route alternatives, Route 4 is the superior choice. Route 4 best mitigates the impacts of routing to land, adjacent residences and air quality.

210. Importantly, Route 4 avoids areas of particular concern of the CNF – including the most sensitive portions of Pike Bay Experimental Forest, the Goblin Fern study area, the canopy along the Great Lakes pipeline, the Ten Section and Cuba Hill area of the LLBO.[169]

---

[164] *Id*.

[165] *Id*.

[166] Ex. 35A (FEIS) at 592.

[167] *Id.* at 14.

[168] Ex. 35-A at 124, 305 and 332.

[169] *See,* Ex. 35A at 261-62, 323 and 359-74.

211. The CNF and LLBO have indicated a preference for Applicants' Route because, to the extent that the route does not avoid areas of concern altogether, the impacts identified with the route will occur during the installation of the Enbridge pipelines. In this respect, the impacts that will occur in the area can be mitigated by combined restoration efforts of the Applicants and Enbridge, as soon as their respective projects are completed.[170]

212. Route 4 obliges fewer and less severe impacts to residences than Routes 1, 2 and 3.[171]

Comparison of the Impacts Upon Residences

Environmental Impact	Route 1	Route 2	Route 3	Route 4
Residences within ROW	3	15	25	0
Residences within 62.5 to 200 feet of ROW	23	54	102	15
Residences within 1000 feet of ROW[172]	92	269	444	156

213. The average air emission rates per megawatt hour of energy generation, which have been estimated by the Mid-Continent Area Power Pool (MAPP) and approved by the Minnesota Pollution Control Agency, are shown in the table below:

MAPP Average Emission Rates

Emission Type	Emission Rate
SO_2	5.537 pounds per MWh
NO_x	3.982 pounds per MWh
Particulate PM10	0.3257 pounds per MWh
CO_2	0.834 metric tonnes per MWh
Mercury	0.0000432 pounds per MWh[173]

214. Routes 1, 2 and 4 have a higher total loss reduction than Route 3.

[170] Ex. 29 (Lindholm Direct) Schedule 6, note D; Tr. (Vol. III) at 121-23.

[171] *See,* Ex. 29 (Lindholm Direct) at 15 and Schedule 6; Ex. 35-A at 333 and 335.

[172] Ex. 35A at 335.

[173] Ex. 29 (Lindholm Direct) at 14.

Reduction in Air Emissions

Route	Line Loss Reduction (MWh/Yr.)	SO_2 Reduction (Lbs./Yr)	NO_x Reduction (Lbs./Yr.)	PM 10 Reduction (Lbs./Yr.)	CO_2 Reduction (Metric Tonnes/Yr.)	Mercury Reduction (Grams/Yr.)
Routes 1, 2 and 4	86,886	481,088	345,980	28,299	72,463	1,704
Route 3	69,800	386,483	277,944	22,734	58,213	1,369

215. Accordingly, the emissions reductions of SO_2, NO_x, PM10, CO_2, and Mercury for Routes 1, 2 and 4 are likewise greater than Route 3. The emission reductions arising from the Project being located along Route 4 are greater than it would be if located along Route 3.[174]

L. Route Width:

216. The Applicants requested a route width of 1,000 feet.[175]

217. At the request of the OES, following the public hearings, Applicants undertook a series of "on-foot field inspections of the route alternatives with engineering and construction firms." These inspections were part of an effort to narrow the width of the Applicants' preferred route.[176]

CONCLUSIONS

1. The Public Utilities Commission and Administrative Law Judge have jurisdiction to consider the Applicants' Application for a Route Permit.[177]

2. The Commission determined that the Application was substantially complete and accepted the Application on July 14, 2008.

3. OES has conducted an appropriate environmental analysis of the Project for purposes of this route permit proceeding and the FEIS satisfies Minn. R. 7850.2500.

4. The FEIS addresses the issues and alternatives raised in scoping to a reasonable extent considering the availability of information and the time limitations for considering the permit application. Moreover, the FEIS provides responses to the

[174] Ex. 35A at 104-05.

[175] Ex. 29 at 1-1.

[176] "Potential Narrowing of Applicants' Route," *In the Matter of the Application for a Route Permit for the Bemidji-Grand Rapids 230 kV Transmission Project,* (May 17, 2010) (E-Docket No. 20105-50526-01).

[177] *See,* Minn. Stat. §§ 14.57 - 14.62 and 216E.02, subd. 2.

substantive comments received during the DEIS review process and was prepared in compliance with the procedures in Minn. R. 7850.1000 through 7850.5600.

5. Applicants gave notice as required by Minn. Stat. § 216E.03, subd. 3a; Minn. Stat. § 216E.03, subd. 4; Minn. R. 7850.2100, subp. 2, and Minn. R. 7850.2100, subp. 4.

6. OES gave notice as required in Minn. Stat. § 216E.03, subd. 6; Minn. R. 7850.2300, subp. 2; Minn. R. 7850.2500, subp. 2; Minn. R. 7850.2500, subp. 7; Minn. R. 7850.2500, subp. 8; and Minn. R. 7850.2500, subp. 9.

7. Public hearings were conducted in communities located along the proposed high voltage transmission line routes. Applicants and OES 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 satisfied.

8. The evidence on the record demonstrates that Route 4 for the Project and Associated Facilities satisfies the route permit criteria set forth in Minn. Stat. § 216E.03, subd. 7, and Minn. R. pt. 7850.4100.

9. The record evidence shows that Route 4 combines the best design features of Routes 1 and 2 into a single route.

10. The evidence demonstrates that Route 4 is the best alternative on the record for the 230 kV transmission line between Wilton Substation and Boswell Substation.

11. Route 4 does not present a potential for significant adverse environmental effects pursuant to the Minnesota Environmental Rights Act (MERA) and Minnesota Environmental Policy Act (MEPA).

12. Double-circuiting of the Project route is not recommended. The increased operational risks associated with double-circuiting runs counter to the key purpose of this Project – namely, to boost the overall reliability of the electricity system in this service area.[178]

13. Notwithstanding this recommendation, the Applicants assert that four segments adjacent to Route 4 could be double circuited without significantly impacting system reliability. Those segments are:

- Minnkota Power's and Otter Tail Power's 115 kV line between Bemidji and Cass Lake;

[178] *Compare,* Findings 88, 90, 182 and 185.

- Minnkota Power's and Otter Tail Power's 69 kV lines in the Bemidji/Cass Lake area;

- Great River Energy's 69 kV line between Bena and Ball Club; and

- Minnesota Power's 115 kV line between Deer River and Boswell.[179]

14. The Commission should a grant a route permit for the 230 kV transmission line and associated facilities along Route 4.

15. The Commission's final permit decision should include a route that is, in the locations identified in the Applicants' May 17, 2010 filing, narrower than 1,000 feet.[180]

16. The Commission's final permit decision should include provisions to ensure that the Applicants employ such construction and management practices so as to avoid the displacement of homes and mitigate impacts to the natural environment.[181]

Dated: September 20, 2010

/s/ Eric L. Lipman

_____

ERIC L. LIPMAN
Administrative Law Judge

Reported: Shaddix & Associated, transcribed (five volumes)

[179] Ex. 30 (Weiers Direct) at 8-9.

[180] "Potential Narrowing of Applicants' Route," *In the Matter of the Application for a Route Permit for the Bemidji-Grand Rapids 230 kV Transmission Project,* (May 17, 2010) (E-Docket No. 20105-50526-01).

[181] *See,* Ex. 29 (Lindholm Direct) at 8.17-5 to 8.17-6 and Schedules 5, 6, and 7.

NOTICE

Under the PUC's Rules of Practice and Procedure, Minn. R. 7829.0100 to 7829.3200, exceptions to this Report, if any, by any party adversely affected must be filed within 15 days of the mailing 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 PUC shall make its determination on the applications for the Certificate of Need and Route Permits after expiration of the period to file Exceptions as set forth above, or after oral argument, if such is requested and had in this matter. In accordance with Minn. R. 4400.1900, the PUC shall make a final decision on the Route Permits within 60 days after receipt of this Report.

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