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

IN THE MATTER OF THE APPLICATION OF GREAT RIVER ENERGY AND MINNESOTA POWER FOR A ROUTE PERMIT FOR THE MOTLEY AREA 115 KV TRANSMISSION LINE PROJECT IN MORRISON, CASS AND TODD COUNTIES, MINNESOTA	PUC Docket No. ET2, E015/TL-15-204 OAH Docket No. 19-2500-32714 GREAT RIVER ENERGY AND MINNESOTA POWER PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW

TABLE OF CONTENTS

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

IN THE MATTER OF THE APPLICATION OF GREAT RIVER ENERGY AND MINNESOTA POWER FOR A ROUTE PERMIT FOR THE MOTLEY AREA 115 KV TRANSMISSION LINE PROJECT IN MORRISON, CASS AND TODD COUNTIES, MINNESOTA	PUC Docket No. ET2, E015/15-204 OAH Docket No. 19-2500-32714 GREAT RIVER ENERGY AND MINNESOTA POWER PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW

A public hearing was held before Administrative Law Judge ("ALJ") Jeffrey Oxley on November 19, 2015, at the Motley Staples Middle School in Motley, Minnesota.

Mark Strohfus, Environmental Project Lead; Rick Heuring, Senior Field Representative; Chuck Lukkarila, Project Manager; Paul Woodruff, Transmission Line Engineer; Eric Messerich, Transmission Planning Engineer; Marsha Parlow, Transmission Permitting Analyst; and Jenny Guardia, Communications Coordinator, of Great River Energy, 12300 Elm Creek Boulevard, Maple Grove, MN 55369, attended on behalf of Great River Energy and Minnesota Power ("Applicants").

Richard Davis, Environmental Review Manager, 445 Minnesota Street, Suite 1500, St. Paul, MN 55101 appeared on behalf of the Department of Commerce, Energy Environmental Review and Analysis ("EERA").

Tricia DeBleeckere, Minnesota Public Utilities Commission ("Commission") Staff, 121 Seventh Place East, Suite 350, St. Paul, MN 55101, appeared on behalf of the Commission.

STATEMENT OF ISSUE

Have Applicants satisfied the factors set forth in Minnesota Statutes Section 216E.03 and Minnesota Rules Chapter 7850 for a Route Permit for a 115 kilovolt ("kV") transmission line project in Morrison, Cass, and Todd Counties, Minnesota (the "Project")?

SUMMARY

The Commission concludes that the Applicants have satisfied the criteria set forth in Minnesota law for a Route Permit and the Commission GRANTS the Applicants a Route Permit.

Based on information in the Application, the Environmental Assessment ("EA"), the testimony at the public hearing, written comments, and exhibits received in this proceeding, the Commission makes the following:

FINDINGS OF FACT

I. Applicants.

1. Great River Energy is a not-for-profit generation and transmission cooperative based in Maple Grove, Minnesota. Great River Energy provides electrical energy and related services to 28 member cooperatives, including Crow Wing Power distribution cooperative, which serves the Project area. Great River Energy's distribution cooperatives, in turn, supply electricity and related services to more than 660,000 residential, commercial, and industrial customers in Minnesota and Wisconsin. Crow Wing Power provides electricity and related services to approximately 37,000 residential, commercial, and industrial customers in Minnesota. Approximately 1,500 residential, commercial, and industrial members of this cooperative would benefit from the proposed high voltage transmission line during normal system operation and up to 600 more would benefit during contingency conditions. Great River Energy's transmission network is interconnected with the regional transmission grid to promote reliability, and Great River Energy is a member of the Midwest Reliability Organization ("MRO") and the Midcontinent Independent System Operator, Inc. ("MISO").[1]

2. Minnesota Power ("MP") is an investor-owned public utility headquartered in Duluth, Minnesota. Minnesota Power supplies retail electric service to 143,000 retail customers and wholesale electric service to 16 municipalities in a 26,000-square-mile electric service territory located in northeastern Minnesota. Minnesota Power generates and deliveries electric energy through a network of transmission and distribution lines and substations throughout northeastern Minnesota. Minnesota Power's transmission network is interconnected with the regional transmission grid to promote reliability, and Minnesota Power is a member of the MRO and MISO.[2]

II. Procedural History.

3. On March 5, 2015, Applicants filed with the Commission a Notice of Intent to Submit a Route Permit Application under the Alternative Permitting Process.[3]

4. On March 19, 2015, Applicants submitted their Application for a Certificate of Need and Route Permit ("Application") for the Project.[4] The Application included two route alternatives—the West and East Route Options—extending south from Minnesota Power's "24 Line" 115 kV line to Crow Wing Power's existing Motley Substation, and then a single route extending west and south from the Motley Substation to Crow Wing Power's proposed Fish Trap Lake Substation (collectively, the "Common Route" the West and East Route Options are referred to as the "Proposed Routes").[5]

[1] Ex. 2, at 1-1 to 1-2 (Application).
[2] Ex. 2, at 1-2 (Application).
[3] Ex. 1 (Alternative Process Notification).
[4] Ex. 2 (Application).
[5] Ex. 2, at 1-7, 1-10 (Application).

5. On March 23, 2015, the Commission issued a Notice of Comment Period on Completeness of the Certificate of Need and Route Permit Application.[6]

6. On April 6, 2015, EERA filed its comments and recommendations regarding completeness of the Application and recommended the Application be found complete.[7]

7. On April 17, 2015, the Commission issued a Notice of Commission Meeting for April 30, 2015.[8]

8. On April 20, 2015, Applicants filed affidavits indicating that they provided notice of the Application to the General List, persons who own land on or adjacent to the Proposed Routes, local officials, and agencies.[9]

9. On April 30, 2015, the Commission met and found the Application complete.[10]

10. On May 1, 2015, the Commission and EERA issued a Notice of Public Information and Environmental Assessment Scoping Meeting.[11] This notice was published in the *Morrison County Record* on May 10, 2015, *The Brainerd Dispatch* on May 7, 2015, and the *Staples World* on May 7, 2015, as required under Minnesota Statutes §§ 216E.03, subdivision 4, and 216E.04, subdivision 4, and Minnesota Rule 7850.2100, subpart 2.[12]

11. On May 19, 2015, the Commission and EERA held a Public Information and EA Scoping Meeting at Motley Staples Middle School, Motley, Minnesota, at 6:00 p.m.[13]

12. On May 27, 2015, the Commission issued its Order Accepting the Application as Complete, Directing Use of Alternative Permitting Process, and Granting Variance.[14]

13. On May 27, 2015, Applicants filed newspaper affidavits of publication for the May 19, 2015 Public Information and EA Scoping Meeting.[15]

14. On June 3, 2015, the scoping comment period ended.[16]

---

[6] Ex. 3 (Notice of Comment Period on Completeness and Certificate of Service).

[7] Ex. 4 (Comments and Recommendations on Application Completeness).

[8] Ex. 5 (Notice of Commission Meeting – April 30, 2015 and Certificate of Service).

[9] Ex. 6 (Compliance Filing – Confirmation of Notice).

[10] Ex. 9 (Order Accepting Application as Complete, Directing the Use of Alternative Process, and Granting Variance and Certificate of Service).

[11] Ex. 7 (Notice of Public Information and Environmental Assessment Scoping Meeting and Certificate of Service).

[12] Ex. 8 (Affidavit of Publication – Scoping Meeting Newspaper Notices).

[13] Ex. 7 (Notice of Public Information and Environmental Assessment Scoping Meeting and Certificate of Service).

[14] Ex. 9 (Order Accepting Application as Complete, Directing the Use of Alternative Process, and Granting Variance and Certificate of Service).

[15] Ex. 8 (Affidavit of Publication – Scoping Meeting Newspaper Notices).

[16] Ex. 7 (Notice of Public Information and Environmental Assessment Scoping Meeting and Certificate of Service).

15. The Minnesota Department of Natural Resources ("DNR") filed a comment during the scoping period regarding the scope of the EA.[17]

16. The Minnesota Pollution Control Agency ("MPCA") filed a comment during the scoping period generally concerning applicable permits and best management practices for the Project.[18]

17. The Minnesota Department of Transportation ("MnDOT") filed a comment during the scoping period regarding the scope of the EA, erosion control measures, and vegetation management for the Project.[19]

18. Seventeen public comments were also received during the scoping period.[20]

19. On June 19, 2015, the Commission issued a Notice of Commission Meeting noting that it would consider what action to take concerning route alternatives to be evaluated in the EA.[21]

20. On June 22, 2015, EERA issued comments and recommendations on the EA Scoping Process and Alternative Routes to the Commission.[22]

21. On July 15, 2015, EERA issued its EA Scoping Decision.[23]

22. On September 23, 2015, Applicants submitted reply comments regarding CO_2 externality and regulatory costs.[24]

23. On November 9, 2015, the Commission issued a Notice to State Agency Representatives Regarding Participation in Record Development and Public Hearings.[25]

24. On November 16, 2015, EERA issued the EA for the Project and its Notice of Availability of the EA.[26]

[17] Ex. 11 (DNR – Scoping Comments).
[18] Ex. 12 (MN Pollution Control Agency – Scoping Comments).
[19] Ex. 10 (MN DOT – Scoping Comments).
[20] Ex. 13 (PUB – Public Comment (Scoping)); Ex. 14 (Other – Motley Area Written Public Comments).
[21] Ex. 16 (PUC Notice of Commission Meeting, Certificate of Service and Corrected Version – July 1, 2015).
[22] Ex. 17 (Comments and Recommendations); Ex. 18 (Alternatives Analyzed by DOC EERA Staff).
[23] Ex. 19 (Environmental Assessment Scoping Decision); Ex. 20 (Notice of Environmental Assessment Scoping Decision).
[24] Ex. 21 (Reply Comments – CO_2 Externality and Regulatory Costs).
[25] Ex. 22 (Notice of Public Hearing and Certificate of Service and Memo to State Agency Reps and Certificate of Service).
[26] Ex. 23 (EA); Ex. 24 (Notice of EA Availability).

25. On November 19, 2015, the Administrative Law Judge held a Public Hearing at the Motley Staples Middle School in Motley, Minnesota, at 6:00 p.m.[27]

26. On November 25, 2015, Applicants filed affidavits of publication of the Notice of Public Hearings, confirming that notice for the November 19, 2015, public hearing was published in *The Brainerd Dispatch*, the *Morrison County Record*, and the *Staples World*.[28]

27. On November 30, 2015, Applicants submitted comments regarding the public hearing.[29]

28. On November 30, 2015, DNR submitted comments regarding the Project.[30]

29. In addition, a number of public comments were received during the public hearing comment period.[31]

30. On November 30, the public hearing comment period ended.[32]

III. Description of the Project.

31. The Project, set forth on the attached **Exhibit A**, includes new 115 kV electric facilities needed to meet existing electric load and future electric load requirements in Morrison, Cass, and Todd counties, Minnesota. Great River Energy has an additional need to provide electric service to the Crow Wing Power substation that will serve the proposed Minnesota Pipe Line Company ("MPL") Fish Trap pump station.[33]

32. The Project consists of the following facilities:

- **"24 Line" transmission line – Motley Substation transmission segment (West and East Route Options) –** The Applicants propose two route options for this transmission line segment. Either segment would connect with Minnesota Power's "24 Line" 115 kV transmission[34] line northeast of Motley, Minnesota, and extend to the existing Crow Wing Power 34.5 kV Motley Substation. A motor-operated three-way switch would be installed to interconnect the new

[27] Ex. 22 (Notice of Public Hearing and Certificate of Service and Memo to State Agency Reps and Certificate of Service).

[28] Newspaper Affidavits of Publication, Public Hearing (Nov. 25, 2015), eDocket Document No. 201511-115973-01.

[29] Applicants' Comments – On ALJ Hearing (Nov. 30, 2015), eDocket Document No. 201511-116031-01.

[30] DNR's Comments (Nov. 30, 2015), eDocket Document Nos. 201511-116029-02, 201511-116029-04.

[31] *E.g.*, Exs. A – I; *see also* Public Comment – Public Comment Outside of Open Comment Period (Dec. 10, 2015), eDocket Document No. 201512-116359-01; Public Comment (Dec. 7, 2015), eDocket Document No. 201512-116230-01; Public Comment (Dec. 1, 2015), eDocket Document No. 201512-116060-02.

[32] Ex. 22 (Notice of Public Hearing and Certificate of Service and Memo to State Agency Reps and Certificate of Service).

[33] Ex. 2, at 1-5 to 1-6 (Application).

[34] Ex. 2, at 1-5 to 1-6 (Application). The existing Minnesota Power "24 Line" transmission line segment between the Dog Lake Substation and the Verndale Substation, including where the Motley project will interconnect, will be renamed the "155 Line" transmission line upon completion of the Project.

transmission line to the "24 Line." The West Route Option would require constructing approximately four miles of new 115 kV transmission line. The East Route Option would require constructing approximately five miles of new 115 kV transmission line.

- **Motley Substation – Fish Trap Lake Substation transmission segment (Common Route) –** This transmission line segment would be common to the Project for either the West Route Option or the East Route Option. It would require constructing a new single circuit 115 kV transmission line totaling approximately 10.5 miles from the existing Crow Wing Power Motley Substation to the proposed Crow Wing Power Fish Trap Lake Substation.

- **Dog Lake Substation ring bus conversion –** This component would require converting Minnesota Power's existing Dog Lake Substation to a more reliable ring bus design.

- **"24 Line" transmission line – Dog Lake Substation segment –** As part of the new ring bus design, Applicants propose constructing a new 115 kV transmission line segment extending approximately one-half mile to loop Minnesota Power's "24 Line" 115 kV transmission line into and out of the Dog Lake Substation.

- **Motley Substation conversion –** Converting Crow Wing Power's Motley Substation from 34.5 kV to 115 kV. A manual three-way switch would be installed to provide the 115 kV service to the substation.

- **Fish Trap Lake Substation –** Constructing the new Crow Wing Power Fish Trap Lake 115 kV Substation to serve the electric load of MPL's proposed Fish Trap pump station.

- **Shamineau Tap Switch –** Installing a manual three-way switch along Highway 10 to allow for the future Shamineau Substation to interconnect to the proposed 115 kV transmission line without having to take an outage on the 115 kV transmission line.

33. The majority of the new 115 kV line will consist of single-pole wood structures spaced approximately 250 feet to 400 feet apart. Transmission structures will typically range in height from 60 to 90 feet above ground, depending on the terrain and environmental constraints. The average diameter of the wood structures at ground level is 20 inches.[35]

34. Some sections of the Project will have distribution lines attached to the transmission structures, which is commonly called underbuild. If underbuild is included in a segment of the Project, the spacing of the transmission line structures would be approximately 250 to 350 feet.[36]

[35] Ex. 2, at 4-8 (Application).
[36] Ex. 2, at 4-8 (Application).

35. H-Frame design structures may be used in areas with rugged topography and where longer spans are required to avoid or minimize impacts to wetlands or waterways. Span lengths average 600 to 800 feet, with 1,000-foot spans possible with certain topography. Structure heights typically range from 60 to 90 feet above ground, with taller structures required for exceptionally long spans and in circumstances requiring additional vertical clearance exceeding the National Electrical Safety Code ("NESC") and other agency requirements.[37]

36. The new section of line that would be constructed by Minnesota Power from the Dog Lake Substation to the existing "24 Line" transmission line would be an H-Frame design.[38]

37. For most segments of the Project, Applicants proposed a right-of-way of 100 feet in width.[39]

IV. Need Overview.

38. The Project is designed to meet multiple needs. First, the Project is needed by 2017 to meet the in-service date for the proposed MPL Fish Trap pump station that will be served by the new Crow Wing Power Fish Trap Lake Substation. Second, the Project is needed to address circuit overloads that currently exist on the Dog Lake-Baxter 34.5 kV system and alleviate capacity issues identified on the lines between Dog Lake and Baxter by creating 115 kV connections between Minnesota Power's "24 Line" 115 kV transmission line and the existing Crow Wing Power Motley Distribution Substation and by upgrading the Motley Substation.[40] Third, the Project is also needed to provide a reliable power source for a future substation to meet Crow Wing Power load-serving requirements.[41]

V. Routes Evaluated.

A. Routes Proposed by Applicants.

39. The Project is located in the Minnesota counties of Morrison, Cass, and Todd and would be approximately 15.5-16.5 miles in length. A portion of the Project is located in Becker Township in Cass County at, and south of, the existing Dog Lake Substation. Both the East and West Route Options proposed by Applicants travel south through May Township in Cass County, and into Motley Township in Morrison County. The Proposed Routes then extend westerly and southerly, following to the east of the Morrison and Todd County lines, going through Scandia Valley Township in Morrison County. The Proposed Routes cross into Fawn Lake Township in Todd County just north of the proposed Fish Trap Lake Substation.[42]

[37] Ex. 2, at 4-8 (Application).
[38] Ex. 2, at 4-8 (Application).
[39] Ex. 2, at 4-8 (Application).
[40] Ex. 2, at 5-1 (Application); Hearing Tr., at 113-114, 122, 124) (Crow Wing Power representatives noting need to upgrade Motely Substation and need for future new Shamineau Substation connection.)
[41] Ex. 2, at 1-8, 5-3 (Application); Hearing Tr., at 113-114, 122, 124.
[42] Ex. 2, at 1-10 (Application); Ex. 23, at 15 (EA).

40. Applicants evaluated and rejected three alternative routes:[43]

- **Dog Lake Substation – Fish Trap Lake Substation –** This route is approximately 15.5 miles long extending from Minnesota Power's existing Dog Lake Substation to the proposed Fish Trap Lake Substation. Applicants rejected this route because of its impact on existing and proposed urban development in the City of Motley, because it necessitates a second river crossing, and because of the operational challenges to obtain an extended outage on Minnesota Power's existing 34.5 kV "503 Line" to facilitate the construction of the new 115 kV transmission line. This route was also rejected because it does not facilitate the upgrade of Crow Wing Power's Motley Substation from 34.5 kV to 115 kV.

- **Dog Lake Substation – Ward Substation – Fish Trap Lake Substation –** This route is 23 miles long, extending from Minnesota Power's Dog Lake Substation to Todd-Wadena Electric Cooperative's Ward Substation and continuing to the proposed Fish Trap Lake Substation. Applicants rejected this route because of its additional length, resulting in additional costs and overall impacts. This route also necessitates a second river crossing. The route was further rejected because it does not facilitate the upgrade of Crow Wing Power's Motley Substation from 34.5 kV to 115 kV or the construction of the future Shamineau Substation.

- **"47" Transmission Line – Ward Substation – Fish Trap Lake Substation –** This route is approximately 20 miles extending from Minnesota Power's "47 Line" 115 kV transmission line located in the northernmost part of Section 5 in Eagle Valley Township, Todd County, to the proposed Fish Trap Lake Substation. Applicants rejected this route due to its additional length and resultant additional cost. Additional cost would also result from the need to underbuild nearly 12 miles of 34.5 kV 3-phase sub-transmission line. This route also necessitates a second river crossing. This route was also rejected because it does not facilitate the upgrade of Crow Wing Power's Motley Substation from 34.5 kV to 115 kV or the construction of the future Shamineau Substation.

B. Routes Proposed Through Public Participation.

41. Several alternative routes and sites were introduced during the EA Scoping Decision:

1. Common Route – East of U.S. Highway 10 Alignment Alternatives.

42. There are two alignment alternatives that could be used to extend the Project's Common Route: East of U.S. Highway 10 Alternative (Common Route from Azalea Road to Holt Road) and the East of U.S. Highway 10 Alternative (Common Route from Ridge Road to Holt Road). These alternatives would be used in place of Applicants' Proposed Routes for the

[43] Ex. 2, at 7-1 to 7-2 (Application).

portion of the Common Route extending south from Azalea Road to Holt Road, which was proposed on the west side of the U.S. Highway 10 right-of-way.[44]

2. MP Land East River Crossing Alternative.

43. The MP Land East River Crossing Alternative locates the East Route Option Crow Wing River crossing further south than the Applicants' proposed crossing location, which would place the proposed East Route Option on land currently owned by Minnesota Power once the Crow Wing River crossing is completed. The MP Land East River Crossing Alternative would turn north on Minnesota Power's land and rejoin Applicants' proposed East Route Option.[45]

3. Old Tree Avoidance Alternative.

44. The Project's Common Route extends east along the South Side of Azalea Road, and an old large American elm is located within the Proposed Routes. The Old Tree Avoidance Alternative shifts the Proposed Routes south of the old large American elm tree, which would avoid impacts to the large tree during construction and maintenance of the Project. Applicants accounted for potential to avoid the large tree in the Application; Section 4.1.1 of the Application specifically requests additional route width consideration near the large tree south of Azalea Road.[46]

45. The EA evaluated the Old Tree Avoidance Alternative identified by EERA. Applicants then further refined the Old Tree Avoidance Alternative to accomplish the objective of saving the old large American elm tree while optimizing the route's alignment. The Applicants' revised Old Tree Avoidance Alternative has the same or lesser impacts as the Old Tree Avoidance Alternative.[47]

46. The EA evaluated the Proposed Routes, as well as these alternatives. Maps of the alternatives described above, including Applicants' revised Old Tree Avoidance Alternative, are provided in **Exhibits B.1, B.2, and B.3**.

VI. Transmission Line Structure Types and Spans.

47. Applicants propose to use overhead construction with wood structures. Applicants primarily propose to use single-pole structures. H-Frame structures may be used in areas with rugged topography and where longer spans are required. H-Frame structures will also be used in the new section of line that would be constructed by Minnesota Power from the Dog Lake Substation to the existing "24 Line" transmission line.[48]

VII. Transmission Line Conductors.

[44] Ex. 23, at 120 (EA).
[45] Ex. 23, at 128 (EA).
[46] Ex. 23, at 133 (EA).
[47] Hereinafter, references to the "Old Tree Avoidance Alternative" shall include the alternative evaluated in the EA, as well as Applicants' revised alternative, unless specifically noted.
[48] Ex. 2, at 4-8 (Application).

48. Great River Energy's single-circuit structures will have three single-conductor phase wires and one shield wire. It is anticipated that the phase wires will be 477 thousand circular mil aluminum conductor steel-supported ("ACSR") with seven steel core strands and 26 outer aluminum strands. The shield wire will be 0.528 optical ground wire.[49]

49. Minnesota Power's single-circuit structure will have three single-conductor phase wires and two shield wires. It is anticipated that the phase wires will be 636 ACSR with seven steel core strands and 24 outer aluminum strands.[50]

50. The engineering evidence in the record establishes that the conductors are sufficient to meet the Project's need.

VIII. Transmission Line Route Widths.

51. Applicants are requesting approval of different route widths depending on the existing land uses of the adjacent properties. Total route widths will vary between 250 feet and 995 feet, as follows:[51]

- Where the route extends across open land that does not follow existing roadways, a 250-foot route width is requested.

- Where the route follows rural roads or county highways, a 300-foot route width is requested, extending 150 feet perpendicular from the road centerline in each direction.

- Where the route follows U.S. Highway 10, the requested route extends 250 feet west of the outside road edge of southbound Highway 10, 250 feet east of the outside road edge of northbound Highway 10, and encompasses the entire roadway and median area between these outer edges. The total route width for the Project segment along U.S. Highway 10 ranges between 975 and 995 feet due to non-parallel centerline alignments of the northbound and southbound traffic lanes which results in some variation in the width of the median.

- Additional route width is requested at the points where the new transmission line segments interconnect with Minnesota Power's "24 Line" transmission line; where both the East and West Option route segments cross the Crow Wing River; in the area of the Motley Substation; near a large native elm tree located on the south side of Azalea Road; along the East Route Option in Cass County where County Road 31 intersects 132nd Street SW; in the area of the proposed MPL pump station and Crow Wing Power Fish Trap Lake Substation; and, in specific areas to allow for the use of guy wires.

[49] Ex. 2, at 4-8 (Application).
[50] Ex. 2, at 4-8 (Application).
[51] Ex. 2, at 4-1 to 4-2 (Application).

IX. Transmission Line Right-of-Way.

52. For most segments of the new transmission line, a 100-foot-wide permanent right-of-way (50 feet on each side of the transmission line centerline) will be acquired. In special restrictive or physically limiting areas, Applicants may consider a reduced right-of-way width of 70 feet (35 feet each side of the transmission centerline). Where the transmission line follows along existing distribution lines or roadways, a portion of the proposed transmission line right-of-way would overlap and be common with the existing distribution line right-of-way and/or the existing road right-of-way.[52]

X. Project Schedule.

53. Provided Applicants obtain a certificate of need and route permit by early 2016, Great River Energy plans to commence construction of the Project late in 2016 and complete it in late summer 2017. Great River Energy anticipates that construction will take approximately eight months and that the entire Project will be energized in August 2017.[53]

XI. Project Costs.

54. Total Project costs are estimated to be approximately $16-17 million, depending on which route option is approved. Total costs are summarized below in Table 1:[54]

Table 1: Estimated Project Costs

	West Route Cost ($)	East Route Cost ($)
Great River Energy		
115 kV Transmission Line	$9,079,000	$10,101,000
Switches, Meter	$960,000	
Motley Substation Upgrade	$1,000,000	
Fish Trap Substation	$1,000,000	
Great River Energy Total	$12,039,000	$13,061,000
Minnesota Power		
115 kV Transmission Line (Dog Lake Substation to "24 Line")	$1,140,000	
Dog Lake Substation Upgrade	$2,680,000	
Distribution	$100,000	
Communications	$10,000	
Minnesota Power Total	$3,930,000	
Total:	**$15,969,000**	**$16,961,000**

[52] Ex. 2, at 4-8 (Application).
[53] Ex. 2, at 4-15 (Application).
[54] Ex. 2, at 4-12 (Application).

XII. Permittees.

55. The permittees for the Project are Great River Energy and Minnesota Power.

XIII. Public and Local Government Participation.

A. Public Comments.

56. Approximately 50 people attended the joint public information and EA scoping meeting held by Commission staff and EERA on May 19, 2015. In addition, EERA received comments from 11 members of the public during the EA scoping comment period.[55]

57. Alternative routes to the Proposed Routes were also discussed during the scoping meeting and in written comments received during the scoping period.[56]

58. Multiple members of the public spoke at the public hearing on November 19, 2015.[57] Several landowners urged consideration of a new partial route alternative that would avoid properties located on U.S. Highway 10.[58] Most of the landowners who expressed support for this partial route alternative appear to live on the east side of U.S. Highway 10.[59] The alternative route crosses properties that are not located within or adjacent to any of the routes included in the EA. As a result, the alternative route segment would impact landowners who did not have notice of the proceeding in general or the public hearing specifically.

59. At the public hearing, landowners also generally expressed concerns about impacts to U.S. Highway 10 and adjacent properties.[60] In general, landowners expressed concerns about an alignment on the east side of U.S. Highway 10.[61] In addition, a representative from Pine Ridge Golf Club spoke against the East of U.S. Highway 10 Alternatives and described the potential negative impacts of those alternatives on the golf course.[62]

60. On November 30, 2015, Applicants submitted comments regarding the partial route alternative presented by landowners at the November 19, 2015 hearing.[63] Applicants stated that the partial alternative had not been reviewed in the EA. Applicants further noted that the alternative does not provide connections at either the future Shamineau Substation or the existing Motley Substation and therefore does not meet Project needs. Applicants also identified several areas where this alternative would have greater environmental impacts than the Proposed Routes. For these reasons, it is not a feasible or reasonable alternative.

---

[55] Ex. 17, at 4 (Comments and Recommendations).
[56] Ex. 17, at 4 (Comments and Recommendations).
[57] *See* Hearing Tr., at 2-3.
[58] *See, e.g.*, Hearing Tr., at 80-88.
[59] *E.g.*, Hearing Tr., at 27-32, 80-88.
[60] *See, e.g.*, Hearing Tr., at 27-32 (Mark Frisk Comments); 47-49 (Melissa Moulton Comments);.
[61] *E.g.*, Hearing Tr., at 27-32 (Mark Frisk Comments).
[62] *See* Hearing Tr., at 80-82.
[63] Applicants' Comments – On ALJ Hearing (Nov. 30, 2015), eDocket Document No. 201511-116031-01, at 1-3.

61. Multiple members of the public provided written comments during the public hearing comment period. Comments generally related to route alternatives and mitigation of the Project's environmental impacts.[64]

62. One of the written comments received during the public hearing comment period was from Patrick and Laurie Humphrey. The Humphreys requested that, in the event the East Route Option were selected, that it be modified to run along the west side of their property using an abandoned roadbed, formerly known as Cass County 101.[65] Applicants are committed to work with the Humphreys and any additional impacted landowners to see if this request can be accommodated in the post-permit process, which would require all impacted landowners to agree with the route and alignment changes.

B. Local Government and State Agency Participation.

63. During the EA scoping comment period, EERA received written comments from three state agencies and one federal agency.[66]

64. During the public hearing and subsequent comment period, written comments were received from DNR.[67] In addition, Applicants have received comments from the following agencies, as detailed below:[68]

- On November 21, 2014, the United States Army Corps of Engineers ("USACE") notified Applicants that the Project would be subject to USACE jurisdiction if it involved activity in navigable waters of the United States or deposition of dredged or fill material into waters of the United States.

- On September 22, 2014, DNR provided Applicants with information about DNR review of the Project for potential impacts to rare features.

- On October 16, 2014, the Minnesota State Historic Preservation Office ("SHPO") notified Applicants that it recommended a Phase I archeological survey be completed for the Project.

- On October 15, 2015, the United States Fish and Wildlife Service ("USFWS") notified Applicants that Applicants correctly identified the listed and proposed to be listed species in the counties crossed by the Project; however, there were no known occurrence records in close proximity to the Project area. USFWS further noted that, if removal of suitable summer roosting habitat for the Northern Long-

[64] *See* Exs. A – I; *see also* Public Comment – Public Comment Outside of Open Comment Period (Dec. 10, 2015), eDocket Document No. 201512-116359-01; Public Comment (Dec. 7, 2015), eDocket Document No. 201512-116230-01; Public Comment (Dec. 1, 2015), eDocket Document No. 201512-116060-02.

[65] *See* Public Comment (Dec. 7, 2015), eDocket Document No. 201512-116230-01, at 6.

[66] Ex. 17, at 4 (Comments and Recommendations).

[67] *See* Ex. 11; DNR's Comments (Nov. 30, 2015), eDocket Document Nos. 201511-116029-02, 201511-116029-04.

[68] *See* Ex. 2, at Appendix J.

Eared Bat between April 1 and September 30 was anticipated, further consultation with USFWS could be required.

FACTORS FOR A ROUTE PERMIT

65. 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."[69]

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

> (1) evaluation of research and investigations relating to the effects on land, water and air resources of large electric power generating plants and high-voltage transmission lines and the effects of water and air discharges and electric and magnetic fields resulting from such facilities on public health and welfare, vegetation, animals, materials and aesthetic values, including baseline studies, predictive modeling, and evaluation of new or improved methods for minimizing adverse impacts of water and air discharges and other matters pertaining to the effects of power plants on the water and air environment;
>
> (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;[70]
>
> (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;

[69] MINN. STAT. § 216E.03, Subd. 7.
[70] Factor 4 is not applicable because Applicants are not proposing to site a large electric generating plant.

(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.[71]

67. In addition, Minnesota Statutes Section 216E.03, Subdivision 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."

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

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

B. effects on public health and safety;

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

D. effects on archaeological and historic resources;

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

[71] Minn. Stat. § 216E.03, Subd. 7.

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;[72]

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.[73]

69. There is sufficient evidence on the record for the Commission to assess the Proposed Routes and route alternatives using the criteria and factors set forth above.

APPLICATION OF STATUTORY AND RULE FACTORS

I. Application of Routing Factors to the Proposed Routes and Route Alternatives.

A. Effects on Human Settlement.

70. Minnesota law requires consideration of the Project's effects on human settlement, including displacement of residences and businesses, noise created during construction and by operation of the Project, and impacts to aesthetics, cultural values, recreation, and public services.[74]

71. Impacts to human settlements resulting from the Project are anticipated to be minimal to moderate.[75]

[72] This factor is not applicable because it applies only to power plant siting.
[73] MINN. R. 7850.4100.
[74] *See* MINN. STAT. § 216E.03, subd. 7(b); MINN. R. 7850.4100, subp. A.
[75] Ex. 23, at 60 (EA).

1. Displacement.

72. No residences or business will be displaced by the Project, and property value impacts are anticipated to be minimal.[76] Route alternatives are anticipated to result in similar impacts.[77]

2. Noise.

73. The MPCA has established standards for the regulation of noise levels.[78]

74. The most restrictive MPCA noise limits are 60-65 A-weighted decibels ("dBA") during the daytime and 50-55 dBA during the nighttime.[79]

75. Noise from the Project may arise from construction activities and the normal operation of transmission lines and substations. For each of these, noise impacts are anticipated to be minimal.[80]

76. Construction noise may occur during daytime hours as the result of heavy equipment operation and increased vehicle traffic associated with the Project. Any exceedance of MPCA daytime noise limits would be temporary. Exceedance of MPCA nighttime noise limits is not expected.[81]

77. In foggy, damp, or light rain conditions, transmission lines may produce audible noise higher than background levels. Applicants estimated noise levels for the Project's transmission line. The data indicate that any noise levels for the Project's transmission line are within Minnesota noise standards and likely less than ambient noise levels in the Project area.[82]

78. The Project includes one new substation and modifications at two existing substations. The Motley and Fish Trap Lake substations will have additional or new transformers, which will add new noise-producing equipment. The Dog Lake Substation will not have any new noise-producing equipment added to the facility. Applicants' modeling indicated that noise levels at the Motley and Fish Trap Lake substations should comply with the state noise standard of 50 dBA at distances greater than 40 feet from the transformers at the substations. The noise level at the nearest residence to each of the substations is estimated to be 33 dBA or less, which is within Minnesota noise standards.[83]

79.

[76] Ex. 23, at 60, 68 (EA).
[77] *E.g.*, Ex. 23, at 122 (EA).
[78] *See* Ex. 23, at 65-66 (EA).
[79] Ex. 23, at 65-66 (EA).
[80] Ex. 23, at 65 (EA).
[81] Ex. 23, at 65-66 (EA).
[82] Ex. 23, at 66 (EA).
[83] Ex. 23, at 67 (EA).

80. Noise impacts from the Project are anticipated to be minimal and within Minnesota noise standards. The primary means of mitigating noise impacts is routing to avoid areas where residents live, work, and congregate. Noise impacts associated with substations can be mitigated by natural or built sound barriers. The noise generated by the MPL Line 4 Fish Trap pump station will be monitored during operation to confirm modeling efforts and, if noise levels are greater than Minnesota noise standards, mitigation measures will be instituted.[84]

3. Aesthetics.

81. The landscape in the Project area includes rural residences, commercial highway development, forested areas, agricultural lands, wetlands, and lakes. The City of Motley is the largest community in the area and includes commercial and residential development. Because of the topography and interspersed forested areas, viewsheds in the Project area are relatively limited except along natural corridors and manmade corridors.[85]

82. There are no residences, non-residential buildings, or commercial buildings within 250 feet either side of the anticipated alignment for the Project to connect the Minnesota Power Dog Lake Substation and Minnesota Power "24 Line".[86]

83. The number of residences, non-residential buildings, and commercial buildings in or near the Project area are provided in **Table 2** below:[87]

Table 2: Distance of Buildings from Anticipated Alignment

Transmission Line Segment	**Number of Residences within Various Distances of Either Side of Transmission Line Centerline**					
	0-50'	**50-100'**	**100-150'**	**150-200'**	**200-250'**	**Total**
Dog Lake Substation and Tap Line to "115" Transmission Line	0	0	0	0	0	0
West Option, "115" Transmission Line – Motley Substation	0	2	2	2	2	8
East Option, "115" Transmission Line – Motley Substation	0	1	7	3	5	16
Motley Substation – Fish Trap Lake Substation	4	6	3	0	2	15

84. The proposed MP Dog Lake Substation expansion will occur on the east and south sides of the existing substation. There are no residences within the Proposed Routes on

[84] Ex. 23, at 68 (EA).
[85] Ex. 23, at 61 (EA).
[86] Ex. 23, at 62 (EA).
[87] Ex. 2, at 9-5 (Application).

either side of the east or south sides of the existing substation. The proposed Crow Wing Power Motley Substation expansion will occur adjacent to the existing substation footprint, and there are no residences within the Proposed Routes near the Motley Substation. The proposed Fish Trap Lake Substation will be constructed in an area that is currently a mix of grassland, shrubland, and forested area, and adjacent to the existing MPL Line 4 petroleum pipeline. There are no residences within the Proposed Routes near the proposed Fish Trap Lake Substation.[88]

85. The West Route Option has a greater potential to have visual impacts when compared to the East Route Option. The West Route Option will require the construction of a new river crossing on the Crow Wing River, which will occur in a relatively undisturbed portion of the river. The Project will introduce new and relatively taller structures and more conductors into the Project area, but these introductions will minimally impact investments and expectations related to aesthetics in the area. Impacts related to construction of the Project are anticipated to be minimal and temporary.[89]

86. Aesthetic impacts due to the Project are anticipated to be minimal to moderate.

87. The primary strategy for minimizing aesthetic impacts is prudent routing. Aesthetic impacts can be minimized by utilizing existing rights-of-way and avoiding residences by placing the alignment away from residences. To a great extent the Proposed Routes and anticipated alignment implement these strategies. The Proposed Routes follow existing rights-of-way for approximately 98-99% of its length, and the alignment is located along rights-of-way away from most residences. Three residences are within the anticipated right-of-way, but none is expected to be displaced. Applicants have been in contact with the landowners and stated that additional efforts will be made to ensure the residents' aesthetic concerns are addressed during structure placement.[90]

88. Aesthetic impacts can also be mitigated by ensuring that damage to natural landscapes during construction is minimized. Applicants will work with landowners to best locate structures and to minimize damage to vegetation and natural landscapes. Commission route permits require permittees to minimize vegetation removal in constructing the line and to consider landowner input in locating structures.[91]

89. The route alternatives have similar aesthetic impacts to the Proposed Routes and are minimal.[92]

4. Cultural Values.

90. No impacts to cultural values are anticipated as a result of the Project. The Project will not adversely impact the work or recreation of residents in the Project area that underlie the area's cultural values. Nor will the Project adversely impact geographical features

[88] Ex. 23, at 63 (EA).
[89] Ex. 23, at 60 (EA).
[90] Ex. 23, at 64 (EA).
[91] Ex. 23, at 64-65 (EA).
[92] Ex. 23, at 121, 129, 133 (EA).

that inform these values. The Project will provide a more stable power source to the area, and is anticipated to support the local way of life.[93]

91. With respect to the Old Tree Avoidance Alternative, residents within the Project area have indicated that the large native elm tree has local cultural value.[94]

5. Recreation.

92. The Project is located in a relatively rural area with a diversity of recreation and tourism resources. The Project area includes parks, a golf course, trails, lakes, rivers, streams, state wildlife management areas ("WMAs"), Scientific and Natural Areas ("SNAs"), and county and state forest lands. However, there are no WMAs, SNAs, or lakes within or directly adjacent to the Proposed Routes. Popular outdoor activities in the Project area include fishing, hunting, boating, hiking, golfing, riding ATVs, and snowmobiling.[95]

93. Impacts to recreation and tourism as a result of the Project are anticipated to be minimal. Recreational resources are, generally, located away from the Proposed Routes. Although there may be aesthetic impacts arising from the Project, these impacts are not expected to impact recreation decisions. Further, most tree clearing will be adjacent to existing road and utility rights-of-way, which should minimize potential impacts on wildlife viewing in the Project area.[96]

94. The East of U.S. Highway 10 Alternative (Common Route from Azalea Road to Holt Road) and the East of U.S. Highway 10 Alternative (Common Route from Ridge Road to Holt Road) would place portions of the right-of-way on the Pine Ridge Golf Club property. Clearing of the right-of-way to construct the Project would result in the clearing of approximately 6.4 acres of forested areas along the west edge of the property, which currently provides screening between the property and U.S. Highway 10. This could impact the attractiveness of the property to potential customers.[97]

6. Public Service and Infrastructure.

95. Impacts to roads and highways due to the Project are anticipated to be minimal and temporary. Minor, temporary impacts to roads may occur during construction of the Project. No impacts to roads or highways are anticipated after the Project has been constructed.[98]

96. There are no known airports within the Project area. There is a private airstrip (Morey's) near the Project Area. MnDOT was contacted to identify potential Project impacts to

[93] Ex. 23, at 72-73 (EA).
[94] Ex. 23, at 134 (EA).
[95] Ex. 23, at 92 (EA).
[96] Ex. 23, at 93 (EA).
[97] Ex. 23, at 123 (EA).
[98] Ex. 23, at 86 (EA).

local airports and determined that the Project would not have a significant effect. Based on the Project's height and distances to local airports, no impacts to airport operations are anticipated.[99]

97. No impacts to water utilities or natural gas service are anticipated as a result of the Project. The electrical transmission system in the Project area will change as a result of the Project, but no long term adverse impacts to electrical service are anticipated. Some distribution lines may experience temporary service outages during Project construction, but Applicants will minimize the impact of temporary outages during construction planning.[100]

98. No impacts to emergency services are anticipated as a result of the Project.[101]

99. The route alternatives are anticipated to have similar (and minimal) impacts on public services as the Proposed Routes.[102]

B. Effects on Public Health and Safety.

100. Minnesota high voltage transmission line routing factors require consideration of the Project's potential effect on health and safety.[103]

1. Construction and Operation of Facilities.

101. The Project will be designed in compliance with local, state, NESC, and Applicant's standards regarding clearance to the ground, clearance to crossing utilities, strength of materials, and right-of-way widths.[104]

102. Construction crews and/or contract crews would comply with local, state, and NESC standards regarding installation of facilities and standard construction practices. Applicant's established safety procedures, as well as industry safety procedures, would be followed during and after installation of the transmission lines, including clear signage during all construction activities.[105]

103. The Project would be equipped with protective devices to safeguard the public if an accident occurs and a structure or conductor falls to the ground. The existing substations are already equipped with breakers and relays located where existing transmission lines connect to the substations. The protective equipment is designed to de-energize the transmission lines, should such an event occur.[106]

2. Electric and Magnetic Fields.

[99] Ex. 23, at 87 (EA).
[100] Ex. 23, at 88 (EA).
[101] Ex. 23, at 89 (EA).
[102] Ex. 23, at 122, 129 (EA).
[103] MINN. STAT. § 216E.03, subd. 7(b)(1); MINN. R. 7850.4100, subp. B.
[104] Ex. 2, at 9-2 (Application.
[105] Ex. 2, at 9-2 (Application).
[106] Ex. 2, at 9-2 (Application).

104. There are no federal standards for transmission line electric fields.

105. The Commission has imposed a maximum electric field limit of 8kV/m measured at one meter above the ground at the edge of the right-of-way.

106. The calculated electric fields for the Project are less than the maximum limit of 8 kV/m prescribed by the Commission.

107. There are no federal or state regulations for the permitted strength of magnetic fields from transmission lines.

108. Research has not been able to establish a cause-and-effect relationship between exposure to magnetic fields and adverse health effects.

109. The potential impacts of EMF on human health were at issue in the Route Permit proceeding for the Brookings County to Hampton 345 kV transmission line. In that proceeding, ALJ Luis found that: "The absence of any demonstrated impact by EMF-ELF 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 EMF-ELF is adequately protective of human health and safety."[107]

110. Similarly, in the Route Permit proceeding for the St. Cloud-Fargo 345 kV transmission line, the ALJ 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."[108]

111. Impacts to public health and safety along the West Route Option are anticipated to be similar to those along the East Route Option.[109] The route alternatives are expected to have similar impacts as the Proposed Routes.[110]

112. There is no indication that any significant impact on human health and safety will arise from the Project or any of the route alternatives.[111]

---

[107] *See In re Route Permit Application by Great River Energy and Xcel Energy for a 345 kV Transmission Line from Brookings County, South Dakota to Hampton, Minnesota*, Docket No. ET-2/TL-08-1474, ALJ's Findings of Fact and Conclusions of Law at 44 ¶ 216 (Apr. 22, 2010), eDocket Document No. 20104-49478-01, *adopted as amended*, Commission Order at 8 (Sept. 14, 2010), eDocket Document No. 20109-54429-01.

[108] *In re Application for a Route Permit for the Fargo to St. Cloud 345 kV Transmission Line Project*, Docket No. ET-2, E002/TL-09-1056, ALJ's Findings of Fact, Conclusions of Law at 23 ¶ 125 (Apr. 25, 2011), eDocket Document No. 20114-61700-01, *adopted as amended*, Commission Order at 2 (June 24, 2011), eDocket Document No. 20116-64023-01.

[109] Ex. 23, at 114 (EA).

[110] Ex. 23, at 122, 129, 134 (EA).

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

113. Minnesota's high voltage transmission line routing factors require consideration of the Project's impacts to land-based economies—specifically, agriculture, forestry, tourism, and mining.[112]

114. Land-based economies in the Project area include agriculture, forestry, recreation, and tourism. Impacts to these operations are anticipated to be minimal and can be mitigated.[113]

1. Agriculture.

115. Agricultural lands in the Project area consist of croplands and grasslands. Crops grown in the area include corn, soybeans, hay, and vegetables. Farms in the area raise a variety of livestock.[114]

116. Approximately 6.5 miles of the up to 16.5 miles of the Proposed Routes is in agricultural production. With a right-of-way of 100 feet, the Project's transmission line will cross approximately 79 acres of farmland. However, the permanent impact to agricultural operations is much less because agricultural land within a transmission right-of-way is generally available for agricultural production. The amount of land that will be permanently removed from agricultural production as a result of the Project is approximately 392 feet.[115]

117. Temporary impacts, such as soil compaction and crop damage, may occur during construction. Applicants have indicated that they will mitigate agricultural impacts by, among other things: limiting movement of crews and equipment on the right-of-way; repairing and restoring areas disturbed to pre-construction contours; repairing ruts and soil compaction; repairing damages to ditches, tile, terraces, and roads; avoiding irrigation systems; developing a construction schedule to minimize agricultural impacts; and compensating landowners for crop and property damage. In addition, Commission route permits require permittees to compensate landowners for damage to crops and drain tile.[116]

118. As a result of the Project's routing and mitigation measures, impacts to agricultural operations as a result of the Project are anticipated to be minimal.[117]

2. Forestry.

119. Forested lands are prevalent within the Project area. Forest stands in the Project area commonly include jack pine, northern pine oak, northern red oak, aspen, birch, red pine, and white pine. Treed windbreaks and shelter belts are common near residences and along roadways

---

[111] Ex. 23, at 76-81, 122, 129, 134 (EA).
[112] MINN. STAT. § 216E.03, subd. 7(B)(5); MINN. R. 7850.4100, subp. C.
[113] Ex. 23, at 89 (EA).
[114] Ex. 23, at 89 (EA).
[115] Ex. 23, at 89-90 (EA).
[116] Ex. 23, at 90-91 (EA).
[117] Ex. 23, as 89-91 (EA).

and field edges. Forested lands in the Project area are routinely logged by the forestry industry and for personal use.[118]

120. Geographic Information Systems ("GIS") data for National Forest Lands, State Forest Lands, and DNR Forest Stand Inventories was reviewed within the Project Area. Three DNR Forest Stand Inventory areas were identified in close proximity to the anticipated alignment of the Common Route, and the closest area is approximately 0.16 miles from the anticipated alignment. The Common Route, West Route Option, East Route Option, and Dog Lake Substation to Minnesota Power "24 Line" segment do not cross any known federal, state, or locally identified areas of forestry interest.[119]

121. For the safe operation of the transmission line, tall-growing trees are not allowed in transmission rights-of-way. Applicants' anticipated alignment for the West Route Option crosses approximately 24 acres of forested land, and Applicants' anticipated alignment for the East Route Option crosses approximately 14 acres of forested lands. Applicants' anticipated alignment for the Common Route crosses approximately 36 acres of forested lands.[120]

122. Impacts to forested areas and to forestry operations due to the Project are anticipated to be minimal to moderate.[121] Impacts to forested areas and forestry operations can be avoided and minimized by prudent routing and prudent placement of structures within the route. Applicants have attempted to minimize forested lands in some areas by siting the Proposed Routes adjacent to existing utility and road rights-of-way. In the case of windbreaks comprised of vegetation that, when mature, does not exceed 15 feet in height, Applicants will consider allowing vegetation to remain at the outer edge of the right-of-way. Maintaining compatible vegetation at the edges of the new right-of-way and compensation for right-of-way vegetation removal will be negotiated with individual landowners during easement discussions.[122]

123. The West Route Option would result in clearing approximately 24 acres of forested lands; the East Route Option would result in clearing approximately 14 acres of forested lands. The East Route Option is anticipated to minimize forestry impacts.[123]

3. Mining.

124. There are no mining activities within the vicinity of the Project area, so no impacts to mining activities are anticipated.[124]

125. In general, the route alternatives are anticipated to have similar impacts on land-based economies as the Proposed Routes.[125]

---

[118] Ex. 23, at 91 (EA).
[119] Ex. 23, at 91 (EA).
[120] Ex. 23, at 91 (EA).
[121] Ex. 23, at 91 (EA).
[122] Ex. 23, at 92 (EA).
[123] Ex. 23, at 115 (EA).
[124] Ex. 23, at 92 (EA).

D. Effects on Archeological and Historic Resources.

126. Minnesota Rule 7850.4100, subpart D requires consideration of the effects on historic and archeological resources.

127. To determine potential impacts on known archeological and historic resources, Applicants conducted a review of records at SHPO. The review indicated that there are 24 previously recorded archeological sites in the review area, which included the Proposed Routes and a one-mile buffer area around the Proposed Routes. Twenty sites are located along the Crow Wing River, and one of the sites may be within or close to the West Route Option crossing of the Crow Wing River. Based on the review, there is a high potential that the Proposed Routes could impact unrecorded archeological sites. Because of this potential SHPO recommended that a Phase I archeological survey be conducted.[126]

128. Applicants' review of SHPO records also indicated that there are four previously recorded historic structures within one miles of the Proposed Routes. One of the sites is located to the north of the existing Motley Substation. The Project is not likely to impact this resource during construction.[127]

129. Applicants have indicated that work will be stopped and SHPO staff will be consulted in the event archeological sites or resources are identified during Project construction. Consultation with SHPO concerning archeological resources encountered during construction is a standard Commission route permit condition.[128]

130. Potential impacts to archeological and historic resources are anticipated to be higher along the West Route Option than along the East Route Option because the Crow Wing River crossing associated with the West Route Option would have a greater likelihood of encountering previously non-recorded archeological sites.[129]

131. The route alternatives are anticipated to have similar impacts to archeological and historic resources as the Proposed Routes.[130]

E. Effects on Natural Environment.

132. Minnesota's high voltage transmission line routing factors require consideration of the Proposed Routes' effect on the natural environment, including effects on air and water quality resources and flora and fauna.[131]

1. Air Quality.

---

[125] Ex. 23, at 122-23, 129, 134 (EA).
[126] Ex. 23, at 93 (EA).
[127] Ex. 23, at 94 (EA).
[128] Ex. 23, at 94 (EA).
[129] Ex. 23, at 115 (EA).
[130] Ex. 23, at 123, 130, 134 (EA).
[131] MINN. STAT. § 216E.03, subd. 7(b)(1)-(2); MINN. R. 7850.4100, subp. E.

133. No significant impacts to air quality are anticipated from the Project. Ozone and nitrous oxide emissions along transmission lines are generally directly linked to corona production. Transmission lines below 161 kV are generally operating at too low of a voltage to produce significant amounts of corona. The Project transmission lines will operate at a maximum of 121 kV, which is anticipated to produce minimal corona under normal operating conditions. Ozone and nitrous oxide emissions are anticipated to be less than state and federal standards. The impacts of any emissions are anticipated to be relatively minor.[132]

134. Impacts due to construction dust and equipment exhaust are anticipated to be minor and temporary.[133]

2. Water Quality and Resources.

135. There are several lakes in the Project area. However, the Proposed Routes do not cross or run adjacent to any lakes. Lake impacts are not anticipated to result from construction or operation of the Project.[134]

136. The Project will not directly impact the water surface or channel bottoms of any of the rivers or streams in the Project area. However, the transmission line will require overhead crossings of various rivers and streams. The West Route Option crosses the Crow Wing River, the East Route Option crosses Seven Mile Creek and the Crow Wing River, and the Common Route crosses an unnamed tributary to Fish Trap Creek, twice. Because the Project avoids or spans surface waters in the Project area, impacts to surface waters are anticipated to be minimal. There is a potential for adverse impacts due to vegetation clearing, ground disturbance, and construction traffic during construction. The Project requires a number of permits and licenses from state and federal agencies, many of which are directed at the prevention, and minimization and mitigation of water resource impacts.[135]

137. The Project is not anticipated to alter existing water drainage patterns, alter existing floodplain elevations, or increase flood susceptibility in the area. Thus, impacts to the 100-year floodplain in the Project area are anticipated to be minimal.[136]

138. The Project is located in Minnesota's central groundwater province. Impacts to groundwater are anticipated to be minimal. Impacts can be mitigated by utilizing measures to prevent impacts to surface waters. Direct impacts to groundwater are anticipated to be minimal due to anticipated minimal use of concrete foundations and the relatively low solubility of concrete components.[137]

139. Because most wetlands within the Proposed Routes can be avoided or spanned, impacts to wetlands are anticipated to be minimal. Forested wetlands within the Project right-of-

[132] Ex. 23, at 85-86 (EA).
[133] Ex. 23, at 86 (EA).
[134] Ex. 23, at 95 (EA).
[135] Ex. 23, at 95 (EA).
[136] Ex. 23, at 96 (EA).
[137] Ex. 23, at 96-97 (EA).

way will likely undergo a permanent change of vegetation type as a result of the Project. Applicants do not anticipate that a general permit from USACE under Section 404 of the Clean Water Act will be required for the Project, but will conduct restoration and construction in accordance with such a permit if it is deemed necessary. Commission route permits generally require permittees to avoid and minimize wetland impacts.[138]

140. Impacts to water resources for the West Route Option and the East Route Option are anticipated to be similar and minimal.[139]

141. Impacts to water resources for the route alternatives are anticipated to be similar to the Project and minimal.[140]

3. Flora.

142. Potential impacts to flora due to the Project are anticipated to be minimal to moderate. Impacts to forested areas are anticipated as a result of construction and maintenance of the Project. The Project is anticipated to impact 50-60 acres of forested land. Impacts to other vegetative communities, such as agricultural fields and non-forested wetlands, are anticipated to be minimal.[141]

143. Applicants have committed to minimizing the introduction and spread of invasive species.[142]

144. Mitigation and restoration measures for impacts to flora are standard Commission route permit conditions.[143]

145. Impacts to flora are anticipated to be minimal for the East and West Route Options.[144]

146. Impacts to flora are anticipated to be similar to the Proposed Routes and minimal to moderate for the East of U.S. Highway 10 Alternative (Common Route from Azalea Road to Holt Road) and the East of U.S. Highway 10 Alternative (Common Route from Ridge Road to Holt Road).[145]

147. For the MP Land East River Crossing Alternative, impacts to flora are anticipated to be similar to the Proposed Routes. However, the Proposed Routes' tree clearing would be completed along the edges of forested areas where tree clearing has previously occurred, and the MPC Land East River Crossing Alternative would result in creating a short new utility right-of-

[138] Ex. 23, at 97-98 (EA).
[139] Ex. 23, at 115 (EA).
[140] Ex. 23, at 123, 130, 134 (EA).
[141] Ex. 23, at 100 (EA).
[142] Ex. 23, at 100-01 (EA).
[143] Ex. 23, at 101 (EA).
[144] Ex. 23, at 115, 118 (EA).
[145] Ex. 23, at 123 (EA).

way through the currently intact forested area on the MP-owned land east of the Crow Wing River.[146]

148. Impacts to flora along the Old Tree Avoidance Alternative are anticipated to be similar to those along the Proposed Routes and minimal to moderate. The Old Tree Avoidance Alternative may result in additional impacts to the existing forested area to the east of the large native elm tree location, depending on final design.[147]

4. Fauna.

149. Potential impacts to fauna due to the Project are anticipated to be minimal. Avian species could be impacted by the Project through collision with transmission line conductors. However, there are mitigation strategies that can be implemented to minimize these impacts. Thus, impacts to avian species are anticipated to be minimal.[148]

150. DNR identified the Crow Wing River crossing as an area of concern. Applicants will work with DNR and USFWS to identify areas where transmission line marking and/or alternate structures are needed to reduce the likelihood of collisions. DNR has also indicated that an Avian Mitigation Plan should be developed for the Project.[149]

151. Impacts to fauna along the West Route Option are anticipated to be similar to those along the East Route Option and minimal.[150] However, it is anticipated that the West Route Option would result in greater impacts to the natural environment than the East Route Option because it will result in the construction of a new overhead crossing of the Crow Wing River. [151]

152. Impacts to fauna along the route alternatives are anticipated to be similar to the Proposed Routes.[152]

F. Effects on Rare and Unique Natural Resources.

153. Minnesota's high voltage transmission line routing factors require consideration of the Proposed Routes' effect on rare and unique natural resources.[153]

154. There are no federally listed plant species and three state listed plant species (beach heather, Drummond's campion, and clustered bur-reed) in the Project area. The West Route Option would cross one area of moderate biodiversity, and the Common Route intersects one area of high biodiversity in two locations, four areas of biodiversity ranked as below, and

[146] Ex. 23, at 130 (EA).
[147] Ex. 23, at 134-35 (EA).
[148] Ex. 23, at 101-02 (EA).
[149] Ex. 23, at 102 (EA).
[150] Ex. 23, at 115 (EA).
[151] Ex. 23, at 115 (EA).
[152] Ex. 23, at 124, 130, 135 (EA).
[153] MINN. STAT. § 216E.03, subd. 7(b)(1); MINN. R. 7850.4100, subp. F.

three areas of moderate biodiversity. Portions of the high biodiversity site crossed by the Common Route are identified as Native Plant Communities.[154]

155. DNR has indicated that there are records of the following rare or threatened animal species in the vicinity of the Project area: American bittern; red-shouldered hawk, least darter, bald eagle, northern barrens tiger beetle, black sandshell, creek heelsplitter, and Blanding's turtle.[155]

156. In addition, the Northern Long-Eared Bat ("NLEB") was listed by the USFWS as a federally threatened species on April 2, 2015. Though there are no known occurrences of NLEB roosting in the Project area, the area includes trees that may serve as roosting habitat for NLEB.[156]

157. Impacts to rare and unique natural resources due to the Project are anticipated to be minimal to moderate; however, DNR and USFWS have recommended mitigation measures.[157]

158. Applicants have further committed to several strategies to minimize impacts, including: minimizing tree and shrub removal, utilizing best management practices to prevent soil erosion, revegetating disturbed areas with native species and wildlife conservation species, installing bird flight diverters at water crossings, and avoiding impacts to undisturbed habitat to the greatest extent practicable.[158]

159. Impacts to rare and unique natural resources along the West Route Option are anticipated to be greater than those along the East Route Option. Because the East Route Option will result in the removal of fewer acres of trees, the East Route Option is anticipated to minimize potential impacts to the NLEB. In addition, the West Route Option has the potential to impact approximately 1.9 acres identified by DNR as Sites of Biodiversity and 0.2 acres of land identified by DNR as Native Plant Communities. The East Route Option does not impact any such sites.[159]

160. Impacts to rare and unique natural resources along the East of U.S. Highway 10 Alternative (Common Route from Azalea Road to Holt Road) and the East of U.S. Highway 10 Alternative (Common Route from Ridge Road to Holt Road) are anticipated to be greater than those along the Proposed Routes. The primary difference between these alternatives are the potential impacts to Sites of Biodiversity and Native Plant Communities.[160]

[154] Ex. 23, at 103 (EA).
[155] Ex. 23, at 103 (EA).
[156] Ex. 23, at 103-04.
[157] Ex. 23, at 104-06 (EA).
[158] Ex. 23, at 105.
[159] Ex. 23, at 116 (EA).
[160] Ex. 23, at 124 (EA).

161. Impacts to rare and unique natural resources along the MP Land East River Crossing Alternative and the Old Tree Avoidance Alternative are anticipated to be similar to the Proposed Routes.[161]

G. Application of Various Design Considerations.

162. Minnesota's high voltage transmission line routing factors 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.[162]

163. The Project is designed to improve electrical service and reliability in the Project area. It is also designed to accommodate future expansion of the transmission system in the area.[163]

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

164. Minnesota's high voltage transmission line routing factors require consideration of the Proposed Routes' use or paralleling of existing rights-of-way, survey lines, natural division lines, and agricultural field boundaries.[164]

165. The Project parallels existing rights-of-way for the vast majority of its length.[165] The West Route Option will parallel or utilize existing rights-of-way for approximately 94% of the alignment. The East Route Option will parallel or utilize existing rights-of-way for approximately 97% of the alignment.[166] The Common Route parallels existing road rights-of-way for nearly its entire length.[167]

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

166. Minnesota's high voltage transmission line routing factors require consideration of the Proposed Routes' use of existing transportation, pipeline, and electrical transmission system rights-of-way.[168]

167. The Proposed Routes parallel or utilize existing transmission and roadway rights-of-way for approximately 98-99% of its length.[169]

---

[161] Ex. 23, at 130, 135 (EA).
[162] MINN. STAT. § 216E.03, subd. 7(a)-(b); MINN. R. 7850.1900, subp. 2(L).
[163] Ex. 23, at 112 (EA).
[164] MINN. STAT. § 216E.03, subd. 7(b)(9); MINN. R. 7850.4100, subp. H.
[165] Ex. 2, at 8-1 (Application).
[166] Ex. 23, at 116 (EA).
[167] Ex. 2, at 8-1 (Application).
[168] MINN. STAT. § 216E.03, subd. 7(b)(8); MINN. R. 7850.4100, subp. J.
[169] Ex. 23, at 112.

168. The East of U.S. Highway 10 Alternative (Common Route from Azalea Road to Holt Road) and the East of U.S. Highway 10 Alternative (Common Route from Ridge Road to Holt Road) will parallel the same amount of right-of-way as the Proposed Routes along U.S. Highway 10. These alternatives will result in the right-of-way sharing and underbuild of approximately one additional mile of distribution power lines when compared to the Proposed Routes.[170]

169. The MP Land East River Crossing Alternative will result in the creation of approximately 250 feet of additional right-of-way when compared to the Proposed Routes.[171]

170. The Old Tree Avoidance Alternative and the Proposed Routes will parallel the existing Azalea Road and overtake the existing Minnesota Power sub-transmission line.[172]

J. Electrical System Reliability.

171. Minnesota's high voltage transmission line routing factors require consideration of the Project's impact on electrical system reliability.[173]

172. The Project will be constructed to improve electrical service and reliability in the Project area.[174]

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

173. Minnesota's high voltage transmission line routing factors require consideration of the Proposed Routes' cost of construction, operation, and maintenance.[175]

174. The estimated total cost for the Project is approximately $16-17 million, depending on final route selection. Annual operation and maintenance costs for a 115 kV line in the Great River Energy system, including right-of-way maintenance, are approximately $2,000 per mile of transmission line.[176]

175. The West Route Option is estimated to cost approximately $1,992,000, and the East Route Option is estimated to cost approximately $2,490,000.[177]

176. The East of U.S. Highway 10 Alternative (Common Route from Azalea Road to Holt Road) is anticipated to cost approximately $172,000 more than the Proposed Routes. The

[170] Ex. 23, at 125 (EA).
[171] Ex. 23, at 131 (EA).
[172] Ex. 23, at 135 (EA).
[173] MINN. STAT. § 216E.03, subd. 7(b)(10); MINN. R. 7850.4100, subp. K.
[174] Ex. 23, at 112 (EA).
[175] MINN. R. 7850.4100, subp. L.
[176] Ex. 23, at 46 (EA).
[177] Ex. 23, at 116 (EA).

East of U.S. Highway 10 Alternative (Common Route from Ridge Road to Holt Road) is anticipated to cost approximately $215,000 more than the Proposed Routes.[178]

177. The cost of the MP Land East River Crossing Alternative is anticipated to be $120,000 more than the Proposed Routes.[179]

178. The Old Tree Avoidance Alternative is anticipated to cost approximately $240,000 more than the Proposed Routes.[180]

L. Adverse Human and Natural Environmental Effects That Cannot Be Avoided.

179. Minnesota's high voltage transmission line routing factors require consideration of the adverse human and natural environmental effects that cannot be avoided.[181]

180. Unavoidable adverse impacts include the physical impacts to the land due to construction of the Project.[182]

M. Irreversible and Irretrievable Commitments of Resources.

181. Minnesota's high voltage transmission line routing factors require consideration of the irreversible and irretrievable commitments of resources that are necessary for each route alternative.[183]

182. The commitment of a resource is irreversible when it is impossible or very difficult to redirect that resource to a different future use. An irretrievable commitment refers to the use or consumption of a resource such that it is not recoverable for later use by future generations. These types of commitments are anticipated to occur for all route and site alternatives and not to vary significantly between routing impacts.[184]

183. There are few commitments of resources associated with the Project that are irretrievable. These commitments include the steel, concrete, and hydrocarbon resources committed to the Project. Labor and fiscal resources required for the Project are also irretrievable commitments.[185]

N. Summary of Factors Analysis.

[178] Ex. 23, at 125 (EA).
[179] Ex. 23, at 131 (EA).
[180] Ex. 23, at 135 (EA).
[181] MINN. STAT. § 216E.03, subd. 7(b)(5)-(6); MINN. R. 7850.4100, subp. M.
[182] *See* Ex. 23, at 112-13 (EA).
[183] MINN. STAT. § 216E.03, subd. 7(b)(11); MINN. R. 7850.4100, subp. N.
[184] Ex. 23, at 113 (EA).
[185] Ex. 23, at 113 (EA).

184. The East Route Option has lesser impacts than the West Route Option.[186] An alignment of the Common Route along the west side of U.S. Highway 10 would result in fewer impacts than an alignment along the east side.[187] The Proposed Routes meet Minnesota's route selection criteria as well or better than the East of U.S. Highway 10 Alternative (Azalea Road to Holt Road) and the East of U.S. Highway 10 Alternative (Ridge Road to Holt Road) in terms of impacts to aesthetics, public health and safety, land-based economies, archeological and cultural resources, effects on natural environments, and use of existing rights-of-way.[188] In addition, the Proposed Routes meet Minnesota's route selection criteria as well or better than the MP Land East Crossing Alternative.[189] Finally, the Old Tree Avoidance Alternative and the Proposed Routes would meet Project needs, but the Old Tree Avoidance Alternative may minimize Project impacts and also utilizes existing rights-of-way.[190]

185. Based on consideration of all routing factors, the East Route Option and the Common Route, including an alignment along the west side of U.S. Highway 10 and the Applicants' revised Old Tree Avoidance Alternative, is the best route for the Project (the "Preferred Route").

II. Notice.

186. Minnesota statutes and rules require Applicants to provide certain notice to the public and local governments before and during the Application for a Route Permit process.[191]

187. Applicants provided notice to the public and local governments in satisfaction of Minnesota statutory and rule requirements.[192]

188. Minnesota statutes and rules also require EERA and the Commission to provide certain notice to the public throughout the Route Permit process.[193] EERA and the Commission provided the notice in satisfaction of Minnesota statutes and rules.[194]

III. Completeness of EA.

189. The EA process is the alternative environmental review approved by the Environmental Quality Board ("EQB") for high voltage transmission lines.[195] The Commission

[186] Ex. 23, at 119 (EA).
[187] *See* Ex. 14, at 18 (Other – Motley Area Written Public Comments); Ex. 23, at 35-36.
[188] Ex. 23, at 126-27 (EA).
[189] Ex. 23, at 132-33 (EA).
[190] Ex. 23, at 136-37 (EA).
[191] MINN. STAT. § 216E.03, subds. 3a, 4; MINN. R. 7850.2100, subps. 2, 4.
[192] Ex. 1 (Initial Filing – Alternative Process Notification); Ex. 6 (Compliance Filing – Confirmation of Notice); Ex. 8 (Affidavit of Publication – Scoping Meeting Newspaper Notices).
[193] MINN. STAT. § 216E.03, subd. 6; MINN. R. 7850.2300, subp. 2; MINN. R. 7850.3700, subps. 2-3, 6.
[194] Ex. 3 (Notice of Comment Period on Application Completeness); Ex. 5 (Commission Meeting Notice on Completeness); Ex. 7 (Notice of Public Information and Scoping Meeting); Ex. 19 (EA Scoping Decision); Ex. 24 (Notice of Availability of EA).
[195] MINN. R. 4410.4400, subp. 6.

is required to determine the completeness of the EA.[196] An EA is complete if it and the record address the issues and alternatives identified in the Scoping Decision.[197]

190. The evidence on the record demonstrates that the EA is adequate because the EA and the record created at the public hearing and during the subsequent comment period address the issues and alternatives raised in the Scoping Decision.[198]

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

CONCLUSIONS

1. The Commission has jurisdiction to consider the Application.

2. The Commission determined that the Application was substantially complete and accepted the Application on May 27, 2015.[199]

3. EERA has conducted an appropriate environmental analysis of the Project for purposes of this Route Permit proceeding and the EA satisfies Minnesota Rules 7850.3700 and 7850.3900. Specifically, the EA and the record address the issues and alternatives identified in the Scoping Decision to a reasonable extent considering the availability of information, and the EA includes the items required by Minnesota Rule 7850.3700, Subpart 4, and was prepared in compliance with the procedures in Minnesota Rule 7850.3700.

4. Applicants gave notice as required by Minnesota Statutes Section 216E.04, Subdivision 4; Minnesota Rule 7850.2100, Subpart 2; Minnesota Rule 7850.2100, Subpart. 4.

5. Notice was provided as required by Minnesota Statutes Section 216E.04, Subdivision 6; Minnesota Rule 7850.3500, Subpart 1; Minnesota Rule 7850.3700, Subparts 2, 3, and 6; and Minnesota Rule 7850.3800.

6. A public hearing was conducted near the Proposed Routes. Proper notice of the public hearing was provided, and the public was given the opportunity to speak at the hearing and to submit written comments. All procedural requirements for the Route Permit were met.

7. The evidence on the record demonstrates that the Preferred Route (as depicted on **Exhibit C**), best satisfies the Route Permit factors set forth in Minnesota Statutes Section 216E.04, subdivision 8 (referencing Minnesota Statutes Section 216E.03, subdivision 7) and Minnesota Rule 7850.4100.

8. There is no feasible and prudent alternative to the construction of the Project, and the Project is consistent with and reasonably required for the promotion of public health and

[196] MINN. R. 7850.3900, subp. 2.
[197] *Id.*
[198] *See* Ex. 19 (EA Scoping Decision); Ex. 23 (EA).
[199] Ex. 9 (Order Accepting Application as Complete, Directing the Use of Alternative Process, and Granting Variance and Certificate of Service).

welfare in light of the state's concern for the protection of its air, water, land, and other natural resources as expressed in the Minnesota Environmental Rights Act.[200]

9. A special Route Permit condition requiring a Phase I archeological survey is appropriate for the Project:

> The permittees shall consult with the State Historic Preservation Office concerning the extent of a Phase I archeological survey and appropriate mitigation measures for the Project. Permittees shall document and submit to the Commission the results of the consultation, including those portions of the Project that will be surveyed and the extent of the survey. For those portions of the Project that are surveyed, permittees shall submit, with the plan and profile for these portions, the results of the survey and all avoidance and mitigation measures employed or to be employed.

10. A special Route Permit condition requiring that the permittees consult with the DNR and USFWS to develop an avian mitigation plan is appropriate for the Project.

11. A special Route Permit condition requiring that the permittees consult with the DNR to develop a vegetation management plan is appropriate for the Project. It is appropriate for the plan to incorporate expressed recommendations of the DNR including management of vegetation within the right-of-way to maintain low-growing plants on the border of the right-of-way (wire zone / border zone management) and maintaining natural vegetation within a 50-foot buffer on both banks at all stream crossings.

12. The evidence on the record demonstrates that the general Route Permit conditions are appropriate for the Project.

13. Any of the foregoing Findings more properly designated Conclusions are hereby adopted as such.

[200] *See* MINN. STAT. § 116B.01.

Exhibit A: Routes Proposed in Application

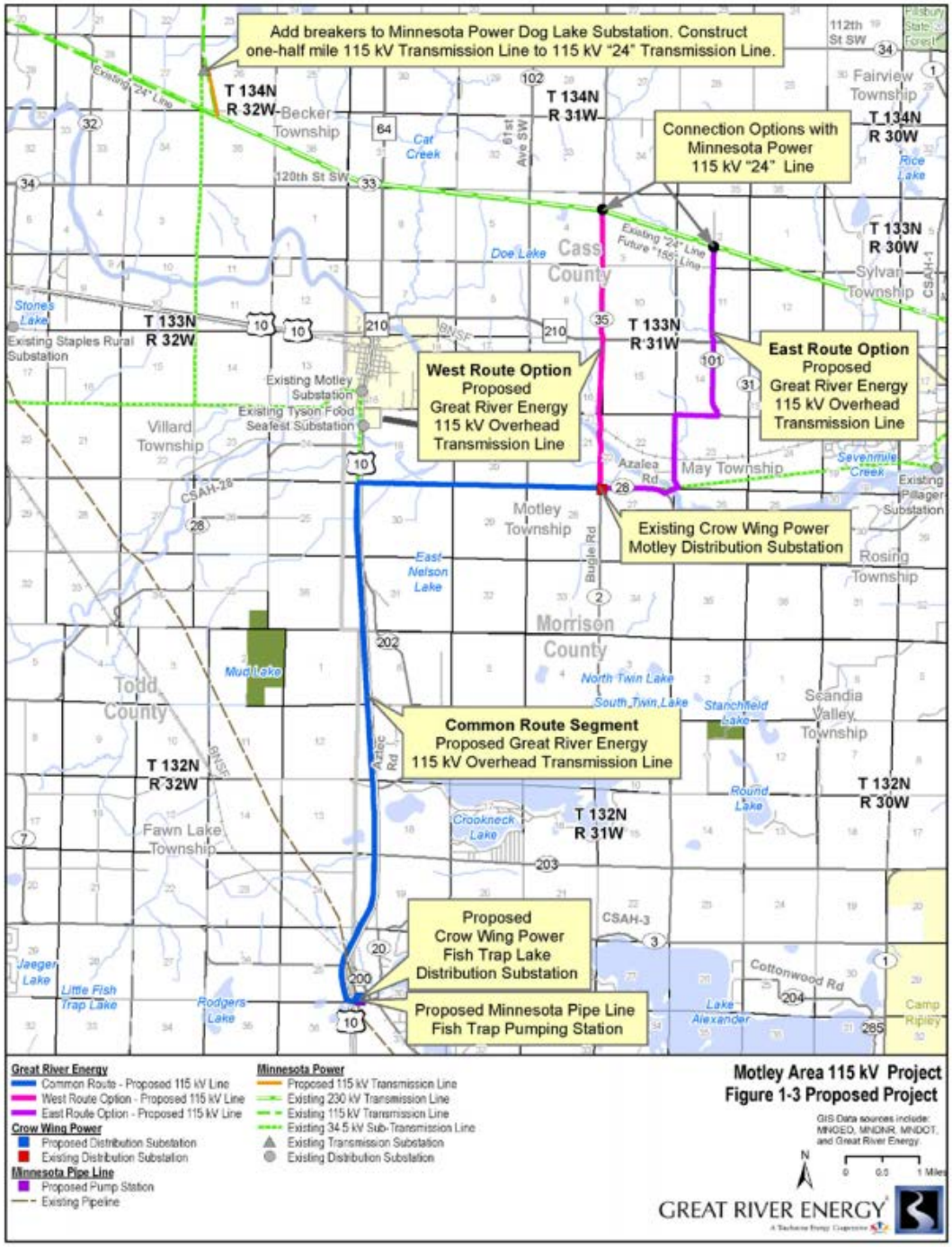
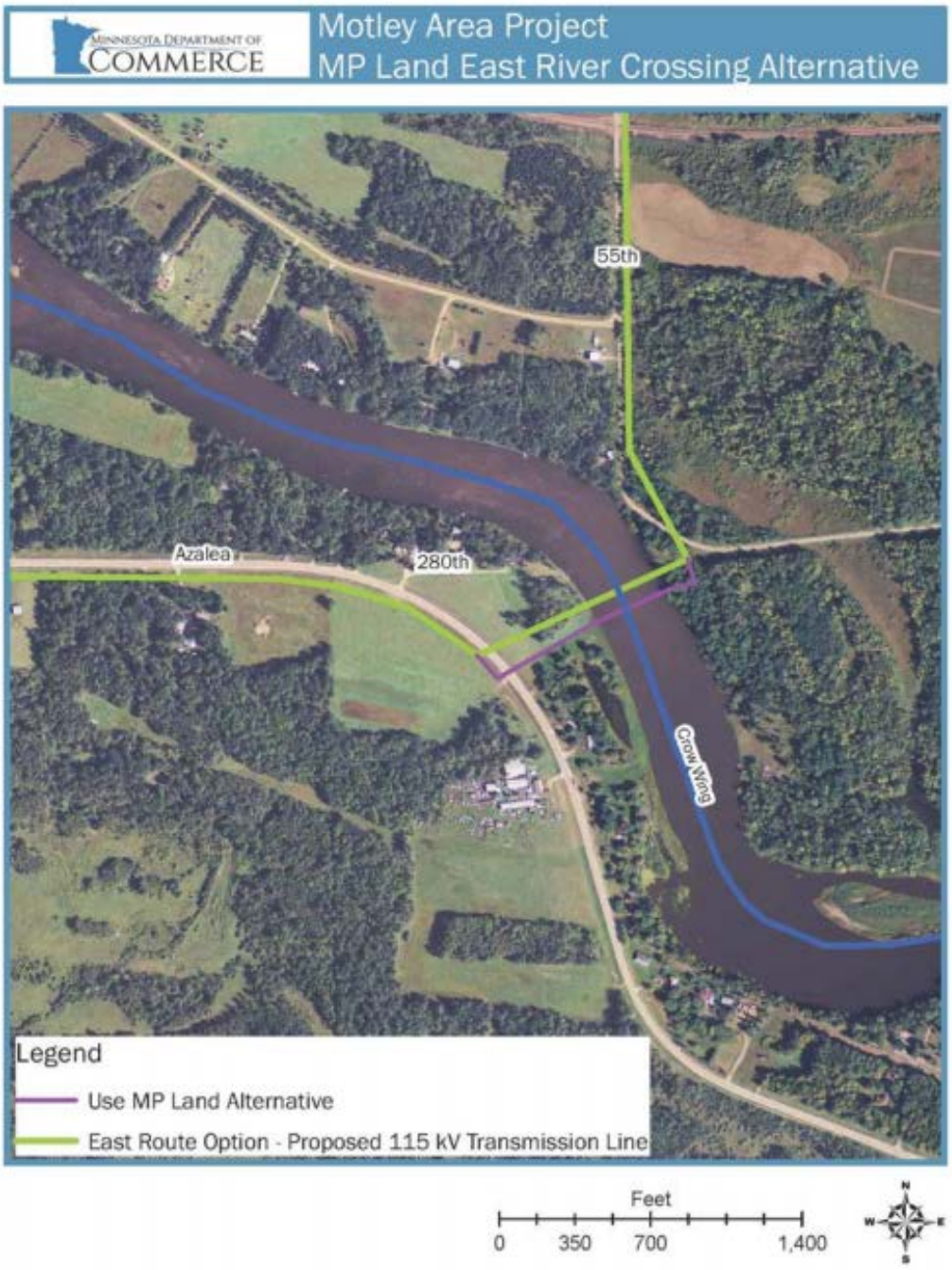


Exhibit B: Alternative Routes
B.1: MP Land East River Crossing Alternative



B.2: Common Route East of U.S. Highway 10 Alternatives

B.3: Applicants' Revised Old Tree Avoidance Alternative

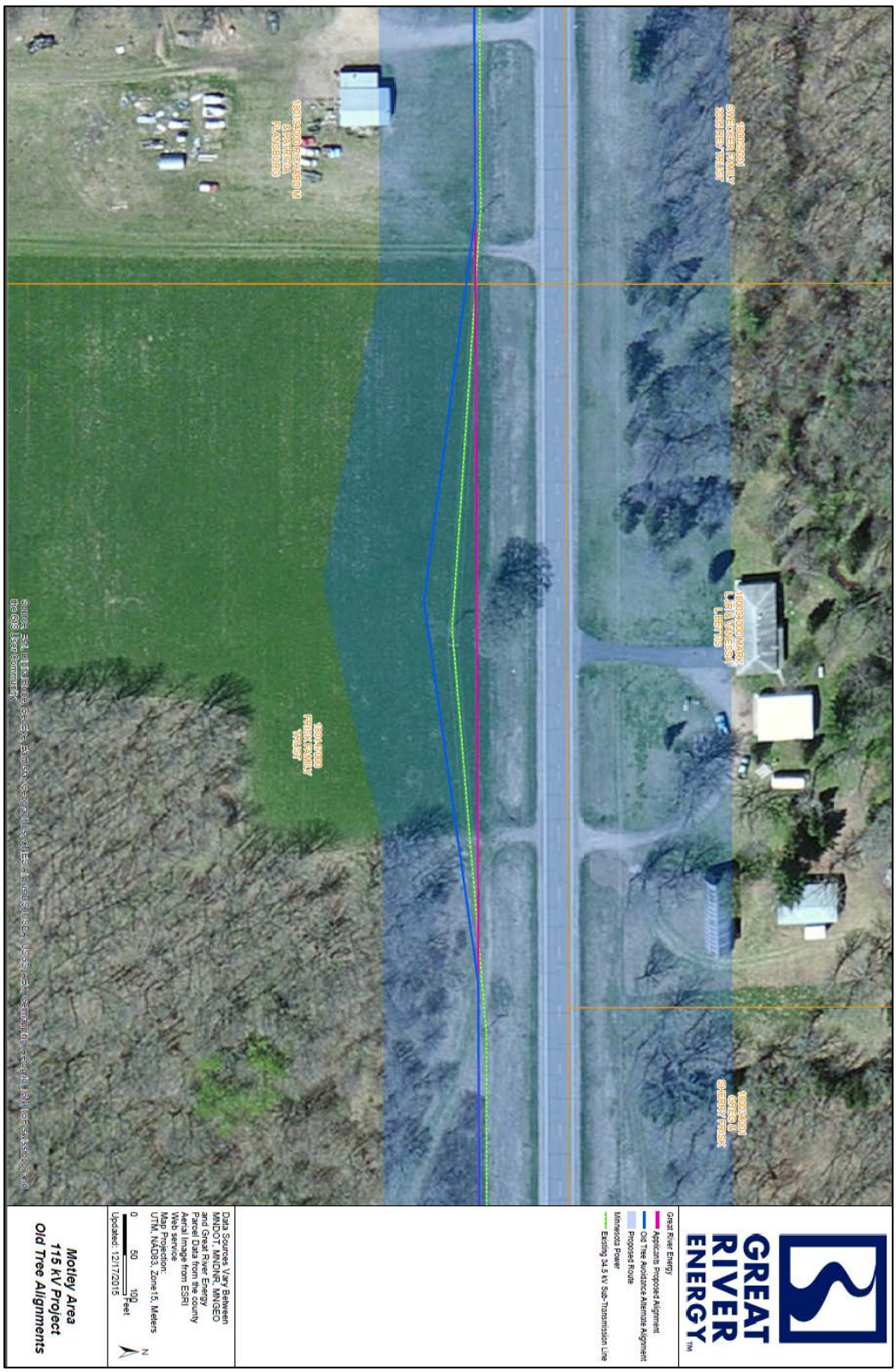


Exhibit C: Preferred Route