

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

David Boyd  
J. Dennis O'Brien  
Phyllis Reha  
Betsy Wergin

Chair  
Commissioner  
Commissioner  
Commissioner  
Commissioner

In the Matter of the Application for a High Voltage Transmission Line for the Proposed Savanna Transmission Line Project

ISSUE DATE:

DOCKET NO. ET2, E015/TL-10-1307

FINDINGS OF FACT,  
CONCLUSIONS OF LAW, AND  
ORDER ISSUING A HVTL PERMIT TO  
GREAT RIVER ENERGY &  
MINNESOTA POWER FOR THE  
SAVANNA TRANSMISSION PROJECT

The above-captioned matter came before the Minnesota Public Utilities Commission (Commission) on February 16, 2012, acting on an application by Great River Energy and Minnesota Power for a HVTL Permit to construct approximately 37 miles of 115 kV transmission line in St. Louis County.

A public hearing was held on November 15, 2011, at the Fine Lakes Township Hall in Wright, Minnesota. The hearing was presided over by Bruce H. Johnson, Administrative Law Judge (ALJ) for the Minnesota Office of Administrative Hearings (OAH). The hearing continued until all persons who desired to speak had done so. The comment period closed on November 29, 2011, at 4:30 p.m.

**STATEMENT OF ISSUE**

Should the Commission find that the Environmental Assessment and the record adequately address the issues identified in the Scoping Decision? Should the Commission issue a HVTL Route Permit identifying specific routes and permit conditions for the proposed Savanna HVTL project?

Based upon all of the proceedings herein, the Commission makes the following:

**FINDINGS OF FACT**

**The Applicant**

1. Great River Energy (GRE) 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 Lake Country Power, Mille Lacs Energy Cooperative, and East Central Energy, the distribution cooperatives serving the area proposed to be supplied by the new

transmission lines. Great River Energy's distribution cooperatives, in turn, supply electricity and related services to more than 639,000 residential, commercial, and industrial customers in Minnesota and Wisconsin.<sup>1</sup>

2. Minnesota Power (MP) is an investor-owned public utility headquartered in Duluth, Minnesota. Minnesota Power supplies retail electric service to 136,000 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 delivers 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 Midwest Reliability Organization and the Midwest Independent Transmission System Operator.<sup>2</sup>
3. The Applicants applied for a high-voltage transmission line route permit to construct the new Savanna 115 kilovolt (kV) Switching Station near Floodwood, Minnesota, and to rebuild approximately 37 total miles of existing 69 kV transmission line to 115 kV specifications between: 1) Lake Country Power's existing Cedar Valley Substation and the new Savanna Switching Station, and 2) The Savanna Switching Station, Lake Country Power's existing Gowan Substation, and Great River Energy's existing Cromwell Substation.<sup>3</sup>

### **Project Description**

4. The Applicants proposed that the new lines follow the same alignment (route request is 300 feet wide, 150 feet either side of the existing transmission line centerline) that the existing Great River Energy 69 kV lines presently follow. The proposed plan includes:<sup>4</sup>
  - Construct the new Savanna 115 kV Switching Station in Section 32 of Van Buren Township.
  - Rebuild approximately seven miles of existing Great River Energy 69 kV transmission line to single circuit 115 kV between Lake Country Power's existing Cedar Valley Substation in Cedar Valley Township and the new Savanna Switching Station.
  - Rebuild approximately nine miles of existing Great River Energy 69 kV transmission line to single circuit 115 kV between the new Savanna Switching Station and Lake Country Power's existing Gowan Substation in Floodwood Township.
  - Rebuild approximately 21 miles of existing Great River Energy 69 kV transmission line to double circuit 115/69 kV between the Lake Country Power Gowan Substation and Great River Energy's existing Cromwell Substation in Kalevala Township.
  - Modify the Lake Country Power Cedar Valley Substation and Great River Energy Cromwell Substation to accommodate the 115 kV transmission lines.

This project will result in a new 115 kV line between the proposed Savanna Switching Station and the Cedar Valley Substation, a new 115 kV line between the Savanna Switching Station and the

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<sup>1</sup> Ex. 2 at p. 1-1 (Application)

<sup>2</sup> Ex. 2 at p. 1-3 (Application)

<sup>3</sup> Ex. 2 at p. 1-1 (Application)

<sup>4</sup> Ex. 2 at Sections 4-1 through 4-8 (Application)

Cromwell Substation, and an upgraded 69 kV line between the Gowan Substation and the Cromwell Substation.<sup>5</sup>

The transmission lines lie entirely in Minnesota in St. Louis and Carlton counties. Single-pole wood structures with horizontal post insulators will be used for most of the rebuild. Laminated wood poles or steel poles may be required in some locations (angle poles or areas where soil conditions are poor and guying is not practical), and two pole H-Frame structures may be used in some areas. Typical pole heights will range from 60-85 feet above ground and the average span would be 350 to 400 feet for single pole structures and 600 to 800 feet for H-Frame structures.<sup>6</sup>

Small sections of the existing line near the two St. Louis River crossings have distribution under-build, which would be attached to the new 115 kV transmission line structures. The average span for these structures would be approximately 250 to 350 feet.<sup>7</sup>

The Applicants propose that the majority of the new lines would follow the alignment of the existing 69 kV lines. A 15-foot offset from the existing pole locations may be required in some areas. The necessary easement width is 50 feet on each side of the transmission centerline; however, in areas where the line follows an existing distribution line or roadway, the easement may overlap with existing easements and/or the road right-of-way. Great River Energy has existing easements for the majority of the 69 kV line and anticipates that only minimal additional property will be required when the line is upgraded to 115 kV. Great River Energy intends to enter into new easements or amendments of the existing easements with landowners to update the language to reflect typical provisions included in today's easements.<sup>8</sup>

The project will cost approximately \$29 million dollars.<sup>9</sup>

<b>Estimated Pre- and Post-Construction Costs</b>	<b>Estimated Construction Costs – 115 kV Transmission Lines</b>	<b>Estimated Switching Station Costs</b>	<b>Estimated Substation Modification Costs</b>	<b>Total Estimated Project Cost</b>
\$4,640,000	\$20,720,000	\$2,600,000	\$1,075,000	<b>\$29,035,000</b>

### **Procedural History**

- On December 29, 2010, in accordance with Minn. R. 7850.2800, subp. 2, the Applicants filed a letter with the Commission noticing their intent to submit a route permit application under the alternative permitting process set forth in Minn. Stat. § 216E.04 and Minn. R. 7850.2800 to 7850.3900.<sup>10</sup>

<sup>5</sup> Ex. 2 at Sections 4-1 through 4-8 (Application)

<sup>6</sup> Id

<sup>7</sup> Id

<sup>8</sup> Id

<sup>9</sup> Id

<sup>10</sup> Ex.1 (Applicant mailed notice)

6. On February 10, 2011, the Applicants filed a route permit application (Application) with the Commission for the Savanna Transmission Line project to be constructed in St. Louis and Carlton counties, Minnesota.<sup>11</sup>
7. The Applicant mailed a Notice of a Submittal of an Application for a Route Permit on February 18, 2011, to those persons whose names are on the general list maintained by the Commission for this purpose, local and regional officials, and property owners in compliance with Minn. R. 7850.3300 and 7850.2100.<sup>12</sup>
8. The Applicant published Notice of a Submittal of an Application for a Route Permit in the *Grand Rapids Herald Review* (February 23, 2011), *Cloquet Pine Journal and Duluth News Tribune* (February 24, 2011) and the *Portage News* (February 22, 2011) in compliance with Minn. R. 7850.3300 and 7850.2100, subp. 4.<sup>13</sup>
9. On March 23, 2011, the Department of Commerce (Department) Energy Facility Permitting (EFP) staff submitted comments and recommendations to the Commission on the completeness of the Applicant's HVTL Route Permit Application. The EFP staff recommended that the Commission accept the route permit application as complete and appoint a public advisor; the establishment of an advisory task force (ATF) was not recommended. The EFP staff also took the opportunity to inform the Commission that it would be combining the environmental review in the certificate of need (CN) and routing dockets for this project in accordance with Minnesota Rule 7849.1900, Subpart 1.<sup>14</sup>
10. On April 4, 2011, the Commission accepted the application as complete and authorized the EFP staff to process the application under the alternative permitting process in Minn. R. 7850.2800 to 7850.3900. The Commission also authorized the EFP staff to name a public advisor; the Commission determined that an advisory task force was not necessary at that time.<sup>15</sup>
11. On April 21, 2011, EFP issued and mailed a Notice of Public Information Meeting to those persons whose names are on the general list maintained by the Commission for this purpose in compliance with Minn. R. 7850.3500, subp. 1 and 7850.2300, subp. 2. EFP also sent the Notice to designated State Agency Technical Representatives.<sup>16</sup>
12. The Applicant on behalf of EFP published the Notice of Public Information Meeting in the *Grand Rapids Herald Review* (May 4, 2011), and the *Duluth News Tribune* (May 4, 2011), in compliance with Minn. R. 7850.3500 and 7850.2300, subp. 2.<sup>17</sup>
13. A hard copy of the route permit application was made available at the Cloquet and Duluth Public Libraries.<sup>18</sup>

### *Public Information/Scoping Meeting*

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<sup>11</sup> Ex. 2 (Application)

<sup>12</sup> Ex. 3 (Applicant submittal documentation of mailed and published notice)

<sup>13</sup> Id

<sup>14</sup> Ex. 4 (EFP Comments & Recommendations Application Acceptance)

<sup>15</sup> Ex. 5 (Commission Order on Application Completeness)

<sup>16</sup> Ex. 6 (EFP Notice of Public Meeting)

<sup>17</sup> Ex. 7 (Published Notice of Public Meeting)

<sup>18</sup> Ex. 6 (EFP Notice of Public Meeting)

14. The scoping process is the first step in developing an environmental assessment (EA). The Department “shall provide the public with an opportunity to participate in the development of the scope of the environmental assessment by holding a public meeting and by soliciting public comments.”<sup>19</sup> During the scoping process, alternative routes may be suggested for evaluation in the EA.<sup>20</sup>
15. In accordance with Minn. R. 7850.3500, subp. 1 and 7850.2300, subp. 1 to 4, EFP staff held a public information and environmental review scoping meeting on May 18, 2011, at the Fine Lakes Township Hall in Wright, Minnesota.<sup>21</sup>
16. The meetings included two sessions, one starting at 2:00 pm and another starting at 6:00 pm. The meeting covered and fulfilled both the CN and Routing procedural requirements. The purpose of the meeting was to provide information to the public about the proposed project, to answer questions, and to allow the public an opportunity to suggest alternatives and impacts that should be considered during preparation of the environmental review document. Written comments were due no later than Wednesday, March 23, 2011.<sup>22</sup>
17. Approximately 12 people attended the public information and scoping meetings; 5 individuals took the opportunity to speak on the record. A court reporter was present to document oral statements. Ten written comments were received.<sup>23</sup>
18. A variety of questions were asked and answered during the oral discussion; topics included: specifics on which lines and poles will be removed, and design/construction of any new poles; specifics on the proposed alignment and easement requirements; construction methods that allow for “hot” work to avoid the off-set of the right-of-way (ROW); the concepts of route width and ROW width; sources of power generation for this project; and timeline and milestones of the application review process.<sup>24</sup>
19. The major areas of concern for scoping expressed during the public comment period included: health and safety issues, property values, compensation for easements, avian impacts, impacts of herbicides in wetlands/public waters, and flexibility in siting the final alignment.<sup>25</sup>
20. Alternative routes, alternative route segments and modifications to GRE’s proposed alignment were discussed during the scoping meeting and in comments received during the scoping comment period.<sup>26</sup>

### *Alternative Routes and Route Segments*

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<sup>19</sup> Minn. R. 7850.3700, subp. 2.

<sup>20</sup> Minn. R. 7850.3700, subp. 2B.

<sup>21</sup> Ex. 10 (Scoping Decision: Attached Memorandum)

<sup>22</sup> Id

<sup>23</sup> Id

<sup>24</sup> Id

<sup>25</sup> Id

<sup>26</sup> Ex. 10 (Scoping Decision: Attached Memorandum)

21. Goodell Alternative Route Segment: A resident located along the south side of Hingeley Road (County State Aid Highway 86 - CSAH) in Section 15, Township 50 north, Range 20 west, requested that an *alternative route segment* be considered in a portion of the proposed Savanna HVTL route (Applicant's Key Map Book, Map 22 and 23). The alternative route segment lies within the portion of the proposed route that includes a rebuild of approximately nine miles of existing GRE 69 kV line to double-circuit 115/69 kV line, south of Lake Country Power's Gowan Substation.<sup>27</sup>
22. The Goodell Alternative Route Segment would modify an approximately one mile segment of the proposed route along CSAH 86 (Hingeley Road) where the road runs west from the intersection of Norlund Road (Township Road 5004) in Fine Lakes Township. The current proposal consists of utilizing the existing 69 kV ROW that runs along the south side of CSAH 86; the Goodell Alternative Route Segment would relocate this ROW so that it follows the north side of CSAH 86.<sup>28</sup>
23. This alternative would impact five new parcels; four corporate owned (Potlatch Corporation) and one private undeveloped parcel (Hokala). The relocation of the ROW would move the line off of four private parcels, two of which are developed.<sup>29</sup>
24. The Applicants' proposal is to rebuild the existing 69 kV line to a double-circuit 115/69 kV line transmission line.<sup>30</sup>
25. The stated purpose of this alternative route segment is to reduce the impact to resident, developed parcels along this segment of the proposed HVTL rebuild.<sup>31</sup>
26. An additional option included in the request is consideration of moving the Lake Country Power distribution line (which is also located along the south side of CSAH 86) to the north side of CSAH 86 as a possible distribution under build with the proposed 115 kV transmission line.<sup>32</sup>
27. This alternative alignment was carried forward into the scope of the EA.<sup>33</sup>
28. Lund alternative route segment: Several members of the Lund family, who own four forty-acre parcels along the west side of Stremel Road (County Road 192-CR) requested that an *alternative route segment* be considered in a portion of the proposed Savanna HVTL route (Applicant's Key Map Book, Map 38 and 39).<sup>34</sup>

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<sup>27</sup> Ex. 10 (Scoping Decision: Attached Memorandum)

<sup>28</sup> Id

<sup>29</sup> Id

<sup>30</sup> Id

<sup>31</sup> Id

<sup>32</sup> Id

<sup>33</sup> Ex. 10 (Scoping Decision)

<sup>34</sup> Ex. 10 (Scoping Decision: Attached Memorandum)

29. The Lund Alternative Route Segment lies within the portion of the proposed rebuild route that GRE has stated will need an “off-set” of the centerline due to the need to keep the existing 69 kV line energized; the consequence of this off-set is the creation of an addition HVTL ROW to the west of the existing ROW.<sup>35</sup>
30. The Lund Alternative Route Segment would modify an approximately two mile segment of the proposed route along Stremel Road (CR 192), between the proposed Savanna Switching Station north to Parantala Road (County Road 732) in Van Buren Township. The current 69 kV line runs along the west side of Stremel Road (CR 192) from the proposed switching station to Parantala Road (County Road 732); the Lund Alternative Route Segment would relocate this ROW so that it follows the east side of Stremel Road.<sup>36</sup>
31. An additional option included in the request is consideration of so called “hot work” methods of construction (i.e., hot stick, leaning the existing poles, etc.) that would allow the new 115 kV to remain in the existing ROW.<sup>37</sup>
32. The Lund family has established a memorial site in a stand of tamaracks to honor a deceased sibling. The memorial and tamarack stand are to the west of the existing 69 kV ROW; the concern is that this area may lie within, or very near to, the proposed new 115 kV ROW. The stated purpose of this alternative route segment or alternative construction methodology is to eliminate the impact to the tamarack stand and memorial therein.<sup>38</sup>
33. This alternative alignment was carried forward into the scope of the EA.<sup>39</sup>
34. *Cedar Valley Substation to Savanna Switching Station Alternative Route Segment:* GRE has stated that the section of the proposed route between the existing Cedar Valley Substation and the proposed Savanna Switching Station will be “off-set” from the existing 69 kV line ROW due to the need to keep the 69 kV line energized during construction of the new 115 kV HVTL, in essence creating a new ROW for this section of the proposed project.<sup>40</sup>
35. The creation of new ROW or expansion of existing ROW, as proposed, makes the evaluation of similar alternatives practicable. This route alternative segment would follow the MP 115 kV 9 line east-northeast out of the proposed Savanna Switching Station for approximately one mile to the point where the MP 9 line crosses the MP 230 kV 98 line. At this point, the route alternative segment would turn northwest and follow the MP 98 line for approximately six miles to a point just (1/4 mile) east of the Cedar Valley Substation. The route then makes a short (1/4 mile) cross-country run to the west to tie into the Cedar Valley Substation (Applicant’s Key Map Book, Cedar Valley-Savanna Alternative, Map 1 through 10).<sup>41</sup>

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<sup>35</sup> Ex. 10 (Scoping Decision: Attached Memorandum)

<sup>36</sup> Id

<sup>37</sup> Id

<sup>38</sup> Id

<sup>39</sup> Ex. 10 (Scoping Decision)

<sup>40</sup>

<sup>41</sup> Ex. 10 (Scoping Decision: Attached Memorandum)

36. A route width of 700 feet centered on the MP 9 and MP 98 line will provide adequate room to evaluate placing the new ROW on either side of the existing ROWs.<sup>42</sup>
37. The purpose of this alternative route segment is to allow the existing 69 kV to remain energized during construction of the new 115 kV HVTL, maintain the concept of paralleling/overlapping of existing ROWs, and utilizes, to a greater degree, public lands over privately owned lands.<sup>43</sup>
38. There was no Advisory Task Force established for this routing docket.<sup>44</sup>
39. The scoping decision for the environmental assessment was released by the Department on June 14, 2011, filed with the Commission and made available to the public as provided in Minn. R. 7850.3700, subp. 3.<sup>45</sup>

#### *Environmental Assessment*

40. The environmental assessment was filed with the Commission and made available on October 21, 2011.<sup>46</sup> The environmental assessment was prepared in accordance with Minn. R. 7850.3700, and contained all the information required.
41. On October 21, 2011, EFP staff mailed hard copies of the EA to state and federal agency technical representatives. A hard copy of the EA was also sent to the Cloquet and Duluth Public Libraries for public review purposes.<sup>47</sup>
42. On October 21, 2011, EFP mailed a combined Notice of Public Hearing and Availability of Environmental Assessment to those persons whose names are on the project contact list, local and regional officials, and property owners in compliance with Minn. R. 7850.3700, subd. 6.<sup>48</sup>
43. The Applicant, on behalf of the EFP, published combined Notice of Public Hearing and Availability of Environmental Assessment in the *Duluth News Tribune* (November 6, 2011) and the *Floodwood Forum* (November 10, 2011).<sup>49</sup>
44. Pursuant to Minn. R. 7850.3700, subp. 6, EFP published combined Notice of Public Hearing and Availability of Environmental Assessment in the *EQB Monitor* (August 1, 2011).<sup>50</sup>

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<sup>42</sup> Ex. 10 (Scoping Decision: Attached Memorandum)

<sup>43</sup> Id

<sup>44</sup> Ex. 10 (Scoping Decision)

<sup>45</sup> Id

<sup>46</sup> Ex. 11 Environmental Assessment

<sup>47</sup> Ex. 12 Notice of Public Hearing & Availability of EA

<sup>48</sup> Ex. Id

<sup>49</sup> Ex. Id

<sup>50</sup> Ex. 13 EQB Monitor: Notice of Public Hearing & Availability of EA

45. The Environmental Assessment was provided to the public agencies with authority to permit or approve the proposed project and was also posted to the Commission's Energy Facilities Permitting website in accordance with Minn. R. 7850.3700, subp. 6.
46. The Environmental Assessment evaluated the Applicant Proposed Route, the Goodell Alternative Route Segment, the Lund Alternative Route Segment, and the Cedar Valley Substation to Savanna Switching Station Alternative Route Segment.<sup>51</sup>

### *Public Hearing*

47. On October 21, 2011, EFP mailed a combined Notice of Public Hearing and Availability of Environmental Assessment to those persons whose names are on the project contact list, local and regional officials, and property owners in compliance with Minn. R. 7850.3700, subd. 6.<sup>52</sup>
48. On October 27, 2010, EFP sent via Certified mail a combined Notice of Public Hearing and Availability of Environmental Assessment to chief executives of the regional development commissions, counties, organized towns, townships, and incorporated municipalities in accordance with Minn. Stat. § 216E.03, subd. 6.<sup>53</sup>
49. Pursuant to Minn. Stat. § 216E.03, subd. 6, the Applicant, on behalf of the EFP, published combined Notice of Public Hearing and Availability of Environmental Assessment in the *Duluth News Tribune* (November 6, 2011 and the *Floodwood Forum* (November 10, 2011).<sup>54</sup>
50. Minnesota Office of Administrative Hearings, Bruce Johnson, Administrative Law Judge (ALJ) presided over the public hearing conducted on November 15, 2011. The public hearing was held at the Fine Lakes Township Hall in Wright, Minnesota. The ALJ provided an opportunity for members of the public to ask questions or comment on the proposed project verbally and/or to submit question/comments in writing.<sup>55</sup>
51. Testimony was heard from the Applicants' representative (Michelle Lommel, GRE) and eleven members of the public. The record closed on November 29, 2011, the last day set for receipt of written comments by mail. Bill Storm, State Permit Manager, Minnesota Department of Commerce, appeared on behalf of the Minnesota Department of Commerce (DOC). Bret Eknes, State Planning Director, appeared on behalf of the staff of the Minnesota Public Utilities Commission (Commission).<sup>56</sup>

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<sup>51</sup> Ex. 11 Environmental Assessment

<sup>52</sup> Ex. 12 Notice of Public Hearing & Availability of EA

<sup>53</sup> Id

<sup>54</sup> Id

<sup>55</sup> Id

<sup>56</sup> ALJ Summary Of Testimony

52. Approximately 18 members of the public attended the public hearing. All persons who desired to speak were afforded a full opportunity to make a statement on the record.<sup>57</sup>
53. The public hearing transcript was filed by the Office of Administrative Hearings designated court reporter on December 8, 2011.<sup>58</sup>
54. The ALJ filed the Summary of Public Testimony on December 29, 2011.<sup>59</sup> The ALJ received post-hearing comments that elaborated on the themes expressed at the public hearing.
55. The ALJ report contains a summary of oral public comments provided at the hearing.<sup>60</sup>
56. A member of the public (Nate Goodell) spoke in support of the Goodell Alternative Route Segment (described previously); additionally, if his alternative were to be given favorable consideration, Mr. Goodell also requested that consideration be given to relocating Lake County Power's distribution line to the north side of Hingeley Road as an underbuild on the proposed double circuited 115/69 kV line.<sup>61</sup><sup>62</sup>
57. Mr. Goodell also believes the current proposal will interfere with a wildlife habitat management plan that he has developed in cooperation with the U. S. Department of Agriculture's Natural Resource Conservation Service (NRCS).<sup>63</sup>
58. The Applicants noted that Lake Country Power's parallel distribution line on the south side of Hingeley Road is relatively new, and there is also no current need to relocate it. Additionally, the Applicants expressed concern that building a line with all three circuits (i.e., the double circuit 115/69 kV and the LCP distribution line) would not provide them with a system as safe as they would prefer. Great River Energy offered to consider moving the rebuilt double circuit line northward approximately 20 to 25 feet closer to Lake Country Power's distribution line in order to reduce the overall impact on Mr. Goodell's property and other private properties.<sup>64</sup>
59. Mr. Roy Marlow attended the public meetings on behalf of the Marlow Trust, the Marlow Estate, and himself and proposed the *Marlow Alternative Alignment*. Although not previously discussed in the Department's scoping decision, nor in the Environmental Assessment, the Applicants and the EFP staff both agreed that it was appropriate to include relevant information on the Marlow Alternative Alignment in the hearing record.<sup>65</sup>

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<sup>57</sup> ALJ Summary Of Testimony

<sup>58</sup> Public Hearing Transcript

<sup>59</sup> ALJ Summary Of Testimony

<sup>60</sup> Id

<sup>61</sup> Id

<sup>62</sup> Ex. 18 and 19 Goodell Maps

<sup>63</sup> ALJ Summary Of Testimony

<sup>64</sup> Id

<sup>65</sup> Id

60. The Marlow Alternative Alignment lies within the Applicants' requested 300 foot wide route and involves an approximately 2 mile portion of the proposed route.<sup>66,67</sup>
61. As proposed by the Applicants, the proposed alignment for the rebuild would follow the existing 69 kV right-of-way along the west side of Hingeley Road, from its intersection with County Road 825 southward toward the St. Louis River; Hingeley Road actually ends at a turnabout approximately 2000 feet north of the river. The Marlow Alternative Alignment is located in this portion of the proposed route (Applicant's Key Map Book, Map 27, 28 and 29). Roy Marlow, the Marlow Trust, and the Marlow Estate own most of the property along the west side of Hingeley Road along this portion of the proposed route where the existing 69 kV line is currently located.<sup>68</sup>
62. Mr. Marlow stated that much of the property adjacent to the nearby city of Floodwood lies within a flood zone, while the private property along west side of Hingeley Road is 125 feet above flood level. Consequently, Mr. Marlow believes that the property along the west side of Hingeley Road has significant potential for future residential development. He also believes that rebuilding the proposed 115 kV line along the alignment of the existing 69 kV line would interfere with the possibility of widening Hingeley Road's right-of-way to 85 or 100 feet and would otherwise impede future development of the privately-owned parcels along the west side of Hingeley Road.<sup>69</sup>
63. Mr. Marlow noted that most of the property along the east side of Hingeley Road is publicly owned and has little potential for future development.<sup>70</sup>
64. Jeff Kletscher, the Mayor of Floodwood, also attended the hearings. While supporting the project as a necessary step to ensure that the city of Floodwood continues to have an ample and reliable supply of electrical power, Mr. Kletscher (also a realtor in Floodwood) spoke in agreement with Mr. Marlow in the view that the public would be better served by relocating the new 115 kV line onto public land on the east side of Hingeley Road rather than on developable private land along Hingeley Road's west side.<sup>71</sup>
65. John Sederinski is the local highway foreman for St. Louis County and his responsibilities include maintaining Hingeley Road. Mr. Sederinski stated that the current location of poles located along the west side of Hingeley Road have hindered the County's road maintenance. He stated that this area is adjacent to a creek, and there are several cut banks in the area. Many existing poles are located in the cut banks, and the County has not been able to clean and maintain the ditches adjacent to the road because removing material might cause poles to fall over. Mr. Sederinski supports relocating the 115 kV line to the east side of Hingeley Road and as far from the road as possible.<sup>72</sup>

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<sup>66</sup> ALJ Summary Of Testimony

<sup>67</sup> Ex. 20 through 38 Marlow Information

<sup>68</sup> ALJ Summary Of Testimony

<sup>69</sup> Id

<sup>70</sup> Id

<sup>71</sup> Id

<sup>72</sup> Id

66. Doug Bailey is a logger who has conducted logging on the publicly-owned parcels along the east side of Hingeley Road. He offered to conduct, at no cost, any additional logging on those parcels that might be necessary to relocate the 115 kV line there.<sup>73</sup>
67. Ms. Lommel indicated that the Applicants were neutral about whether to allow the line to remain on the west side of Hingeley Road or whether to relocate it on the publicly-owned parcels on the east side. She further stated that the Applicants had examined the environmental aspects of relocating the line to the east side of Hingeley Road and had concluded that there were no appreciable differences.<sup>74</sup>
68. At the request of the EFP staff, the Applicants agreed to submit along with their post-hearing comments a comparison table and map segments depicting a Marlow Alternative Alignment similar to those which had been included in the Environmental Assessment for other alternative route segments.<sup>75</sup>
69. It appeared from the public testimony that relocation of the existing alignment to the Marlow Alternative Alignment (i.e., from the west to the east side of Hingeley Road) would further impact one private parcel owed by Kenneth A. Kojo. Mr. Kojo was not present at either of the hearings. The Applicants stated that they would contact Mr. Kojo to determine his position on the proposed route relocation and report his position in post-hearing comments.<sup>76</sup>
70. Clarence Badger expressed concern that the 15 to 20-foot pole offset being proposed for portions of the line would result in further removal of trees from his property. The Applicants stated that no pole offset was being contemplated along the segment of the line where Mr. Badger's property is located. It was therefore unlikely that more vegetation would have to be removed from his property because of pole offsets. However, because of the increase in line voltage and stricter vegetation standards, the Applicants would likely be removing some vegetation within 50 feet on each side of the transmission centerline.
71. The Applicants agreed to consult with Mr. Badger before they removed any additional vegetation on his property.
72. Bob Rahja's residence is located on the north side of County Road 29; he also owns a strip of land on the south side of that road adjacent to the St. Louis River. The existing line is located on Mr. Rahja's property along the south side of County Road 29; Mr. Rahja had questions concerning vegetation removal.

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<sup>73</sup> ALJ Summary Of Testimony

<sup>74</sup> ALJ Summary Of Testimony

<sup>75</sup> Id

<sup>76</sup> Id

73. The Applicants are seeking to have an easement that extends 50 feet on each side of the transmission line, and they are currently uncertain about the extent to which the easement they are seeking would be coterminous with the existing road easement. When the Applicants are able to obtain more precise information about any additional easement needs, they will consult with Mr. Rahja about vegetation removal and other issues relating to his use of his land.<sup>77</sup>
74. Marjorie Phibbs lives on Villa Vista Circle, north of the city of Cromwell. Ms. Phibbs indicated that two transmission lines are currently located on her property. One of those lines is the existing 69 kV line and the other is Lake Country Power's distribution line. She inquired about any changes that would affect her property.<sup>78</sup>
75. The Applicants stated that the only change would be adding a 115 kV line on the existing poles.<sup>79</sup>
76. Ms. Phibbs also inquired whether the addition of a high voltage line might result in any adverse health effects. After determining that Ms. Phibbs' home is located at least 100 feet from the existing line, the Applicants stated that her house was not close enough to the line to cause any additional concern.<sup>80</sup>
77. Robert Jobe asked about whether the existing easements are all recorded and, if so, where. The Applicants responded that many easements are out of date and others may never have been recorded. Consequently, the Applicants plan to negotiate individually with all property owners whose land will be affected by the project in order to obtain updated and recorded easements.<sup>81</sup>
78. Robert Johnston and Bob Rahja both expressed concern about the Cedar Valley-Savanna Alternative Route Segment, stating that the project would then directly impact property which they owned that is currently unaffected by the project.<sup>82</sup>
79. Two state agencies filed written comments, the Minnesota Pollution Control Agency (MPCA) and the Minnesota Department of Natural Resources (MnDNR).<sup>83</sup>
80. The MPCA commented on the need for down-stream permitting (i.e., National Pollution Discharge Elimination System/Stormwater permit, wetland permits, and crossing public waters permits), clearing of vegetation and use of herbicides, and heavy equipment management.<sup>84</sup>

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<sup>77</sup> ALJ Summary Of Testimony

<sup>78</sup> Id

<sup>79</sup> Id

<sup>80</sup> Id

<sup>81</sup> Id

<sup>82</sup> Id

<sup>83</sup> Id

81. The MnDNR commented on the use of herbicides and avian collision with transmission lines.<sup>85</sup>

82. On November 23, 2011, post-hearing comments were received from Saint Louis County (Mr. Mark Weber, Resource Management Supervisor); the County stated that it was open to the option of utilizing tax forfeited land located across Hingeley Road and to the east of the existing line as an alternative alignment (Marlow Alternative Alignment) for the 115 kV line. Mr. Weber further stated that such an opportunity was consistent with its history of offering public lands for the routing of new and upgraded power utilities in the region.<sup>86</sup>

83. On November 29, 2011, GRE submitted post-hearing comments; these comments contained information relative to the Marlow Alternative Alignment. Included in these comments were: 1) aerial maps illustrating the Marlow Alternative Alignment, 2) a comparative impacts table incorporating the Marlow Alternative Alignment, and 3) documentation from Mr. Kojo indicating that he had no objections to relocating the line to his side of Hingeley Road with the understanding that he would be able to keep any timber on his property that would have to be cut.<sup>87</sup>

### **Environmental Assessment**

84. In the route permit application, the Applicant identified a Proposed Route of approximately 37 miles. The project's 115 kV lines will replace approximately 16 miles of existing 69 kV line between the Cedar Valley and the Gowan substations. Between the Gowan and Cromwell substations, approximately 21 miles of existing Great River Energy 69 kV transmission line will be rebuilt on double circuit structures with the Project's 115 kV line. These transmission lines are located entirely in Minnesota, in St. Louis and Carlton counties.<sup>88</sup>

85. The Energy Facility Permitting staff of the Department of Commerce elected to combine its environmental review responsibilities under the Certificate of Need process with the environmental review procedures under the HVTL Route Permit procedures (Minnesota Rule 7849.1900, Subpart 1) for the Savanna Transmission Line project. The result was a single environmental review document, an Environmental Assessment.<sup>89</sup>

The environmental assessment addressed the issues required in Minnesota Rules 7849.1500, subpart 1 and Minnesota Rules, 7850.3700, subpart 4, and as determined in the Scoping Decision of June 10, 2011.

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<sup>84</sup> ALJ Summary Of Testimony

<sup>85</sup> Id

<sup>86</sup> Id

<sup>87</sup> Id

<sup>88</sup> Ex. 2 (Application)

<sup>89</sup> Ex. 11 Environmental Assessment

86. Through the Scoping process two alternative route segments/alignment modifications were identified for evaluation in the environmental assessment; the three alternatives were named, the Goodell Alternative, the Lund Alternative and the Cedar Valley to Savanna Alternative.<sup>90</sup>

### *Socioeconomic and Cultural Values*

87. There will be short-term impacts to community services as a result of construction activity and an influx of contractor employees during construction of the various segments of the project. Both utility personnel and contractors will be used for construction activities. The communities near the project should experience short-term positive economic impacts through the use of the hotels, restaurants and other services by the various workers.<sup>91</sup>

88. There is no indication that any minority or low-income population is concentrated in any one area of the project, or that the transmission line would cross through an area occupied primarily by any minority group.<sup>92</sup>

89. One of the first concerns of many residents near existing or proposed transmission lines is how that proximity could affect the value of their property. In the matter of property values, potential impact would typically be a negotiated settlement in an easement agreement between the Applicants and the landowner. In this case, the incremental differences between properties with the existing 69 kV and the same properties with the proposed 115 kV HVTL would be difficult to discern.<sup>93</sup>

### *Displacement*

90. The proposed project maximizes the use of existing transmission line corridors – the proposed route uses existing transmission rights-of-way for the majority of its length. The use of existing transmission line corridors was an important factor for this project because using existing corridors reduces transmission line proliferation and new impacts to residences. There is no structure along the route of this project that would require relocation. Displacement of residential homes or businesses is not anticipated.<sup>94</sup>

### *Noise*

91. The Minnesota Pollution Control Agency (MPCA) has established standards for the regulation of noise levels.<sup>95</sup>

92. For residential, commercial and industrial land, the MPCA noise limits are 60-65 A-weighted decibel (dBA) during the daytime and 50-55 dBA during the nighttime.<sup>96</sup>

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<sup>90</sup> Ex. 10 (Memorandum on Scoping Decision & Scoping Decision)

<sup>91</sup> Ex. 11 at p. 30-31 (EA)

<sup>92</sup> Id

<sup>93</sup> Ex. 11 at p. 32-34 (EA)

<sup>94</sup> Ex. 11 at p. 34 (EA)

<sup>95</sup> Ex. 11 at p. 34-37 (EA)

93. The project consists of a 115 kV transmission line and a 115/69 kV double circuit transmission line. Computer modeling performed by Applicants using the BPA 1977 software under the worst case wet conditions scenario indicated that the audible L5 and L50 noise levels measured at the edge of the 100 wide right-of-way (50 feet from centerline) would be at 17.7 and 14.2 dBA, respectively, well below the MPCA nighttime L50 limit of 50 dBA for Noise Area Classification 1.<sup>97</sup>
94. Transformer “hum” is the dominant noise source at substations. Transformer hum is caused by magnetostrictive forces within the core of the transformer. These magnetic forces cause the core laminations to expand and contract, creating vibration and sound at a frequency of 100Hz (twice the a.c. mains frequency), and at multiples of 100Hz (harmonics). Typically, the noise level does not vary with transformer load, as the core is magnetically saturated and cannot produce any more noise.<sup>98</sup>
95. The nearest occupied homes to the Cedar Valley Substation, the proposed Savanna Switching Station and the Cromwell Substation are located approximately 400 feet, 1,100 feet and 500 feet from the facilities, respectively. It would be very unlikely that substation noise would be audible at these homes.<sup>99</sup>
96. The Applicants have stated that the substations will be designed and constructed to comply with state noise standards established by the Minnesota Pollution Control Agency.<sup>100</sup>
97. Short-term exceedance of daytime noise standards associated with initial construction of all routes is expected to occur during daytime hours as the result of heavy equipment operation and increased vehicle traffic associated with the transport of construction materials and personnel to and from the work area. The short-term exceedance of daytime noise standards would be intermittent and temporary in nature. Minnesota nighttime noise level standards will not be exceeded.<sup>101</sup>

### *Aesthetics*

98. Because the proposed project will mainly follow existing 69 kV transmission line routes, the project will have nominal effects on the visual and aesthetic character of the area. The structures will be about 60 to 85 feet tall and will have a span of approximately 350 to 400 feet. A maximum span of 400 feet will be used between the structures, which will still keep the conductor within the right-of-way under blowout conditions. The usual right-of-way required for these types of structures is 100 feet wide.<sup>102</sup>

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<sup>96</sup> Minn. R. 7030.0400; Ex. 13 at p30-31

<sup>97</sup> Ex. 11 at p. 34-37 (EA)

<sup>98</sup> Id

<sup>99</sup> Id

<sup>100</sup> Id

<sup>101</sup> Id

<sup>102</sup> Ex. 11 at p. 34-37 (EA)

99. The existing transmission line structures vary in height between 50 to 55 feet. By comparison, the proposed transmission line structures will generally be slightly taller. The overall spacing of the poles will be comparable to the current layout, which varies greatly by engineering and land use constraints.<sup>103</sup>
100. The proposed transmission line will cross the St. Louis River in two different locations. Crossing the St. Louis River will not perceptibly change the existing viewshed of the area because the proposed route will follow the existing transmission line ROW. The potential aesthetic impact resulting from new, somewhat taller, structures will be imperceptible to most viewers.<sup>104</sup>
101. Like the existing 69 kV transmission line, the new single circuit and double circuit transmission line will be visible to area residents. The majority of the landscape in the project area is undeveloped. The visual effect will depend largely on the perceptions of the observers. The visual contrast added by the transmission structures and lines may be perceived as a visual disruption. The transmission lines and substations that already exist in the project area will limit the extent to which the new line and substation are viewed as a disruption to the area's scenic integrity.<sup>105</sup>
102. Although the transmission line would be visible throughout most of its length, it is not incompatible with its setting amongst existing transmission lines, public transportation corridors and residential development along the route.<sup>106</sup>

#### *Public Health and Safety*

103. The Applicant will ensure that all safety requirements meet NESC standards during the construction and operation of the proposed transmission line and associated facilities<sup>107</sup>
104. The project will be designed and constructed in compliance with local, state, NESC and Great River Energy/Minnesota Power standards regarding clearance to the ground, clearance to crossing utilities, strength of materials and right-of-way widths.<sup>108</sup>
105. The project will be equipped with protective devices to safeguard the public in the event of an accident. The protective equipment is designed to de-energize the transmission line should such an event occur.<sup>109</sup> In addition, the associated facilities will be properly fenced and accessible only by authorized personnel.

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<sup>103</sup> Ex. 11 at p. 34-37 (EA)

<sup>104</sup> Id

<sup>105</sup> Id

<sup>106</sup> Id

<sup>107</sup> Ex. 11 at p. 39 (EA)

<sup>108</sup> Id

<sup>109</sup> Ex. 11 at p. 39-40 (EA)

106. The issue of electric and magnetic fields was discussed in the environmental assessment.<sup>110</sup> A number of national and international health agencies (the Minnesota Department of Health, the World Health Organization, the National Institute of Environmental Health Sciences) have concluded in their research that there is insufficient evidence to prove a connection between electric and magnetic field exposures and health effects. Research has not been able to establish a cause and effect relationship between exposure to magnetic fields and human disease, nor a plausible biological mechanism by which exposure to electric and magnetic fields could cause disease.<sup>111</sup> The maximum magnetic field for this project, as calculated by the Applicant, would be 9.13 milligauss (peak load), one meter above the ground and directly below the line.<sup>112</sup> No Minnesota regulations have been established pertaining to magnetic fields from high-voltage transmission lines.<sup>113</sup>
107. The absence of any demonstrated impact by magnetic field exposure supports the conclusion that no adverse effects from magnetic fields on human health/welfare are expected for persons living or working at locations along or near the proposed project.<sup>114</sup>
108. Transmission lines (alternate current or AC) can induce “stray” voltage on nearby conductive objects. When the electric-magnetic field of a transmission line is within range of a nearby conductive object, a voltage may be induced on the object. The magnitude of the voltage depends on the weather conditions, the objects ability to collect an electric charge (capacitance), and vary with the object’s shape, size, orientation and location, object to ground resistance.<sup>115</sup>
109. If a voltage is induced on an object insulated from the ground and a person touches the object, a small current (induced current or stray voltage) would pass through their body to the ground. This current may produce a spark discharge or mild shock to the individual. This type of stray voltage occurs most often on long fences and distribution lines built under transmission. Proper grounding of metal objects under the transmission line is the best method of avoiding these shocks. Most shocks from induced current are considered more of a nuisance than a danger. The Minnesota Public Utilities Commission electric field limit of 8 kV/m was designed to prevent serious hazard from shocks due to induced voltage under transmission lines. The NESC sets an induced current limit of five milliamps(mA) for objects under transmission lines.<sup>116</sup>
110. Stray voltage describes any case of elevated potential, but more precise terminology gives an indication of the source of the voltage.<sup>117</sup>

Neutral to earth voltage (NEV) specifically refers a condition that can occur on the electric service entrances to structures from distribution lines. More precisely, stray voltage is a voltage that exists between the neutral wire of the service entrance and grounded objects in buildings such as barns and milking parlors.

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<sup>110</sup> Ex. 11 at p. 40-49 (EA)

<sup>111</sup> Ex. 11 at p. 40-49 (EA)

<sup>112</sup> Id

<sup>113</sup> Id

<sup>114</sup> Id

<sup>115</sup> Id

<sup>116</sup> Id

<sup>117</sup> Id

HVTLs carry power at a high voltage from generating plants to substations. At the substation, the voltage is lowered for distribution and distribution lines delivery power to consumers (homes, businesses, and industry). Power distribution lines may cause NEV stray voltage on electric service entrances to structures. Transmission lines do not create NEV stray voltage as they do not directly connect to businesses or residences.

111. The quality of the farm/structure wiring system has the largest single influence on contact voltage. Stray voltage (NEV) sources can be reduced in three fundamental ways: reduce the current flow on the neutral system; reduce the resistance of the neutral system; or improve the grounding of the neutral system. Making good electrical connections and making sure that these connections are maintained by the proper choice of wiring materials for wet and corrosive locations will reduce the resistance of the grounded neutral system and thereby reduce NEV levels.<sup>118</sup>
112. Appropriate measures will be taken by the Applicant during transmission line design, construction, and operation to prevent the potential for any stray voltage problems from this project. As a condition of the permit, all fixed metallic objects on or off the right-of-way, except electric fences that parallel or cross the right-of-way, will be grounded to the extent necessary to limit the induced short circuit current between ground and the object and to comply with the ground fault conditions specified in the NESC.<sup>119</sup>

### *Recreation*

113. Recreational opportunities in St. Louis and Carlton counties include hiking, biking, canoeing, boating, fishing, camping, equestrian riding, swimming, hunting, snowmobiling and nature observation.<sup>120</sup>
114. There are no state or national forests or parks, national wildlife refuges, federal waterfowl production areas, state trails, scientific and natural areas, wildlife management areas, or county parks present within the proposed route.<sup>121</sup>
115. The project will involve two crossings of the St. Louis River. Utility lines are already part of this landscape, and because the existing transmission line will be rebuilt within the same ROW, the recreational uses of these resources will not be affected. No significant changes to the visual setting or recreational uses for people using this section of the river are expected. The Applicants will coordinate with the DNR to ensure utility line construction will not impact the surrounding natural resources.<sup>122</sup>
116. The proposed route crosses snowmobile trails in both St. Louis and Carlton counties. The trails are located within Van Buren Township in St. Louis County and Red Clover Township in Carlton

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<sup>118</sup> Ex. 11 at p. 40-49 (EA)

<sup>119</sup> Id

<sup>120</sup> Ex. 11 at p.49-50 (EA)

<sup>121</sup> Id

<sup>122</sup> Id

County. The proposed transmission line will likely stay within the same ROW corridor, therefore it will not significantly affect the visual field of snowmobilers. This recreational use will not be impacted by the proposed project.<sup>123</sup>

117. Where the rebuilt lines are constructed, the visual setting for people biking, hiking, boating or birding near the new lines may be slightly affected. It is also possible that clearing vegetation underneath the utility lines will decrease the wildlife habitat within the immediate vicinity, potentially impacting viewing opportunities for the short term. Again, because there is an existing line in place, vegetation clearing will be limited.<sup>124</sup>

#### *Land-based Economies*

118. Construction and maintenance of the project will result in permanent and temporary impacts to farmland such as soil compaction and crop damage. Construction of new transmission structures and removal of existing structures will require repeated access to structure locations to install foundations, structures and conductors. Equipment used in this process includes drill rigs, concrete trucks, backhoes, cranes, boom trucks and assorted small vehicles.<sup>125</sup>

119. The transmission line would cross approximately 5.7 miles of agricultural land. There is no prime farmland along the proposed route. Some agricultural land will be temporarily removed from production during transmission line construction, but permanent agricultural land conversion associated with the transmission line will be minimal. Landowner compensation will be established by individual easement agreements. In general, agricultural areas surrounding transmission line poles can still be farmed. Because the proposed transmission line is along an existing route, impacts will be limited to the existing utility corridor.<sup>126</sup>

120. Both St. Louis and Carlton counties are heavily forested; public agencies manage just under half of these forested lands. The proposed transmission line crosses wooded areas, some of which are privately-owned woodlots and shelterbelts. The transmission line would cross approximately 5.6 miles of upland forested land.<sup>127</sup>

Because the route follows existing ROW for much of its length, clearing of trees would be minimal. Impacts to forested areas and shelterbelts along the rebuild portion of the route would be incidental, and would be limited to the amount necessary to permit safe and reliable operation of the transmission line. Due to safety concerns, any trees that would grow taller than 15 feet within the ROW would need to be removed beneath overhead lines. Additionally, a 10-foot radius around each structure would be kept free of woody vegetation.<sup>128</sup>

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<sup>123</sup> Ex. 11 at p.49-50 (EA)

<sup>124</sup> Id

<sup>125</sup> Ex. 11 at p. 50-53 (EA)

<sup>126</sup> Id

<sup>127</sup> Id

<sup>128</sup> Id

121. According to the Minnesota Department of Transportation (MnDOT) county pit maps for St. Louis and Carlton counties, there are gravel pits, rock quarries and commercial aggregate sources in the vicinity of the project. Because no existing gravel and rock resources are being utilized within the proposed route, no impacts are anticipated. Unknown resources that may exist along the proposed route would be situated in close proximity to existing utility and roadway ROW, making development unlikely.<sup>129</sup>
122. There are no mineral mining or “known but undeveloped resources” along the proposed route, the project has a low potential to impact mineral mines. The project would be constructed in the existing ROW and the number of transmission line poles may be reduced. Any potential aggregate resources in the ROW would have already been impacted in terms of their availability for development. There would be no additional impacts on potential aggregate resources in the project area.<sup>130</sup>

### *Land Use*

123. The project covers a variety of land use patterns in a generally rural environment. The route runs along State Highway 73, continuing along Hingley Road, County Rd 965 (CSAH 86), Duluth Street, Vincent Road (CSAH 8), Hill Rd, Benson Road (CR 171), CSAH 29, Stremel Road (CR 192) and Parantala Road (CR 732). The route is dominated by forest, with areas of grassland, cropland, wetlands and waters, and residential land uses.<sup>131</sup>
124. A portion of the proposed project is located in southwestern St. Louis County where it crosses Cedar Valley, Van Buren, Floodwood and Fine Lakes townships. The St. Louis County current Zoning Map shows that the majority of the route crosses areas with zoning classifications of Forest Agricultural Management and Mixed Use (Multiple Use Non-Shoreland), with some Residential areas associated with lakes near the St. Louis County/Carlton County border.<sup>132</sup>

In the vicinity of the proposed route, the St. Louis River is defined as a Shoreland Mixed Use zoning district in St. Louis County. The proposed crossing of the St. Louis River is in an existing corridor and complies with the zoning district use restrictions.<sup>133</sup>

The proposed route crosses northwestern Carlton County in Eagle and Kalevala townships. According to the Carlton County Zoning Map, the majority of the route crosses areas with zoning classifications of Agricultural/Forest Management (A-1) and Agriculture/Rural Residential (A-2). There is also a Municipality (City of Cromwell) and a small portion of Recreation Residential (R-1) at the south end of the project.<sup>134</sup>

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<sup>129</sup> Ex. 11 at p. 50-53 (EA)

<sup>130</sup> Id

<sup>131</sup> Id

<sup>132</sup> Id

<sup>133</sup> Id

<sup>134</sup> Id

125. The existence of a transmission line easement restricts some possible uses for the property. Acceptable uses within the easement areas include planting crops, pasture, roadways, curbs and gutters. The two most common restrictions would include prohibiting construction of permanent structures or buildings within the easement area and restrictions on planting trees that may grow into the lines; properties with existing structures very close to or within the current ROW may have further restrictions placed on them.<sup>135</sup>
126. In general, the rebuild portions of the line would not create new impacts on existing or proposed land use; therefore, no mitigation would be necessary for the majority of the proposed rebuild; however, potential impacts to those properties with existing structures very close to or within the current ROW may be mitigated through final design efforts such as placing the conductors on a single side of the support towers, adjustments in final alignment within the proposed route, and selection of span width and tower placement.<sup>136</sup>
127. The project would be design to meet or exceed the clearance standards provided in NESC Section 232 for a 115 kV transmission line, which require a 9' 1" horizontal distance between the conductor and a building; a 15' 1" vertical distance between the conductor and a roof/balcony accessible by people; and a 20' 1" vertical distance between the conductor and a roadway or parking lot.<sup>137</sup>

#### *Public Services*

128. Public services and utilities are generally defined as services provided by government entities including hospitals, fire and police departments, schools, roads and highways, public parks, and water supply. Utilities also include private wells, septic systems and other utilities.
129. The transportation network that may be used to develop and operate this project is comprised of various county, trunk and U.S. highways. Few urban areas exist within the project area. Two active BNSF Railway Company railroad lines are present within the project area.<sup>138</sup> MnDOT has adopted a formal policy and procedures for accommodation of utilities on the highway rights-of-way (Utility Accommodation Policy).<sup>139</sup>

Short-term localized traffic delays are anticipated. The impacts resulting from construction and operation of the proposed transmission lines and modifications to substations would be minimal for transportation.<sup>140</sup>

#### *Archaeological and Historic Resources*

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<sup>135</sup> Ex. 11 at p. 50-53 (EA)

<sup>136</sup> Id

<sup>137</sup> Id

<sup>138</sup> Ex. 11 at p. 55-57 (EA)

<sup>139</sup> Id

<sup>140</sup> Id

130. One archaeological site and 39 inventoried historic properties were located within one mile of the project.<sup>141</sup>
131. Archaeological sites may be disturbed during construction of transmission structures, substations and substation expansions, maintenance structures, staging areas or access roads. Historic buildings or other sites may be impacted as well in that construction of modern transmission structures may compromise the integrity of a historic viewshed from or to above ground archaeological and historic resources.<sup>142</sup>
132. The proposed project is the rebuild of an existing line and is adjacent to roads for approximately 76 percent of the length, the corridor has already been disturbed and the likelihood of affecting archaeological resources or new impacts to historical properties is relatively low.<sup>143</sup> Should a specific impact be identified during field/survey/construction activities, the Applicants will consult with SHPO on the appropriate course of action, as noted in the proposed route permit.<sup>144</sup>

#### *Air Quality*

133. There is minimal air quality impacts associated with transmission line operation. The only potential air emissions from a transmission line result from corona. Corona can produce ozone and oxides of nitrogen in the air surrounding the conductor. Corona consists of the breakdown or ionization of air in a few centimeters or less immediately surrounding conductors. For 115/115 kV double-circuit, 115 kV single-circuit and 161 kV single-circuit transmission lines, the conductor gradient surface is usually below the air breakdown level.<sup>145</sup>
134. Calculations done for a 345 kV project showed that the maximum one hour concentration during foul weather (worst case) would be 0.0007 ppm ozone. This is well below both the federal (0.075 ppm 8 hour) and state standards (0.08 ppm 8 hour) for ozone.<sup>146</sup>
135. Construction of the project will result in temporary air quality impacts caused by, among other things, construction-vehicle emissions and fugitive dust from right-of-way clearing. The Applicants will implement the appropriate dust control measures, as required.<sup>147</sup>

#### *Water Quality and Water Resources*

136. The project lies within the St. Louis watershed of the Lake Superior Basin.<sup>148</sup>

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<sup>141</sup> Ex. 11 at p. 57-59 (EA)

<sup>142</sup> Id

<sup>143</sup> Id

<sup>144</sup> Id (EA)

<sup>145</sup> Ex. 11 at p. 59-60 (EA)

<sup>146</sup> Id

<sup>147</sup> Id

<sup>148</sup> Ex. 11 at p. 61-65 (EA)

137. Lakes in the project area include Prairie Lake (848 acres), Mud Lake, Blackwood Lake (34 acres), Cross Lake (104 acres), Springer Lake (8 acres), North Island Lake (113 acres), South Island Lake (319 acres), Flower Lake (12 acres) and Eagle Lake (389 acres). The route comes the closest to Cross Lake, approximately 140 feet from the riparian area and 300 feet from open water.<sup>149</sup>
138. There are a number of rivers and streams in the project area, including the St. Louis River, Floodwood River, East Savanna River, McCarty River, Prairie River, Tamarack River, Kettle River and Heikkila Creek. The proposed transmission line will cross tributaries to the Floodwood River, the St. Louis River and tributary, McCarty River, Prairie River, Tamarack River and two drainages between lakes.<sup>150</sup>
139. The transmission line would cross approximately 5.9 miles of National Wetland Inventory wetlands. Scrub-shrub and forested wetlands are the dominant wetland types.<sup>151</sup>
140. The proposed transmission line rebuild will have minor, mostly short term effects on surface water resources. Most potential effects on surface waters will be related to reconstruction of the transmission line across wetlands proximal to the existing transmission corridor. The project may require wetland and water resource approvals from the U.S. Army Corps of Engineers (USCOE), MnDNR, St. Louis County, and Carlton County.<sup>152</sup>
141. Indirect impacts could include sedimentation reaching surface waters during construction due to ground disturbance by excavation, grading, construction traffic, and dewatering of holes drilled for transmission structures. These impacts will be avoided and minimized using appropriate sediment control practices and best management practices (BMPs).<sup>153</sup>
142. Disturbed areas of one acre or more (proposed substation) will be regulated by a National Pollutant Discharge Elimination System (NPDES) permit and Stormwater Pollution Prevention Plan prepared for the project. Mitigation under the NPDES permit includes implementation of the Stormwater Pollution Prevention Plan with the appropriate erosion control methods developed specifically for the site. The Minnesota Pollution Control Agency (MPCA) issues combined NPDES/State Disposal System permits for construction sites, industrial facilities and municipal storm sewer systems. Compliance with the MPCA stormwater program will be a condition of the route permit.<sup>154</sup>

### *Flora*

143. Transmission line construction impacts to trees and woodlands will be minimized because the transmission line will follow existing right-of-way for the majority of its route. Temporary impacts may occur due to activities associated with pole construction, including minor vegetative clearing for

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<sup>149</sup> Ex. 11 at p. 61-65 (EA)

<sup>150</sup> Id

<sup>151</sup> Id

<sup>152</sup> Id

<sup>153</sup> Id

<sup>154</sup> Id

excavation, leveling and heavy equipment traffic. Vegetative clearing would include felling trees along the existing transmission line route and temporarily trimming or removing any shrubs or tall grass. Similar to existing maintenance practices, trees that would grow to taller than 15 feet would be removed beneath the overhead lines.<sup>155</sup>

144. Sound water and soil conservation practices will be maintained during construction and operation of the project to protect topsoil and adjacent water resources, and minimize soil erosion. Areas disturbed due to construction activities would be restored to pre-construction contours. In non-cultivated areas, reseeding would occur in a timely manner using a seed mix certified to be free of noxious weeds.<sup>156</sup>

### *Fauna*

145. The croplands, grasslands, wetlands, and woodlands in the area provide habitat for a variety of wildlife. Wildlife and other organisms that inhabit the project area include small mammals such as mice, voles, and ground squirrels; large mammals such as white-tailed deer; waterfowl and other water birds like pelicans and egrets, songbirds, raptors, upland game birds; and reptiles/amphibians such as frogs, salamanders, snakes, and turtles.<sup>157</sup>

146. Wildlife that resides within the construction zone will be temporarily displaced to adjacent habitats during the construction process.<sup>158</sup>

147. The reconstructed transmission line may affect raptors, waterfowl and other bird species. Birds have the potential to collide with all elevated structures, including power lines. Avian collisions with transmission lines can occur in proximity to agricultural fields that serve as feeding areas, wetlands and water features, and along riparian corridors that may be used during migration.<sup>159</sup>

148. The MnDNR has expressed a desire to be consulted with by the Applicant during final design on the need, type and placement of swan flight diverters.<sup>160</sup>

149. The electrocution of large birds, such as raptors, is more commonly associated with small distribution lines than large transmission lines. Electrocution occurs when birds with large wingspans come in contact with two conductors or a conductor and a grounding device. Utility transmission and distribution line design standards provide adequate spacing to eliminate the risk of raptor electrocution and will minimize potential avian impacts of the proposed project.<sup>161</sup>

### *Rare and Unique Natural Resources*

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<sup>155</sup> Ex. 11 at p. 65 (EA)

<sup>156</sup> Ex. 11 at p. 65 (EA)

<sup>157</sup> Ex. 11 at p. 66 (EA)

<sup>158</sup> Id

<sup>159</sup> Id

<sup>160</sup> ALJ Summary of Testimony (Letter from Jamie Schrenzel, MnDNR)

<sup>161</sup> Ex. 11 at p. 66 (EA)

There are nine known occurrences of rare or unique resources identified within 2.0 miles of the project area. These resources were identified using the MnDNR Natural Heritage Database. These occurrences include two vertebrate species, five plant species, one butterfly species and one colonial waterbird nesting area. All of the occurrences of rare features, except for one botanical feature, were recorded outside of the proposed route. The proposed route passes just to the west of a DNR Site of Moderate Biodiversity Significance south of Gowan.<sup>162</sup>

150. In general, impacts to rare and unique natural resources would be avoided because the project is a rebuild of an existing line along most of the route.<sup>163</sup>

151. The DNR was contacted by the Applicants requesting information on the possible effects of the proposed project on rare and unique features in the project area. In an email dated December 8, 2010, the DNR indicated that there were no concerns regarding rare features for the Savanna Project<sup>164</sup>.

#### *Comparison of Alternative Route Segments/Alignments*

152. Alternative routes, alternative route segments and modifications to GRE/MP's proposed alignment were discussed during the scoping meeting, in comments received during the scoping comment period, and in the public hearing record. Three alternative route segments/alignment modifications were carried from the scoping process into the environmental review; they are the Goodell Alternative, the Lund Alternative and the Cedar Valley to Savanna Alternatives.<sup>165</sup> A fourth alternative was introduced during the public hearing, the Marlow Alternative Alignment.<sup>166</sup>

153. The Goodell alternative route segment modifies an approximately one mile segment of the proposed route along CSAH 86 (Hingeley Road) where the road runs west from the intersection of Norlund Road (Township Road 5004) in Fine Lakes Township.<sup>167</sup>

154. The Goodell alternative route segment would impact five new parcels; four corporate owned (Potlatch Corporation and Northwest Paper Company) parcels and one private, undeveloped parcel (Hokala). The relocation of the ROW would move the line off of four privately owned parcels, two of which are developed.<sup>168</sup> The Goodell Alternative is approximately 1,737 feet shorter in length than the proposed alignment, would impact 2.6 additional acres of wetlands than the proposed alignment, and would cost an estimated \$67,000.00 more than the proposed alignment.<sup>169</sup>

155. The Lund Alternative Route Segment would modify an approximately two mile segment of the proposed route along Stremel Road (CR 192), between the proposed Savanna Switching Station

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<sup>162</sup> Ex. 11 at p. 65-69 (EA)

<sup>163</sup> Ex. 13 at p. 63-64 (EA)

<sup>164</sup> Ex. 2 at Appendix G (Application).

<sup>165</sup> Ex. 10 (Memorandum on Scoping Decision & Scoping Decision)

<sup>166</sup> ALJ Summary of Testimony

<sup>167</sup> Ex. 11 at p. 70-72 (EA)

<sup>168</sup> Id

<sup>169</sup> Id

north to Parantala Road (County Road 732) in Van Buren Township. The current 69 kV line runs along the west side of Stremel Road (CR 192) from the proposed switching station to Parantala Road (County Road 732); the Lund Alternative Route Segment would relocate this ROW so that it follows the east side of Stremel Road.<sup>170</sup>

156. The Lund alternative would impact nine new parcels; two State of Minnesota owned and seven privately owned parcels, four of the parcels are developed. The current 69 kV line crosses 10 privately owned parcels along the subject portion of the route, two of which are developed.<sup>171</sup>
157. The Lund Alternative is approximately 1,233 feet longer in length than the proposed alignment, would impact 2.9 additional acres of wetlands than the proposed alignment, and would cost an estimated \$26,000.00 more than the proposed alignment.<sup>172</sup>
158. The possibility of utilizing “hot-work” in an effort to avoid the need for the off-set was evaluated in the Environmental Assessment; given the transmission structures, the unstable nature of the area soils, and single circuit configuration, these methods are not practical. The estimated cost different is approximately \$563,000.00.<sup>173</sup>
159. The proposed route with off-set, relative to Lund Memorial site, was evaluated in the Environmental Assessment (see Figure 9 in the EA). The memorial site would be approximately 157 feet from the centerline of the new 115 kV transmission if the line were to be constructed as proposed; this would leave a distance of approximately 107 feet between the memorial and the edge of the cleared ROW.<sup>174</sup>
160. The Cedar Valley to Savanna alternative route segment was developed to avoid the property issues (primarily the Lund property) associated with the need to “off-set” the transmission line ROW between the proposed Savanna Switching Station and the Cedar Valley Substation.<sup>175</sup>
161. This alternative would impact 23 new parcels; eight State of Minnesota owned and 15 private parcels, five of the parcels are developed. This route parallels existing HVTLs along its entire length.<sup>176</sup>
162. The Cedar Valley to Savanna Alternative is approximately 3,537 feet longer in length than the proposed alignment, would impact 144 additional acres of wetlands than the proposed alignment, and would cost an estimated \$2,177,000.00 more than the proposed alignment.<sup>177</sup>

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<sup>170</sup> Ex. 11 at p. 72-76 (EA)

<sup>171</sup> Id

<sup>172</sup> Id

<sup>173</sup> Id

<sup>174</sup> Id

<sup>175</sup> Ex. 11 at p. 76-79 (EA)

<sup>176</sup> Id

163. The Marlow Alternative Alignment was not previously discussed in the Department's scoping decision, or in the Environmental Assessment. The requested alternative alignment is within the Applicant's proposed route which was evaluated in the EA; additionally, sufficient information has been added to the record during the hearing and in post-hearing comments to supplement this assessment.<sup>178</sup>
164. The Marlow Alternative alignment would follow along the east side of Hingeley Road, from GRE pole #333 southward toward the St. Louis River to GRE pole #302, just north of the St. Louis River. This alternative would impact 3 new parcels (State of Minnesota owned) and an added portion (additional 500 feet) of a private parcel (Kenneth Kojo).<sup>179</sup>
165. The difference between the Marlow Alternative and the proposed alignment relative to length, wetlands and cost is negligible.<sup>180</sup>

#### *Unavoidable Impacts*

166. The Savanna Transmission line project would have no significant unavoidable adverse impacts. It would not have the same level of impacts that are usually associated with the construction of new transmission line due to the fact that it is a rebuild of an existing line. As the project is a mostly a rebuild, the bulk of the new impacts would be related to those short term impacts that are associated with the construction of the transmission line project. The long term impacts of the transmission line, those related to land and visual impacts, have already been realized with the existing line.<sup>181</sup>
167. Operating the transmission line at the higher voltage level of 115 kV would also not result in a significant environmental impact. In addition, the significant ROW sharing associated with this project would further mitigate the direct impacts associated with the construction of the new line.<sup>182</sup>
168. There are few commitments of resources associated with this project that are irreversible and irretrievable, but those that do exist are primarily related to construction. Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that the use of these resources have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action. Construction resources that would be used include aggregate resources, concrete, steel, and hydrocarbon fuel.<sup>183</sup>

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<sup>177</sup> Ex. 11 at p. 76-79 (EA)

<sup>178</sup> ALJ Summary of Testimony

<sup>179</sup> Id

<sup>180</sup> Id

<sup>181</sup> Ex. 11 at p. 80 (EA)

<sup>182</sup> Id

<sup>183</sup> Ex. 11 at p. 80 (EA)

### **Requirements of Statute and Rule**

169. Minn. Stat. § 216B.243, subd. 2, states that no large energy facility shall be sited or constructed in Minnesota without the issuance of a certificate of need by the Commission. Minn. Stat. § 216B.2421, subd. 2(3) defines a “large energy facility” as any high voltage transmission line with a capacity of 100 kV or more with more than ten miles of length or that crosses a state line.
  
170. Minn. Stat. § 216E.03, subd. 7, and Minn. R. 7850.4100 provide considerations in designating sites and routes and determining whether to issue a permit for a large electric power generating plant or a high-voltage transmission line.

Based on the Findings of Fact, the Commission makes the following:

### **CONCLUSIONS OF LAW**

1. Any of the foregoing Findings more properly designated as Conclusions of Law are hereby adopted as such.
2. The Commission has jurisdiction over the subject matter of this proceeding pursuant to Minnesota Statute Minn. Stat. § 216E.03, subd. 2.
171. The Project qualifies for review under the alternative permitting process of Minn. Stat. § 216E.04 and Minn. R. 7850.2800.
3. The Applicant, the DOC and the Commission have complied with all procedural requirements required by law.
4. The EFP has completed an Environmental Assessment on this project as required by Minn. Stat. § 216E.04, subd. 5, and Minn. R. 7850.3700.
5. The Commission has considered all the pertinent factors relative to its determination of whether a route permit should be approved as required by Minn. Stat. § 216E.03, subd. 7, and Minn. Rule 7850.4100.
6. The conditions included in the route permit are reasonable and appropriate.

Based on the Findings of Fact, Conclusions of Law contained herein and the entire record of this proceeding, the Commission hereby makes the following:

### **ORDER**

1. A route permit is hereby issued to Great River Energy and Minnesota Power to construct the new Savanna 115 kilovolt (kV) Switching Station near Floodwood, Minnesota, and to rebuild approximately 37 total miles of existing 69 kV transmission line to 115 kV specifications between:
  - Lake Country Power's existing Cedar Valley Substation and the new Savanna Switching Station, and
  - The Savanna Switching Station, Lake Country Power's existing Gowan Substation, and Great River Energy's existing Cromwell Substation.
2. The route permit includes the Goodell Alternative Route Segment and the Marlow Alternative Alignment.
3. The Commission approves a route width of 150 feet on each side of the centerline of the existing 69 kV facilities (300 feet total width), except along the portion of the route identified as the Goodell Alternative. In this area the HVTL Route Permit specifies the placement of the

transmission line alignment (ROW) and shifts the 300 foot wide route so that it extends north from the existing transmission in order to facilitate the placement of the alignment along the northern ROW of CASH 86.

The route permit shall be issued in the form attached hereto, with a map showing the approved route.

Approved and adopted this \_\_\_\_\_ day of February 2012.

BY ORDER OF THE COMMISSION

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Burl W. Haar,  
Executive Secretary

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