

Direct Testimony and Schedules  
Daniel McCourtney

Before the Minnesota Public Utilities Commission

State of Minnesota

In the Matter of the Application of Minnesota Power  
for a Certificate of Need and Route Permit for the HVDC Modernization Project  
in Hermantown, Saint Louis County

OAH Docket No. 5-2500-39600  
MPUC Docket Nos. E015/CN-22-607  
and E015/TL-22-611

**PROJECT SITING AND ROUTING**

February 14, 2024

## TABLE OF CONTENTS

	Page
I. INTRODUCTION AND QUALIFICATIONS.....	1
II. MINNESOTA POWER’S PROPOSED SITING AND ROUTING .....	2
A. HVDC Modernization Project Siting Area .....	2
B. Public Participation and Outreach.....	7
C. Agency Coordination .....	8
D. Public Scoping Comments .....	9
E. Proposed Mitigation Measures for Anticipated Project Impacts to Natural and Socioeconomic Environments .....	10
III. ATC ARROWHEAD ALTERNATIVE .....	13
A. Evolution of ATC 345 kV Routing.....	13
B. Routing Concerns and Deficiencies .....	14
1. Original ATC Arrowhead Alternative .....	14
2. Current ATC Arrowhead Alternative.....	15
C. Agency Coordination .....	16
D. Public Scoping Comments .....	17
E. Natural and Socioeconomic Environmental Impacts of the ATC Arrowhead Project and Proposed Mitigation Measures.....	18
IV. CONCLUSION .....	20

1                                   **I.       INTRODUCTION AND QUALIFICATIONS**

2   **Q.     Please state your name and business address.**

3   A.     My name is Daniel McCourtney, and my business address is 30 West Superior Street,  
4           Duluth, Minnesota 55802.

6   **Q.     By whom are you employed and in what position?**

7   A.     I am employed by ALLETE, Inc., doing business as Minnesota Power (“Minnesota  
8           Power” or the “Company”) as the Manager – Strategic Environmental Initiatives.

10  **Q.     Please summarize your qualifications and experience.**

11  A.     I have acted as ALLETE’s environmental and permitting manager for large capital  
12           projects over the last 14 years. Over the past 24 years I have held various positions in  
13           resource management and environmental compliance. My formal training and  
14           experience is in resource management, regional planning, protected species  
15           management, wetland delineation and wastewater and storm water management.

17  **Q.     What is the purpose of your testimony?**

18  A.     The purpose of my testimony is to provide an overview of the routing efforts undertaken  
19           by Minnesota Power prior to filing the Certificate of Need and Route Permit Application  
20           (“Application”) for the HVDC Modernization Project (“Project”), provide information  
21           on the environmental considerations for the Proposed Route under consideration for the  
22           Project. I will also discuss feedback that Minnesota Power has received on the Project  
23           since filing the Application. I will also discuss mitigation measures to limit potential  
24           natural and socioeconomic impacts of Minnesota Power’s proposed configuration of the  
25           HVDC Modernization Project.

26  
27           I am also providing testimony regarding the Project alternative proposed by the  
28           American Transmission Company LLC, by and through its corporate manager, ATC  
29           Management Inc. (collectively “ATC”), which I will refer to as the “ATC Arrowhead  
30           Alternative.”

1  
2 **Q. Are you sponsoring any exhibits in this proceeding?**

3 A. Yes. I am sponsoring the following schedules to my Direct Testimony:

- 4 • MP Exhibit \_\_\_\_ (McCourtney), Direct Schedule 1 – Minnesota Power Route  
5 Analysis of the Minnesota Power Proposed Configuration for the HVDC  
6 Modernization Project and the ATC Arrowhead Alternative; and  
7 • MP Exhibit \_\_\_\_ (McCourtney), Direct Schedule 2 – ATC Arrowhead 345  
8 kV/230 kV Substation Wetland Mitigation Areas.  
9

10 **II. MINNESOTA POWER'S PROPOSED SITING AND ROUTING**

11 **A. HVDC Modernization Project Siting Area**

12 **Q. Please provide a general description of the Project.**

13 A. Minnesota Power provided a description of the Project's original route width and  
14 original alignment in Section 2 of the Application. To modernize the terminals of the  
15 existing high-voltage, direct-current ("HVDC") transmission line ("HVDC Line") and  
16 implement the latest Voltage Source Converter ("VSC") HVDC technology, new  
17 buildings and electrical infrastructure need to be constructed on a new site near the  
18 existing HVDC terminals. In Minnesota, to connect the new HVDC terminal to the  
19 existing AC system, the Project would require the construction of a new St. Louis  
20 County 345 kV/230 kV substation located less than one mile west of the current  
21 Arrowhead Substation. The new HVDC terminal would be connected to the St. Louis  
22 County 345 kV/230 kV Substation by less than one mile of 345 kV large high-voltage  
23 transmission line ("LHVTL")<sup>1</sup> and the new St. Louis County 345 kV/230 kV Substation  
24 would be connected to the existing Minnesota Power 230 kV/115 kV Arrowhead  
25 Substation by two parallel 230 kV LHVTLs less than one mile in length.<sup>2</sup> Additionally,

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<sup>1</sup> A LHVTL is defined at Minn. R. 7849.0010, subp. 14 as "a conductor of electrical energy as defined by Minnesota Statutes, section 216B.2421, subdivision 2, clause (2), and associated facilities necessary for normal operation of the conductor, such as insulators, towers, substations, and terminals."

<sup>2</sup> This parallel configuration was modified by Minnesota Power to respond to concerns raised by the Minnesota Department of Natural Resources ("MnDNR") and Minnesota Power requested that the EA include an analysis of this the modified configuration.

1 a short portion of the existing  $\pm 250$  kV HVDC Line in Minnesota will need to be  
2 reconfigured to terminate at the new HVDC terminal.

3  
4 In North Dakota, the Project will consist of an expansion of the separately proposed  
5 Nelson Lake 230 kV Substation to add a 345 kV/230 kV transformer and 345 kV line  
6 entrance, a new HVDC Converter Station, a new 345 kV line from the Converter Station  
7 to the Nelson Lake Substation, and a  $\pm 250$  kV HVDC Line Extension from the new  
8 Converter Station to tie into the existing  $\pm 250$  kV HVDC Line. The siting of the North  
9 Dakota HVDC terminal upgrades will be permitted by the North Dakota Public Service  
10 Commission.

11  
12 **Q. Please provide a description of the siting area for the Project.**

13 A. As discussed in the Project Application in Section 2, the Project includes the  
14 construction of approximately 40 acres of new terminal facilities, as well as the  
15 construction of LHVTLs to connect those facilities to each other and to the existing  
16 electrical grid. Minnesota Power plans to have all proposed Project facilities located on  
17 land owned by Minnesota Power in St. Louis County. The preliminary layout is  
18 conceptual only and all facilities are proposed within the Proposed Route. The term  
19 "Proposed Route" includes all LHVTL and associated facilities, in addition to all work  
20 areas needed to build and operate the proposed facilities.

21  
22 **Q. Please describe the initial analysis that Minnesota Power undertook to identify the**  
23 **Proposed Route.**

24 A. Section 5 of the Application discusses how the Company ultimately identified the  
25 Project's Proposed Route. Minnesota Power used a comprehensive siting and vetting  
26 process to identify route options for the Project. First, Minnesota Power identified a  
27 Project Study Area that would help guide the route development process. The purpose  
28 of identifying a Study Area for the Project was to establish boundaries and limits for the  
29 information-gathering process (e.g., identifying environmental and land use resources,  
30 routing constraints, and routing opportunities) and the subsequent development of a

1 proposed route for the Project. The Project Study Area was initially developed based on  
2 proximity to existing infrastructure and the proposed substation and Converter Station  
3 sizes. Further consideration was given to major physiographic features, jurisdictional  
4 boundaries, sensitive land uses and ownerships, existing utility corridors, and the  
5 availability of land for permanent ownership by Minnesota Power. In subsequent  
6 evaluations, the Study Area was reviewed and revised to best suit routing requirements  
7 and Project needs. Within the Study Area, Minnesota Power developed the Proposed  
8 Route by reviewing data, meeting with stakeholders, and performing broad  
9 environmental and engineering analysis on the Project Study Area. Minnesota Power  
10 relied on Minnesota's statutory (Minn. Stat. § 216E.03, subd. 7(b)) and rule (Minn. R.  
11 7850.4100) routing criteria for transmission lines, routing experience, engineering  
12 considerations, and stakeholder feedback to develop the Proposed Route for the Project.  
13 To minimize impacts to humans and the environment, Minnesota Power first identified  
14 routing opportunities and constraints. The Company's selection process for the  
15 Proposed Route is discussed in more detail in Section 5 of the Application.

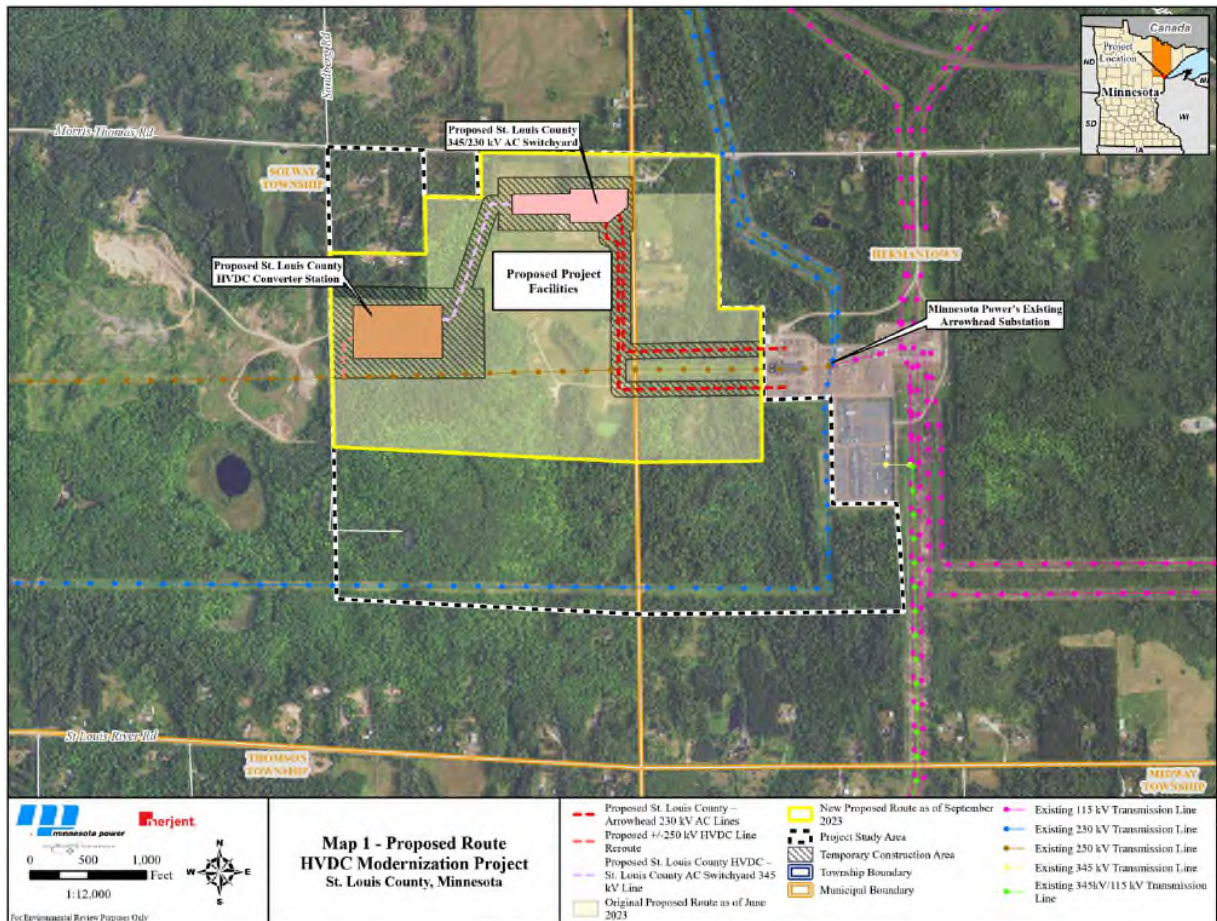
16  
17 **Q. Did Minnesota Power modify the Proposed Route after submission of the**  
18 **Application?**

19 A. Yes, after Minnesota Power submitted the Application, the Company requested  
20 additional parcels that it had acquired be included within the Project's Route Width.<sup>3</sup>  
21 Specifically, Minnesota Power had continued to evaluate purchasing additional parcels  
22 of land within the Project Area and subsequently acquired additional parcels of land  
23 located to the north of the proposed HVDC Converter Station and northeast of the  
24 proposed St. Louis County Substation. The Company proposed to include these  
25 Company-owned parcels in an expanded Route Width and requested that these  
26 additional parcels be included in the Environmental Assessment ("EA"). Expansion of  
27 the Route Width will afford the Company an additional buffer of land to use for  
28 construction and fencing as may be needed for the Project. The updated Proposed Route  
29 is shown in Figure 1.

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<sup>3</sup> Minnesota Power Scoping Comment (Sept. 13, 2023).

**Figure 1. Proposed Route**



**Q. Did Minnesota Power propose any other routes in its Application for consideration in the EA?**

**A.** No, Minnesota Power did not propose any alternative routes for the Project other than the Proposed Route. Because the Project qualifies for the alternative review process, Minnesota Power was not required to propose any alternative routes other than the Proposed Route, which is Minnesota Power's preferred route. Minnesota Power, did, however, propose an adjustment to its 230 kV transmission line alignment at West Rocky Run Creek to address concerns raised by the MnDNR in scoping comments. Minnesota Power asked that this alignment adjustment be included in the EA. This adjustment is discussed in more detail in Section II.D of my Direct Testimony.

1  
2 **Q. Did Minnesota Power include an analysis of system alternatives in its Application?**

3 A. Yes, the Company provided a comprehensive analysis of system alternatives to the  
4 Project in the Application consistent with state certificate of need application  
5 requirements. These system alternatives, which include generation and non-wire  
6 alternatives, alternative voltages, upgrade of existing facilities, alternative endpoints,  
7 double circuiting, alternative number, size, and type of conductor, alternating-current  
8 (“AC”) transmission alternatives, HVDC technology alternatives, underground  
9 alternatives, and no-build alternative are discussed in more detail in Chapter 4 of the  
10 Application. In the Application, the Company provides more explanation as to why none  
11 of these system alternatives are more reasonable and prudent than the Project.  
12

13 **Q. Please describe the Project right-of-way requirements.**

14 A. Because Minnesota Power planned to purchase and own in fee simple all the land  
15 required for Project construction and operation, Minnesota Power indicated in the  
16 Application that no “right-of-way” would be required. As described in the Application  
17 at Section 6.1.2, right-of-way widths will still be established for purposes of placement  
18 of proposed transmission lines relative to each other and to guide ongoing maintenance  
19 and adjacent land uses. Generally, lines will use the minimum right-of-way widths per  
20 voltage class. For the three different transmission line voltages that are required for the  
21 Project, the right-of-way widths will vary from 120 to 150 feet. Additional right-of-way  
22 width beyond 150 feet may be required as needed based on design requirements.  
23

24 **Q. Are there any updates to provide regarding Minnesota Power’s acquisition of land  
25 needed for the Project configuration proposed by the Company?**

26 A. Yes. At the time of filing the Application, Minnesota Power was still negotiating with  
27 landowners for some of the required Project parcels. At this time, Minnesota Power has  
28 acquired ownership of all required parcels for the Project configuration proposed by the  
29 Company in this proceeding. While some of these parcels currently include residences



1 and other structures, all of these features will be vacant and demolished by the end of  
2 2025.

3  
4 **B. Public Participation and Outreach**

5 **Q. Can you describe Minnesota Power's efforts to engage the public regarding the**  
6 **Project?**

7 A. Yes. From the outset of the Project development process, the Minnesota Power has  
8 recognized the importance of gathering data and input, and engaging members of the  
9 public, landowners, agencies, Tribes, local government units in an upfront,  
10 comprehensive outreach program. As discussed in the Application at Section 8, the  
11 Company identified stakeholders for the Project and engaged those stakeholders early  
12 and often throughout the route development process.

13  
14 As discussed in Section 8.2 of the Application, Minnesota Power hosted open houses  
15 where members of the public could come and learn about the Project and ask questions.  
16 On November 22, 2022, Minnesota Power hosted an open house at Midway Township  
17 Town Hall. Landowners located within 0.25 mile of the Project Study Area received a  
18 mailer inviting them to the open house. Staff from Minnesota Power were on hand to  
19 describe the proposed Project and answer questions from attendees. On January 11,  
20 2023 and April 19, 2023, Minnesota Power hosted open houses at the Solway Township  
21 Town Hall. Landowners within Solway Township received a mailer inviting them to the  
22 open house. Staff from Minnesota Power were on hand to describe the proposed Project  
23 and answer questions from attendees. Materials from these open houses were provided  
24 in the Application at Appendix K.

25  
26 **Q. Does the Company conduct any other types of public outreach?**

27 A. Yes. The Company also maintains a Project website that contains a link to additional  
28 information about the Project, as well as a published e-mail address and phone line. The  
29 email and phone line allow the Company to continue to be available to members of the  
30 public to answer questions about the Project.

1  
2 **Q. Has any additional public outreach on the Company's proposed HVDC**  
3 **Modernization Project configuration been conducted?**

4 A. Yes. Prior to filing the Application, Minnesota Power completed all mailed and  
5 published notices required by Minn. R. 7829.2550. After filing the Application,  
6 Minnesota Power mailed and published all notices required by Minn. R. 7829.2500,  
7 Minn. Stat. § 216E.03, subd. 4, and Minn. R. 7850.2100, subp. 5. Stakeholders, local  
8 government representatives, landowners, and residents were also invited to the EA  
9 Scoping and public informational meetings held in late August 2023.

10  
11 **C. Agency Coordination**

12 **Q. Has Minnesota Power also met with federal, tribal, state, and local officials**  
13 **regarding the Project?**

14 A. Yes. Those efforts have also been extensive and ongoing. The Application at Section 8  
15 lists the agencies that the Company met with during 2022 prior to the Application being  
16 submitted. Since that time, regular agency meetings have continued, including meetings  
17 with local and county officials, as well as state and federal agencies including USDOE,  
18 Department of Commerce, Energy Environmental Review and Analysis ("EERA"),  
19 MnDNR, U.S. Army Corps of Engineers, and the U. S. Fish and Wildlife Service, to  
20 name a few. The Company also consulted with the Fond du Lac Band of Lake Superior  
21 Chippewa in 2022.

22  
23 **Q. What additional work has the Company undertake to address questions and**  
24 **comments from the Minnesota State Historic Preservation Office ("SHPO")**  
25 **regarding route surveys?**

26 A. Minnesota Power provided all archaeological survey information to the SHPO. On  
27 December 12, 2023, the SHPO issued a letter determining that no eligible or listed  
28 properties in the National or State Registers of Historic Places were impacted by the  
29 Project configuration proposed by Minnesota Power. The letter was filed in the Project  
30 dockets on December 14, 2023.

1  
2 **D. Public Scoping Comments**

3 **Q. Did the Commission and EERA receive any public comments on the scope of the**  
4 **EA regarding the Project?**

5 A. Yes. The Commission and EERA received comments from ATC (in which it proposed  
6 the ATC Arrowhead Alternative), the MnDNR, the Solway Town Board of Supervisors,  
7 and comments from certain members of the public that reside near the Project Area. As  
8 the Commission noted in its Order Identifying Alternative Proposal for Environmental  
9 Assessment Scope, Granting Variance, and Notice and Order for Hearing, members of  
10 the public primarily commented on the Project's footprint, lighting, and noise levels.<sup>4</sup>  
11

12 **Q. What did the MnDNR include in its public comments?**

13 A. The MnDNR recommended that the EA evaluate measures to mitigate impacts to the  
14 West Rocky Run trout stream in addition to describing decommissioning portions of the  
15 Project. The MnDNR also provided comments on a public waters work permit, water  
16 appropriation, mineral resources, natural heritage review, facility lighting, dust control,  
17 and wildlife-friendly erosion control.  
18

19 **Q. With respect to MnDNR's public comments, did the Company make any**  
20 **commitments to address MnDNR's concerns?**

21 A. Yes. In its September 29, 2023 response comments,<sup>5</sup> the Company committed to (and  
22 recommended that the EA reflect such commitments):

- 23 • *Public Waters Work Permit*: The need for a public waters work permit is not  
24 anticipated. However, in the event that one is required, Minnesota Power will  
25 work with the MnDNR to obtain one for the Project.
- 26 • *Mineral Resources and Geophysical Surveys*: Such a request for a mineral  
27 survey would increase Project costs. Further, the property proposed to be used

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<sup>4</sup> ORDER IDENTIFYING ALTERNATIVE PROPOSAL FOR ENVIRONMENTAL ASSESSMENT SCOPE, GRANTING VARIANCE, AND NOTICE AND ORDER FOR HEARING at 4 (Nov. 29, 2023).

<sup>5</sup> Minnesota Power's Response to Route Alternative and Conditions Proposed to be Evaluated in the Environmental Assessment at 14-15 (Sept. 29, 2023).

1 for the Project is not state or federal lands. Minnesota Power will share its  
2 geotechnical reports with the MnDNR when those surveys are performed.

- 3 • *Natural Heritage Review*: Regarding the northern goshawk, Minnesota Power  
4 will schedule the Project's tree clearing activities to occur during the northern  
5 goshawk's inactive season.
- 6 • *Facility Lighting*: Minnesota Power will install shielded/downward facing  
7 lighting to minimize wildlife impacts due to facility lighting.
- 8 • *Dust Control*: Dust mitigation/control measures during Project construction will  
9 not include products that contain chloride.
- 10 • *Wildlife-Friendly Erosion Control*: Minnesota Power will use wildlife-friendly  
11 erosion control measures during construction and will not use plastic mesh  
12 netting when installing erosion control best management practices.

13  
14 **Q. How many route alternatives were included in the EA Scoping Decision for the**  
15 **Project?**

16 A. Two proposed routes were included for consideration in the EA. The Company's  
17 Proposed Route, as amended at West Rocky Run Creek, and the ATC Arrowhead  
18 Alternative, as amended by the Revised Scoping Decision dated December 27, 2023,  
19 which I discuss in more detail in Section III of my Direct Testimony. No other routes  
20 were included in the scope of the EA.

21  
22 **E. Proposed Mitigation Measures for Anticipated Project Impacts to Natural**  
23 **and Socioeconomic Environments**

24 **Q. Has Minnesota Power considered the affected natural and socioeconomic**  
25 **environment, the potential natural and socioeconomic environmental impacts of**  
26 **the Project, and proposed mitigation efforts to address those impacts?**

27 A. Yes. Section 7 of the Application details this information. That Section not only  
28 identifies the relevant issues and the other regulations and governmental agencies with  
29 whom Minnesota Power will coordinate its work on the Project, it also details the  
30 mitigation measures that the Company will employ to minimize the environmental

1 impacts of the Project. Those efforts include, for example, the use of best management  
2 practices (“BMPs”) throughout the construction process. Minnesota Power will own or  
3 manage through easements all lands within the Proposed Route. The Company does not  
4 believe that there will be any impacts to active agricultural lands. Therefore, Minnesota  
5 Power does not anticipate that an Agricultural Impact Mitigation Plan will be required.  
6

7 **Q. Will the Company obtain all required permits, approvals, and consultations for**  
8 **the Project?**

9 A. Yes. Minnesota Power has continued to undertake the engineering and design work for  
10 its proposed Project configuration necessary to submit its applications to other federal,  
11 state, and local agencies to ensure that such permits, licenses, or approvals will be  
12 obtained by the Company should Minnesota Power obtain an earlier delivery date for  
13 the HVDC equipment.  
14

15 **Q. Will the Project be sited and routed in a manner compatible with protecting the**  
16 **natural and socioeconomic environment?**

17 A. Yes.  
18

19 **Q. Has the Company identified any additional mitigation measures to address the**  
20 **MnDNR concerns regarding the proposed crossing of the West Rocky Run trout**  
21 **stream just west of Minnesota Power’s 230 kV/115 kV Arrowhead Substation?**

22 A. Yes. Minnesota Power has worked to address concerns from the MnDNR regarding the  
23 West Rocky Run Creek crossings and residents regarding potential noise impacts of the  
24 HVDC converter stations.  
25

26 **Q. What mitigation measures is the Company proposing related to its proposed**  
27 **crossing of West Rocky Run Creek?**

28 A. In the Application, Minnesota Power initially proposed to repurpose the existing HVDC  
29 Line crossing of the West Rocky Run trout stream and expand the right-of-way in that  
30 location to include crossings of the 230 kV transmission line between the St. Louis

1 County Substation and Minnesota Power's 230 kV/115 kV Arrowhead Substation on  
2 separate structures. In comments, the MnDNR expressed concern for this widened right-  
3 of-way and two structure crossings at the West Rocky Run Creek, which is a trout  
4 stream. Based on this feedback, Minnesota Power continued its evaluation of this  
5 crossing for the 230 kV transmission line (and removal of the existing HVDC Line at  
6 this location). In response to MnDNR concerns, Minnesota Power is proposing to  
7 double-circuit its 230 kV between the proposed 345 kV/230 kV St. Louis County  
8 Substation and Minnesota Power's 230 kV/115 kV Arrowhead Substation to reduce the  
9 crossings of the West Rocky Run Creek from two to one (as shown Attachment A-1 to  
10 Schedule 1 to my Direct Testimony). This proposed configuration would allow for  
11 Minnesota Power to maintain one crossing of the West Rocky Run Creek, as there exists  
12 one today, and avoid the need to expand the right-of-way from 120 feet to 260 feet.  
13 Instead, the final right-of-way at West Rocky Run Creek would be 130 feet to  
14 accommodate the double-circuit 230 kV transmission line. While the centerline of this  
15 right-of-way would be located north of the existing HVDC Line right-of-way, this is  
16 necessary to ensure that the existing HVDC Line is not taken out of service until the  
17 new infrastructure is ready to be placed in service. Once the new 230 kV line is  
18 energized, the HVDC Line would be removed from this crossing and the streambanks  
19 would be allowed to revegetate.

20  
21 Where practicable, a 75-foot vegetated buffer will be maintained adjacent to West  
22 Rocky Run Creek, Impacts to the streambanks will largely be avoided because the  
23 proposed 230 kV lines will span the creek.

24  
25 **Q. What actions is Minnesota Power taking to address the concerns raised by**  
26 **residents regarding noise from the HVDC converter stations?**

27 **A.** Minnesota Power has commissioned a study related to noise anticipated from the HVDC  
28 converter station equipment based on the current equipment design. This study is still  
29 underway and will be provided by Minnesota Power with Rebuttal Testimony along  
30 with any mitigation measures, if necessary.

1  
2 **III. ATC ARROWHEAD ALTERNATIVE**

3 **A. Evolution of ATC 345 kV Routing**

4 **Q. What is the Arrowhead 345 kV/230 kV Substation?**

5 A. ATC's Arrowhead 345 kV/230 kV Substation is located adjacent to, and south of,  
6 Minnesota Power's 230 kV/115 kV Arrowhead Substation. Minnesota Power's  
7 Arrowhead 230 kV/115 kV Substation, where the existing  $\pm 250$  kV HVDC Line  
8 terminates, is converted to AC, and interconnects to Minnesota Power's 230 kV  
9 transmission system to deliver power directly to Minnesota Power's customers.  
10 Minnesota Power's 230 kV/115 kV Substation predates the ATC Arrowhead 345  
11 kV/230 kV Substation by many decades.  
12

13 **Q. Why was ATC's Arrowhead 345 kV/230 kV Substation initially constructed?**

14 A. The ATC Arrowhead 345 kV/230 kV Substation was initially constructed as part of the  
15 Arrowhead – Weston Project in the mid-2000s, which includes the Arrowhead – Weston  
16 345 kV transmission line that runs 12 miles from ATC's 345 kV/230 kV Arrowhead  
17 Substation near Duluth to the Minnesota-Wisconsin border, and then continues  
18 southeast approximately 208 miles through Wisconsin to the Weston Substation near  
19 Wausau, Wisconsin. When the Arrowhead – Weston Project was being developed,  
20 Minnesota Power planned to undertake both the construction and initial ownership of  
21 the Minnesota portion of the Arrowhead-Weston Project, including the Arrowhead 345  
22 kV/230 kV Substation, and planned to own a portion of the 345 kV line in Wisconsin.  
23 Minnesota Power and ATC later determined that ATC should also own the Minnesota  
24 portion of the Arrowhead – Weston Project, including the Arrowhead 345 kV/230 kV  
25 Substation endpoint, which was approved by the Commission in 2005.<sup>6</sup>  
26

27 Company witness Christian Winter provides additional relevant background about  
28 ATC's Arrowhead 345 kV/230 kV Substation in his Direct Testimony as well as further

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<sup>6</sup> *In the Matter of Minnesota Power Company's Petition for Review of an Agreement Between Minnesota Power and American Transmission Company*, Docket No. E015/PA-04-2020, ORDER (Dec. 2, 2005).

1 support on why Minnesota Power's HVDC Line should continue to connect to the  
2 Minnesota Power transmission system at 230 kV and not at the Arrowhead 345 kV/230  
3 kV Substation, as proposed by ATC.  
4

5 **B. Routing Concerns and Deficiencies**

6 1. Original ATC Arrowhead Alternative

7 **Q. Did ATC submit scoping comments about the Project?**

8 A. Yes, ATC submitted comments during the scoping period and proposed the ATC  
9 Arrowhead Alternative to the Project, which would require changing the  
10 interconnection of Minnesota Power's HVDC System to 345 kV instead of the 230 kV  
11 interconnection that has been in place for many years and was proposed to be continued  
12 as part of Minnesota Power's proposed Project.  
13

14 **Q. What is the ATC Arrowhead Alternative?**

15 A. At a high level, the ATC Arrowhead Alternative would connect Minnesota Power's  
16 proposed HVDC terminal directly to ATC's Arrowhead 345 kV/230 kV Substation,  
17 rather than constructing the new St. Louis County 354 kV/230 kV Substation as part of  
18 the Project and then interconnecting the St. Louis County 345 kV/230 kV Substation to  
19 Minnesota Power's existing 230 kV/115 kV Arrowhead Substation, where the HVDC  
20 Line currently terminates.  
21

22 **Q. Please describe the ATC Arrowhead Alternative in more detail.**

23 A. According to ATC, the ATC Arrowhead Alternative is as follows:

24 This alternative would essentially involve interconnecting the new  
25 HVDC terminal directly to ATC's existing Arrowhead 345/230-kV  
26 Substation through two approximately one-mile 345-kV transmission  
27 lines. To minimize impacts, the new 345 kV transmission lines could be  
28 constructed in a double-circuit configuration. These lines would re-use  
29 a portion of the [right-of-way] currently used for Minnesota Power's  
30 250-kV Square Butte transmission line that is located between the new  
31 HVDC terminal and ATC's Arrowhead 345/230 kV Substation, as the



1 Applicant states that this segment of the Square Butte line will be  
2 removed/decommissioned as part of the Project.<sup>7</sup>  
3

4 **Q. To your knowledge, has ATC acquired the necessary land rights for the ATC**  
5 **Arrowhead Alternative?**

6 A. In response to Minnesota Power Information Request No. (“MP IR”) 012, attached to  
7 the Direct Testimony of Mr. Winter as Schedule 37, ATC stated that it “does not need  
8 to acquire additional land rights for the Arrowhead Substation Alternative.” However,  
9 this is because Minnesota Power owns all parcels in fee simple required for the Project.  
10 As part of the ATC Arrowhead Alternative, Minnesota Power would also own the  
11 double-circuit 345 kV transmission line that would connect the new HVDC converter  
12 station and terminal to ATC’s Arrowhead 345 kV/230 kV Substation.  
13

14 2. Current ATC Arrowhead Alternative

15 **Q. Did ATC make any modifications to the ATC Arrowhead Alternative after it was**  
16 **initially proposed during the scoping comment period and presented to the**  
17 **Commission for consideration in the Draft Scoping Decision?**

18 A. Yes. ATC provided the proposed modification to EERA via a “personal  
19 communication,” which EERA stated was an “email from American Transmission  
20 Company to EERA staff, December 7, 2023.”<sup>8</sup>  
21

22 **Q. Please describe ATC’s modification to the ATC Arrowhead Alternative.**

23 A. ATC modified the proposed alignment of the double-circuit 345 kV transmission line  
24 that would connect the new HVDC terminal with the ATC Arrowhead 345 kV/230 kV  
25 Substation so that it would cross the West Rocky Run trout stream only once, rather  
26 than three times as initially proposed for the ATC Arrowhead Alternative.  
27

---

<sup>7</sup> ATC Comments at 6 (Sept. 15, 2023).

<sup>8</sup> Environmental Assessment Revised Scoping Decision, n.4 (Dec. 27, 2023).

1 **Q. Will the Commission and EERA be considering ATC's proposed re-alignment to**  
2 **the ATC Arrowhead Alternative in the EA?**

3 A. Yes, EERA stated that it would consider ATC's proposed re-alignment in its Revised  
4 Scoping Decision.

5  
6 **C. Agency Coordination**

7 **Q. Has ATC conducted any outreach to federal, state, or local governments regarding**  
8 **the ATC Arrowhead Alternative?**

9 A. Not to my knowledge. In response to MP IR 012, attached to the Direct Testimony of  
10 Company witness Mr. Winter, ATC indicated that it has only completed desktop review  
11 of its proposed ATC Arrowhead Alternative. While the ATC Arrowhead Alternative's  
12 345 kV transmission line is within the overall study area that Minnesota Power has  
13 identified, site-specific impacts have not been evaluated for the proposed 345 kV  
14 transmission line route. In response to MP IR 012, ATC acknowledges that if its  
15 alternative is selected by the Commission, ATC "would need to determine what if any  
16 additional analyses [or studies] are necessary" for the proposed configuration.

17  
18 **Q. Has ATC conducted any public outreach about the ATC Arrowhead Alternative?**

19 A. Minnesota Power has not been made aware of any independent outreach by ATC to  
20 landowners or residents in the area regarding its proposed high-voltage transmission  
21 line alignment (either the September alignment or the EA alignment).

22  
23 **Q. Is it appropriate for ATC to rely on Minnesota Power's outreach efforts for the**  
24 **Project?**

25 A. No. ATC's proposed high-voltage transmission line would be located closer to local  
26 residences and is outside of the route that has been evaluated by Minnesota Power and  
27 included on the maps provided to stakeholders, landowners, and residents during  
28 Minnesota Power's pre-application outreach as well as its post-application and scoping  
29 meeting notices.

1 **Q. Does Minnesota Power have any concerns with the fact that ATC has not**  
2 **conducted any outreach with federal, state, or local governments about the ATC**  
3 **Arrowhead Alternative?**

4 A. Yes. Early outreach with federal, state, and local governments about proposed  
5 construction activities for transmission projects is a critical part of ensuring that any  
6 necessary permits from these agencies can be issued in a timely manner after the  
7 Commission issues a Certificate of Need and Route Permit. Additionally, working with  
8 these agencies in parallel to the Commission process saves additional time during the  
9 permitting and construction planning phases. At this time, ATC has not preemptively  
10 undertaken these activities for the ATC Arrowhead Alternative that is proposed in this  
11 proceeding. Therefore, any agency permitting, approval, or licensing activities for the  
12 ATC Arrowhead Alternative would have to commence after the Commission issues a  
13 Certificate of Need and Route Permit as they have not been occurring in parallel with  
14 the Commission process.

15  
16 Company witness, Daniel W. Gunderson, discusses concerns about overall timelines for  
17 the ATC Arrowhead Alternative in his Direct Testimony.

18  
19 **D. Public Scoping Comments**

20 **Q. What public comments were submitted during the scoping process about the ATC**  
21 **Arrowhead Alternative?**

22 A. While there were no comments submitted in response to the ATC Arrowhead  
23 Alternative, as it was proposed after the public scoping meetings, there were comments  
24 from landowners near the ATC Arrowhead Alternative, generally, about proximity to  
25 transmission infrastructure. The ATC Arrowhead Alternative's 345 kV transmission  
26 line, as modified by ATC to include in the EA, is located in closer proximity to residence  
27 on the south side of the Route Width. During the Scoping Meetings, these residents  
28 expressed concern for the Project with the infrastructure all located further away from  
29 their residences when considering Minnesota Power's configuration (as ATC had not  
30 yet presented its proposal at that time).

1  
2 **Q. Was the public notified of, and permitted to comment on, ATC's proposed re-**  
3 **alignment of the ATC Arrowhead Alternative?**

4 A. The public was notified by letter of the original Scoping Decision issued by EERA that  
5 included the original route alignment for the ATC Arrowhead Alternative, with the 345  
6 kV transmission line located along the existing  $\pm$  250 kV HVDC Line right-of-way.  
7 Based on information in the record, it does not appear that these residents, landowners,  
8 or local government officials have been notified by either ATC or any agency about  
9 ATC's modified route alignment reflected in the Revised Scoping Decision that was  
10 issued by EERA. The alignment for ATC's proposed 345 kV configuration has changed  
11 between the original Scoping Decision and the Revised Scoping Decision, in that it now  
12 places the 345 kV transmission line ATC is proposing closer to the residences and  
13 parcels located south of the Proposed Route.  
14

15 **E. Natural and Socioeconomic Environmental Impacts of the ATC Arrowhead**  
16 **Project and Proposed Mitigation Measures**

17 **Q. Has ATC provided the anticipated impacts to the natural and socioeconomic**  
18 **environment of the ATC Arrowhead Alternative?**

19 A. No. It does not appear that ATC has completed an independent analysis of the potential  
20 natural environment or socioeconomic impacts of the ATC Arrowhead Alternative  
21 included in the Revised Scoping Decision.  
22

23 **Q. Has Minnesota Power evaluated the anticipated impacts to the natural and**  
24 **socioeconomic environment of the ATC Arrowhead Alternative?**

25 A. Yes. Minnesota Power prepared an analysis of the ATC Arrowhead Alternative  
26 included in the Revised Scoping Decision and Minnesota Power's HVDC  
27 Modernization Project configuration with the modified West Rocky Run Creek double-  
28 circuit crossing. This impact analysis is attached to my Direct Testimony as Schedule  
29 1. It is important to note that, as discussed in more detail in the Direct Testimony of  
30 Company witness, Mr. Winter, while ATC's Arrowhead Alternative would not require

1 construction of the St. Louis County 345 kV/230 kV Substation at this time, that  
2 substation would need to be constructed in the future with permanent impacts to land.  
3 These permanent impacts are not included in the analysis of the ATC Arrowhead  
4 Alternative in Schedule 1.

5  
6 **Q. Are there any unique concerns about impacts to wetlands near ATC's Arrowhead**  
7 **345 kV/230 kV Substation?**

8 A. Yes. In its September 15, 2023 Comments, ATC identified that its ATC Arrowhead  
9 Alternative would support future expansion of the ATC 345 kV/230 kV Arrowhead  
10 Substation, including potential expansion of its substation and reconfigured/new 345  
11 kV transmission lines to the east. There are wetlands located to the east of ATC's 345  
12 kV/230 kV Arrowhead Substation that were mitigated in the 2000s and carry deed  
13 restrictions on them which prevent development. A map of these wetland is attached to  
14 my Direct Testimony as Schedule 2.

15  
16 **Q. Has ATC provided any mitigation measures to address potential impacts to the**  
17 **natural and socioeconomic environment due to the ATC Alternative?**

18 A. Minnesota Power is not aware of any mitigation measures that have been proposed by  
19 ATC for its ATC Arrowhead Alternative. Minnesota Power reserves the right to provide  
20 more analysis of mitigation measures after the EA has been provided for review.

21  
22 **Q. Given the absence of agency collaboration on the ATC Arrowhead Alternative by**  
23 **ATC, do you have any estimate on the amount of time this would add to Project**  
24 **schedule if the Commission orders Minnesota Power to construct the ATC**  
25 **Arrowhead Alternative?**

26 A. The absence of agency collaboration or public outreach regarding the ATC Arrowhead  
27 Alternative injects significant risk to the overall Project schedule, as I previously  
28 discussed. At this time, it is not known what the exact impact to the schedule would be.  
29 However, based on the progress Minnesota Power has made with the agencies on a  
30 variety of questions and pre-permitting activities, permitting for the ATC Arrowhead

1 Alternative will take more time than Minnesota Power's proposed HVDC  
2 Modernization Project configuration.

3  
4 **Q. Why will permitting for the ATC Arrowhead Alternative take more time than**  
5 **Minnesota Power's proposed HVDC Modernization Project configuration?**

6 A. As I discussed earlier in my Direct Testimony, Minnesota Power has been working on  
7 pre-permitting activities with agencies for its proposed HVDC Modernization Project  
8 configuration for many months – in some cases even before Minnesota Power filed its  
9 Application. The requisite design and engineering activities that are necessary to obtain  
10 federal, state, and local permits, approvals, or licenses for the ATC Arrowhead  
11 Alternative have not commenced and all of those activities will take several additional  
12 months if the ATC Arrowhead Alternative is ordered to be constructed by the  
13 Commission.

14  
15 Company witness, Mr. Gunderson, further discusses concerns about this schedule  
16 uncertainty in his Direct Testimony.

17  
18 **IV. CONCLUSION**

19 **Q. Does this complete your Direct Testimony?**

20 A. Yes.

## MINNESOTA POWER'S ROUTE ALTERNATIVE ANALYSIS

The following table is Minnesota Power's ( "MP") Land Impact Analysis for MP's Proposed HVDC Project included in Minnesota Power's Certificate of Need and Route Permit Application ("Application") filed on June 1, 2023 ("MP HVDC Project as proposed in Application"), MP's updated Proposed Route filed on September 13, 2023 ("MP HVDC Project"), and ATC's Arrowhead Alternative provided December 7, 2023 to the Department of Commerce, Energy Environmental Review and Analysis ("DOC EERA") ("ATC Arrowhead Alternative"). A visual depiction of each of the alternatives is attached.

RESOURCE	MP HVDC PROJECT AS PROPOSED IN APPLICATION	MP HVDC PROJECT <sup>1</sup>	ATC ARROWHEAD ALTERNATIVE <sup>2</sup>
Total Area in Acres	31.8	28.7	25.14
Land Cover, Acres within ROW by Type	See Separate Table	See Separate Table	See Separate Table
Delineated Wetlands within ROW, in Acres	5.9	5.4	4.93
Delineated Waterbodies, Number / Acres within ROW	1 / 0.13	1 / 0.07	2 / 0.05
Farmland of Statewide Importance	8.6 acres	6.7 acres	5.3 acres
Not Prime Farmland	23.2 acres	22.0 acres	19.8 acres
PWI Minnesota Public Waters – West Rocky Run	2 crossings	1 crossing	1 crossing
Minnesota Trout Streams – West Rocky Run	2 crossings	1 crossing	1 crossing
Impaired Streams – West Rocky Run	2 crossings	1 crossing	1 crossing



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## MINNESOTA POWER'S ROUTE ALTERNATIVE ANALYSIS

RESOURCE	MP HVDC PROJECT AS PROPOSED IN APPLICATION	MP HVDC PROJECT <sup>1</sup>	ATC ARROWHEAD ALTERNATIVE <sup>2</sup>
Water Wells - Domestic	0	0	0
Floodplains – 100-Year Floodplain, West Rocky Run	0.83 acre	0.61 acres	0.84 acres
Parcels / Landowners	8 parcels / 1 landowner (Minnesota Power)	8 parcels / 1 landowner (Minnesota Power)	8 parcels / 1 landowner (Minnesota Power)

<sup>1</sup> Minnesota Power's Route Alternative filed on 9/13/23 with proposed double-circuit 230 kV.

<sup>2</sup> ATC's Proposed Route Alternative for its Arrowhead Alternative as of 12/7/2023 as provided by Minnesota DOC EERA.

LAND COVER, ACRES WITHIN ROW BY TYPE	MP HVDC AS PROPOSED IN APPLICATION	MP HVDC PROJECT <sup>1</sup>	ATC ARROWHEAD ALTERNATIVE <sup>2</sup>
Agricultural/Cropland	7.55	6.65	3.10
Forest/Shrub	18.18	16.64	18.19
Grassland	1.07	0.92	0
Developed Land	1.31	1.54	0
Wetland (NLCD wetlands, not Delineated Wetlands)	3.67	2.98	3.86
Total	31.8	28.7	25.1

<sup>1</sup> Minnesota Power's Route Alternative filed on 9/13/2023 with proposed double-circuit 230 kV.

<sup>2</sup> ATC's Proposed Route Alternative for its Arrowhead Alternative as of 12/7/2023 as provided by Minnesota DOC-EERA.

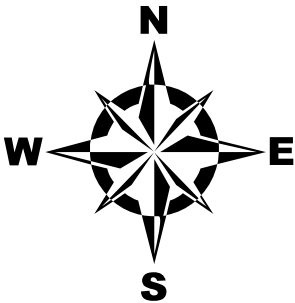


# Minnesota Power Route Alternative Analysis: All Alternatives

2/13/24

## Legend

- ATC 345 kV Alternative 12/7/23
- MP 230 kV Alternative 9/13/23
- MP Application Preliminary 230 kV Alignment
- MP Application Preliminary 345 kV Alignment
- MP Application Preliminary 250 KV Alignment
- MP Application St. Louis County Sub
- MP Application HVDC Converter Yard



0.25

Miles



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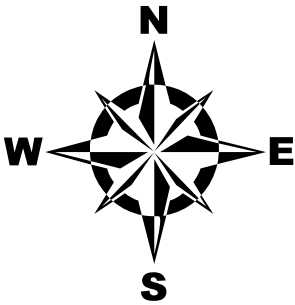


# Minnesota Power Route Alternative Analysis: MP HVDC Project as Proposed in Application

2/13/24

### Legend

- MP Application Preliminary 230 kV Alignment
- MP Application Preliminary 345 kV Alignment
- MP Application Preliminary 250 KV Alignment
- MP Application St. Louis County Sub
- MP Application HVDC Converter Yard



0.25

Miles



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OAH Docket No. 5-2500-39600  
MPUC Docket Nos. E015/CN-22-607  
and E015/TL-22-611  
MP Exhibit \_\_\_\_ (McCourtney)  
Direct Schedule 1  
Page 4 of 6

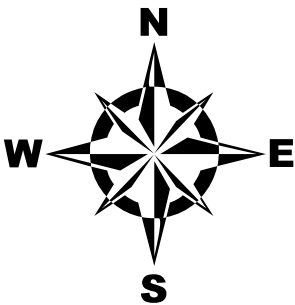


# Minnesota Power Route Alternative Analysis: MP HVDC Project

2/13/24

### Legend

- MP 230 kV Alternative 9/13/23
- MP Application Preliminary 345 kV Alignment
- MP Application Preliminary 250 KV Alignment
- MP Application St. Louis County Sub
- MP Application HVDC Converter Yard



0.25

Miles



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OAH Docket No. 5-2500-39600  
MPUC Docket Nos. E015/CN-22-607  
and E015/TL-22-611  
MP Exhibit \_\_\_\_ (McCourtney)  
Direct Schedule 1  
Page 5 of 6

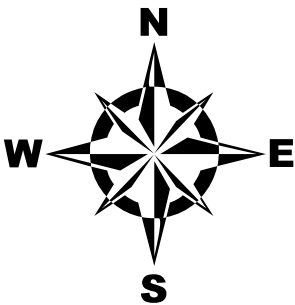


# Minnesota Power Route Alternative Analysis: ATC Arrowhead Alternative

2/13/24

### Legend

- ATC 345 kV Alternative 12/7/23
- MP Application Preliminary 250 KV Alignment
- MP Application HVDC Converter Yard



0.25

Miles



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OAH Docket No. 5-2500-39600  
MPUC Docket Nos. E015/CN-22-607  
and E015/TL-22-611  
MP Exhibit \_\_\_\_ (McCourtney)  
Direct Schedule 1  
Page 6 of 6

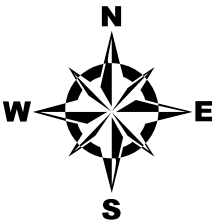


# Arrowhead Existing Wetland Mitigation Areas

1/29/24

### Legend

- Existing Transmission Line Info
- Arrowhead Sub Existing Wetland Mitigation



0.15 Miles



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OAH Docket No. 5-2500-39600  
MPUC Docket Nos. E015/CN-22-607  
and E015/TL-22-611  
MP Exhibit \_\_\_\_ (McCourtney)  
Direct Schedule 2  
Page 1 of 1

