2.0 INTRODUCTION

The Nashwauk Public Utilities Commission (the Applicant) and Minnesota Power (co-applicant) are seeking a Route Permit from the Minnesota Public Utilities Commission (PUC) to construct four 230 kV transmission lines and two 230 kV substations (the Project). The Nashwauk Public Utilities Commission (NPUC) is a municipal utility located in Nashwauk, Minnesota. Minnesota Power (MP) is a public utility headquartered in Duluth, Minnesota.

The purpose of the Project is to supply reliable electric power to a single source entity - Essar Steel Minnesota (ESM). ESM has obtained state approvals to reactivate the former Butler Taconite mine by developing new facilities, including a taconite pellet plant and steel production plant (Minnesota Steel Environmental Impact Statement and Record of Decision, August 10, 2007). The Essar taconite pellet facility is expected to commence initial operation by early 2011, with initial steel plant operation planned for early 2014, at which time the projected demand would be approximately 300 megawatts. Although not committed to, the ESM site permit allows for a second steel slab melt line, which would increase the ESM facilities' total electric power requirements to approximately 500-550 megawatts if constructed and at full operation.

2.1 Description of Proposed Action

The Shannon, Boswell, and Blackberry Substations are the proposed power source connections for the Project. The four routes would require approximately 37 miles of new transmission lines (See study area Map 2-1 and route Map 2-2).

2.1.1 Study Area 1 – Shannon end of 94 Line to Essar Steel Plant Substation

Study Area 1 is bordered by MP's 230 kV Boswell to Shannon 94 Line (94 Line) to the north and the Steel property to the south. The east boundary is two miles east of Minnesota Trunk Highway (TH) 65 and the west boundary is two miles west of TH 65. The proposed transmission line would cross over rugged northern Minnesota forestland. TH 65 and a number of county and secondary roads cross the study area; no other major linear infrastructure (transmission lines, pipelines or railroads) are present. The transmission line routes within this study area would be approximately eight miles long.

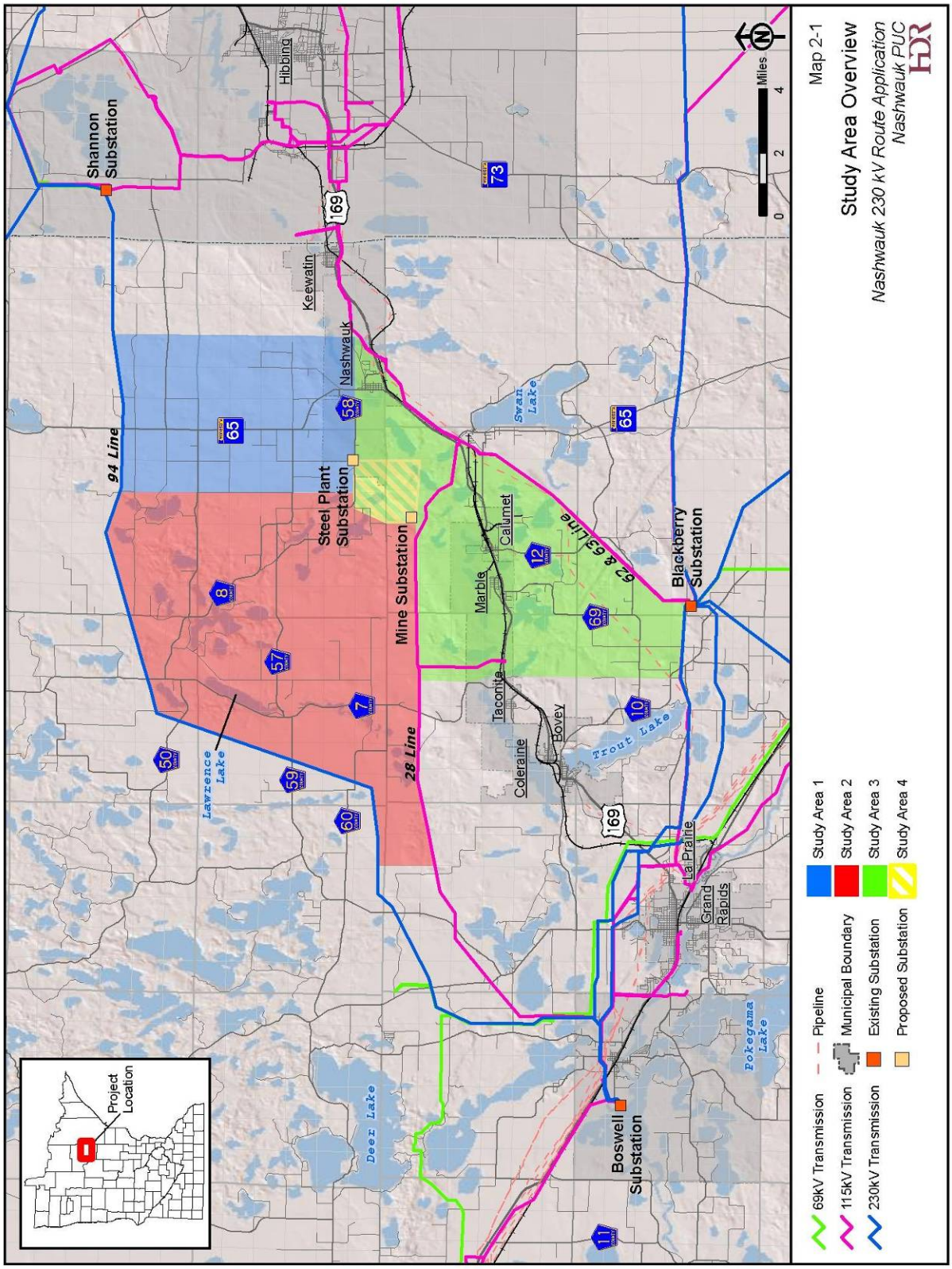
2.1.2 Study Area 2 – Boswell end of 94 Line to Essar Mine Substation

Study Area 2 is bordered by the 94 Line on the north and west. The southern border is MP's 115 kV Boswell to Nashwauk 28 Line (28 Line) and the eastern border is the ESM property. The proposed transmission line would cross over rugged northern Minnesota forestland. There are a number of county and secondary roads within the study area. The 28 Line is the only other infrastructure right-of-way present. The transmission line routes within this study area would be approximately 10 miles long.

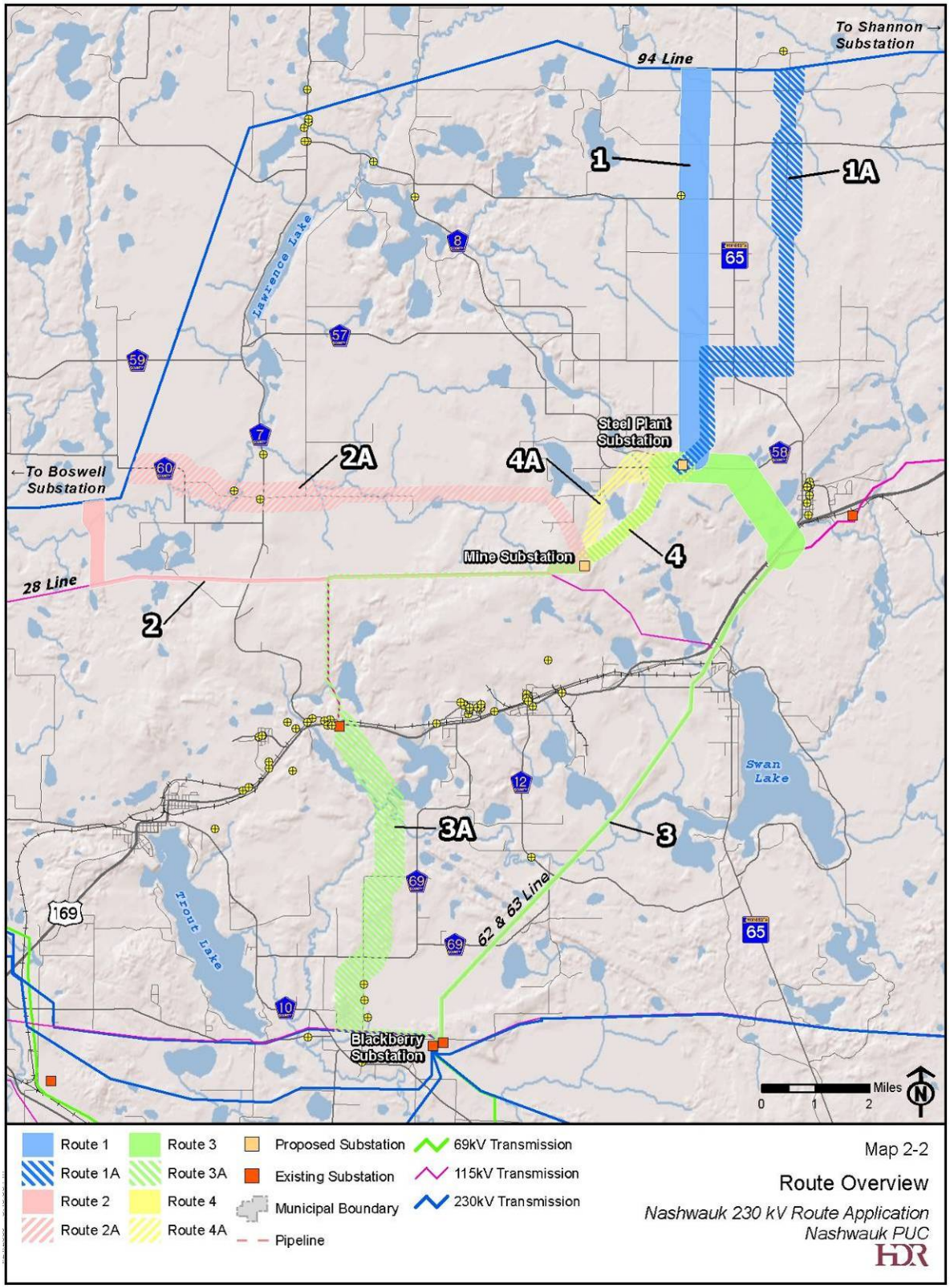
2.1.3 Study Area 3 – Blackberry Substation to Essar Steel Plant Substation

Study Area 3 is bordered by the City of Nashwauk on the northeast, 28 Line on the north and CSAH 10 to the west. The Blackberry Substation is located at the southern border and MP's115 kV 62 and 63 Lines are located on the eastern border. The proposed transmission line would cross over rugged northern Minnesota forestland. U.S. Highway 169 travels east/west within the study area. There are a number of county and secondary roads, transmission lines, and gas pipelines within this study area. The transmission line routes within this study area would be approximately 15-18 miles long.

Map 2-1: Study Area Overview



Map 2-2: Route Overview



2.1.4 Study Area 4 – Essar Mine Substation to Essar Steel Plant Substation

Study Area 4 is located entirely within ESM property and would connect the two new substations. The ESM plant utility right-of-way, including a new railroad and several secondary roads are located within the study area. The transmission line routes within this study area would be approximately three miles long.

2.1.5 Essar Mine Substation

The Essar Mine Substation would occupy approximately 1.4 acres of land. This substation would be on the western side of the ESM property. The substation would be connected to the 94 Line, via Route 2 or 2A, and would also be connected to the Essar Steel Plant Substation via Route 4 or 4A.

2.1.6 Essar Steel Plant Substation

The Essar Steel Plant Substation would occupy 4.5 acres of land. This substation would be located on the northern portion of the ESM property. The substation would be connected to the Shannon end of the 94 Line, the Blackberry Substation, and the Essar Mine Substation.

2.1.7 Transmission Line Design

Final transmission line engineering and design have not been completed; however, the proposed design is two-pole H-frame structures for the majority of the Project (Drawing 4-1, page 4-2). These are typical structures used for a 230 kV transmission line located on wooded, rugged topography. They are also suitable for areas requiring longer spans to avoid or minimize the placement of structures in wetlands or waterways. Each H-frame structure would range in height from 60 to 90 feet, and would be placed 600 to 1,000 feet apart. The right-of-way width would be 130 feet.

Single Pole Single Circuit and Single Pole Double Circuit structures may be used in certain areas. The height of single-pole single-circuit structures would range from approximately 70 to 100 feet, with the span between structures approximately 400 to 800 feet apart. Double-circuit single pole structures would range in height from approximately 95 to 115 feet with the span between structures approximately 350 to 700 feet.

2.1.8 Route Width

The proposed route widths would vary throughout each of the study areas depending on existing infrastructure. Generally, the route width is 500 feet wide where adjacent infrastructure includes existing transmission line rights-of-way. In locations where there is no existing infrastructure the route width would be either 1,500 feet or 3,500 feet. The route widths are discussed in further detail in Sections 3.4.1-3.4.4.

2.2 Certificate of Need Exemption

Minn. Stat. § 216B. 243, subd. 2 states that no Large Energy Facility shall be sited or constructed in Minnesota without issuance of a certificate of need by the PUC. This Project meets the definition of a Large Energy Facility under Minn. Stat. § 216B.2421, subd. 2(2). However, this Project meets the Minn. Stat. § 216B.243, subd. 8(2) exemption criteria for construction of a high voltage transmission line that serves the demand of a single customer at a single location. The single customer for this proposed Project would be ESM. All four proposed 230 kV transmission lines would terminate at the two proposed 230 kV substations located at the ESM site. Therefore, the only PUC approval is the Route Permit.

2.3 Completeness Check

The contents required for an application with the PUC under the Full Permitting Process are outlined in Minn. Rules 7849.5220. The PUC submittal requirements are listed in Table 2-1, with cross-references identifying where the information can be found in this application.

Table 2-1: Completeness Checklist

Authority	Required Information	Where
7849.5220, Subp. 2	**Route Permit for HVTL.** An application for a route permit for a high voltage transmission line shall contain the following information:	
A.	a statement of proposed ownership of the facility at the time of filing the application and after commercial operation	3.1
B.	the precise name of any person or organization to be initially named as permittee or permittees and the name of any other person to whom the permit may be transferred if transfer of the permit is contemplated	3.2
C.	at least two proposed routes for the proposed high voltage transmission line and identification of the applicant's preferred route and the reasons for the preference	6.7, 7.7, 8.7,9.7
D.	a description of the proposed high voltage transmission line and all associated facilities including the size and type of the high voltage transmission line	3.5
E.	the environmental information required under 7849.5220, Subp. 3	6.0, 7.0, 8.0,9.0
F.	identification of land uses and environmental conditions along the proposed routes	6.0, 7.0, 8.0,9.0
G.	the names of each owner whose property is within any of the proposed routes for the high voltage transmission line	Appendix J
H.	United States Geological Survey topographical maps or other maps acceptable to the chair showing the entire length of the high voltage transmission line on all proposed routes	Figure 1
I.	identification of existing utility and public rights-of-way along or parallel to the proposed routes that have the potential to share the right-of-way with the proposed line	Table 4-2
J.	the engineering and operational design concepts for the proposed high voltage transmission line, including information on the electric and magnetic fields of the transmission line	4.1
K.	cost analysis of each route, including the costs of constructing, operating, and maintaining the high voltage transmission line that are dependent on design and route	3.6
L.	a description of possible design options to accommodate expansion of the high voltage transmission line in the future	4.1.2
M.	the procedures and practices proposed for the acquisition and restoration of the right-of-way, construction, and maintenance of the high voltage transmission line	4.2
N.	a listing and brief description of federal, state, and local permits that may be required for the proposed high voltage transmission line	11.3

Authority	Required Information	Where
O.	a copy of the Certificate of Need or the certified HVTL list containing the proposed high voltage transmission line or documentation that an application for a Certificate of Need has been submitted or is not required	2.2
7849.5220, Subp. 3		
A.	a description of the environmental setting for each site or route	6.0, 7.0, 8.0,9.0
B.	a description of the effects of construction and operation of the facility on human settlement, including, but not limited to, public health and safety, displacement, noise, aesthetics, socioeconomic impacts, cultural values, recreation, and public services	6.2, 7.2, 8.2, 9.2
C.	a description of the effects of the facility on land-based economies, including, but not limited to, agriculture, forestry, tourism, and mining	6.3, 7.3, 8.3 9.3
D.	a description of the effects of the facility on archaeological and historic resources	6.4, 7.4, 8.4, 9.4
E.	a description of the effects of the facility on the natural environment, including effects on air and water quality resources and flora and fauna	6.5, 7.5, 8.5, 9.5
F.	a description of the effects of the facility on rare and unique natural resources	6.6, 7.6, 8.6, 9.6
G.	identification of human and natural environmental effects that cannot be avoided if the facility is approved at a specific site or route	6.7, 7.7, 8.7, 9.7
H.	a description of measures that might be implemented to mitigate the potential human and environmental impacts identified in items A to G and the estimated costs of such mitigative measures	6.0, 7.0, 8.0, 9.0
7849.5240	Project Notice.	
Subp. 2	Notification to persons on general list, to local officials, and to property owners	Appendix J
7849.5910	**Factors Considered.** In determining whether to issue a permit for a large electric power generating plant or a high voltage transmission line, the commission shall consider the following:	
A.	effects on human settlement, including, but not limited to, displacement, noise, aesthetics, cultural values, recreation, and public services	6.2, 7.2, 8.2, 9.2
B.	effects on public health and safety	6.2.9, 7.2.9, 8.2.9, 9.2.9, 5.1
C.	effects on land-based economies, including, but not limited to, agriculture, forestry, tourism, and mining	6.2.6, 7.2.6, 8.2.6, 9.2.6
D.	effects on archaeological and historic resources	6.4, 7.4, 8.4, 9.4
E.	effects on the natural environment, including effects on air and water quality resources and flora and fauna	6.5, 7.5, 8.5, 9.5
F.	effects on rare and unique natural resources	6.6, 7.6, 8.6, 9.6
G.	application of design options that maximize energy efficiencies, mitigate adverse environmental effects, and could accommodate expansion of transmission or generating capacity	6.7, 7.7, 8.7, 9.7
H.	use or paralleling of existing rights-of-way, survey lines, natural division lines, and agricultural field boundaries	Table 4-2

Authority	Required Information	Where
I.	use of existing large electric power generating plant sites	N/A
J.	use of existing transportation, pipeline, and electrical transmission systems or rights-of-way	Table 4-2
K.	electrical system reliability	4.1.2
L.	costs of constructing, operating, and maintaining the facility which are dependent on design and route	3.6
M.	adverse human and natural environmental effects which cannot be avoided	6.7, 7.7, 8.7, 9.7
N.	irreversible and irretrievable commitments of resources	6.7,7.7, 8.7, 9.7
7849.5930	Prohibited Routes	
Subp. 1	**Wilderness Areas**. No high voltage transmission line may be routed through state or national wilderness areas	N/A
Subp. 2	**Parks and Natural Areas.** No high voltage transmission line may be routed through state or national parks or state scientific and natural areas unless the transmission line would not materially damage or impair the purpose for which the area was designated and no feasible and prudent alternative exists. Economic considerations alone do not justify use of these areas for a high voltage transmission line	6.2.8, 7.2.8, 8.2.8, 9.2.8
Minn. Stat. §216E.03, subd. 7	Designating sites and routes.	
(1)	Evaluation of research and investigations relating to the effects on land, water and air resources of large electric power generating plants and high voltage transmission lines and the effects of water and air discharges and electric and magnetic fields resulting from such facilities on public health and welfare, vegetation, animals, materials and aesthetic values, including base line studies, predictive modeling, and evaluation of new or improved methods for minimizing adverse impacts of water and air discharges and other matters pertaining to the effects of power plants on the water and air environment	6.0, 7.0, 8.0,9.0
(2)	Environmental evaluation of sites and routes proposed for future development and expansion and their relationship to the land, water, air and human resources of the state	6.0, 7.0, 8.0, 9.0
(3)	Evaluation of the effects of new electric power generation and transmission technologies and systems related to power plants designed to minimize adverse environmental effects	N/A
(4)	Evaluation of the potential for beneficial uses of waste energy from proposed large electric power generating plants	N/A
(5)	Analysis of the direct and indirect economic impact of proposed sites and routes including, but not limited to, productive agricultural land lost or impaired	6.2.3, , 7.2.3, , 8.2.3, 9.2.3
(6)	Evaluation of adverse direct and indirect environmental effects that cannot be avoided should the proposed site and route be accepted	6.0, 7.0, 8.0, 9.0
(7)	Evaluation of alternatives to the applicant's proposed site or route proposed pursuant to subdivisions 1 and 2	6.0, 7.0, 8.0, 9.0

Authority	Required Information	Where
(8)	Evaluation of potential routes that would use or parallel existing railroad and highway rights-of way	Table 4-2
(9)	Evaluation of governmental survey lines and other natural division lines of agricultural land so as to minimize interference with agricultural operations	3.3
(10)	Evaluation of the future needs for additional high voltage transmission lines in the same general area as any proposed route, and the advisability of ordering the construction of structures capable of expansion in transmission capacity through multiple circuiting or design modifications	4.1.2
(11)	Evaluation of irreversible and irretrievable commitments of resources should the proposed site or route be approved	6.7, 7.7, 8.7, 9.7
(12)	When appropriate, consideration of problems raised by other state and federal agencies and local entities	11.0

2.4 The Minnesota Route Permit Process

2.4.1 Minnesota Public Utilities Commission

The PUC regulates transmission line construction in Minnesota. The PUC approves the route and any conditions on the construction, operation, and maintenance of the transmission line through its route permitting process.

Route Permit

Minn. Stat. § 216E.03, subd. 2, provides that "[n]o person may construct a high voltage transmission line without a Route Permit from the commission. A high voltage transmission line may be constructed only along a route approved by the Commission." A high voltage transmission line is any transmission line "designed for and capable of operation at a nominal voltage of 100 kilovolts or more…" (Minn. Stat. § 216E.01, subd. 4; Minn. R. 7849.5010, Subp. 9). The permit application includes four 230 kV transmission lines and two 230 kV substations. The total combined length of the four transmission lines is approximately 37 to 40 miles.

In accordance with recently enacted Minn. Stat. § 216E.03, subd. 3a, the Applicant and Co-Applicant in early February 2009, published a notice in local newspapers announcing this Project and inviting all interested persons, including local governments, to an informational meeting held on February 11, 2009.

Once the Route Application is filed, it would be reviewed by the PUC for completeness. Minn. R. 7849.0200, Subp. 5 and 7849.5230, Subp. 1. Within 60 days of the PUC finding the application to be complete, it would hold public meetings on the Project. The purpose of the meetings is to obtain public opinion on alternative routes and the appropriate scope of the EIS that the OES would prepare for the Project. Minn. Stat. § 216E.03, subd. 6 and Minn. Rules 7849.5260, Subp. 1 and 7849.5300, Subp.2.

Minn. Stat. § 216E.03, subd. 6 directs that public hearings be conducted an administrative law judge (ALJ) from the Office of Administrative Hearings pursuant to the contested case procedures of Minn. Stat. Ch. 14. During the contested case hearing on the Route Permit application, interested persons can submit evidence supporting or challenging the Project as proposed. Upon closing the record for the contested case, the ALJ would submit a report and recommendation to the PUC on the application. Minn. Stat. § 2l6E.03, subd.6; Minn. R. 7849.0230, Subp.2 and 7849.5330. The PUC would consider the ALJ's report and recommendation in reaching its determination whether to grant the application with or without modifications, or deny it. Minn. Stat. § 216E.03, subd. 9; Minn. R. 7849.5340.

2.4.2 Office of Energy Security

Pursuant to Minn. Stat. § 216E.03, subd. 5, the Office of Energy Security (OES) must prepare an EIS for proposed high-voltage transmission lines. Generally, an EIS considers issues relating to routing, including the use of existing rights-of-way and the impacts of line construction, operation, and maintenance on environmental features and human settlement.

OES uses the EIS to disclose potential environmental impacts of the Project and to identify any mitigation measures with respect to the construction, operation, and maintenance of the Project that would minimize those impacts.

The following provides a summary of the state environmental process that needs to be complied with for this project:

- Review Route Permit application documenting proposed route alternatives for the Project and their potential environmental impacts.
- Publish in a legal newspaper of general circulation in each county affected by the Project, notices of the Route Permit application filing and the dates and locations for public hearings on the designation of the route for the Project. Route Permit application filing notification also made to the PUC General List, potentially affected landowners and local agencies.
- Hold a public meeting(s) to obtain public and agency input on the Route Permit application and the scope of the EIS.
- Issue decision on the scope of the EIS.
- Develop and publish the Draft EIS.
- Hold public hearings to obtain comments from public and agencies on the Draft EIS.
- Develop and publish the Final EIS.
- Administrative law judge issues recommendation on adequacy of Final EIS and selection of routes.
- PUC determines the adequacy of the Final EIS, and designates the routes for the Project with any conditions on its construction, operation, and maintenance to minimize environmental impacts.

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