

**Draft Scoping Decision Document
for
Line 3 Replacement Pipeline Project
PUC Docket NO. PL-15–137/CN-14-916**

**Minnesota Department of Commerce
Energy Environmental Review and Analysis
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1.0 Introduction

The purpose of an Environmental Impact Statement (EIS) is “to provide information for governmental units, the proposer of the project, and other persons to evaluate proposed projects which have the potential for significant environmental effects, to consider alternatives to the proposed projects, and to explore methods for reducing adverse environmental effects.”¹

The purpose of the scoping process, in turn, is “to reduce the scope and bulk of an EIS before the preparation of the EIS, identifying only those potentially significant issues relevant to the proposed project, define the form, level of detail, content, alternatives, timetable for preparation and preparers of the EIS, and to determine the permits for which information will be developed concurrently with the EIS.”² “All projects requiring an EIS must have an EAW [Environmental Assessment Worksheet] filed with the RGU [responsible governmental unit]. The EAW shall be the basis for the scoping process.”³

The Minnesota Environmental Policy Act (MEPA) states that: “[w]here there is potential for significant environmental effects resulting from any major governmental action, the action shall be preceded by a detailed environmental impact statement prepared by the responsible governmental unit.”⁴

For this project, the “major governmental action” is a decision by the Minnesota Public Utilities Commission (PUC) to grant or deny a Certificate of Need (CN)⁵ and a Route Permit⁶ for Enbridge Energy, Limited Partnership’s (Enbridge’s or Applicant’s) proposed Line 3 Replacement (L3R) Project (referred to as “L3R Project” or the “project”). This EIS will inform both PUC decisions on whether to issue a CN and, if need is found, whether to issue a Route Permit. Before issuing a Route Permit, the PUC must decide whether to issue a CN. The EIS will also inform other governmental agencies on a host of environmental and regulatory permits required for the project.

On February 1, 2016, the PUC — the RGU for this EIS⁷ — issued an order authorizing DOC-EERA staff to prepare a combined EIS for the CN and the Route Permit. The order also requested DOC-EERA to administer the EIS process in consultation with the PUC’s Executive Secretary, the MDNR and the MPCA to best meet the requirements of the MEPA and Chapter 4410 of the Minnesota Rules.

¹ Minn R. 4410.2000, subp. 1.

² Minn. R. 4410.2100, subp. 1.

³ Minn. R. 4410.2100, subp. 2.

⁴ Minn. Stat. § 116D.04, subd. 2a.

⁵ See Minn. Stat. § 216B.243, subp. 2; Minn. R. Ch. 7853 (<https://www.revisor.mn.gov/statutes/?id=216b.243>).

⁶ See Minn. Stat. § 216G.02, subd. 2; Minn. R. Ch. 7852 (<https://www.revisor.mn.gov/statutes/?id=216g.02>).

⁷ See Minn. R. 4410.4400, subp. 24.

1.1 Purpose of the Draft Scoping Decision Document

The Department of Commerce-Energy Environmental Analysis and Review (DOC-EERA) staff, with the assistance of the Minnesota Department of Natural Resources (MDNR) and the Minnesota Pollution Control Agency (MPCA) have prepared this Draft Scoping Decision Document (DSDD) for the proposed L3R Project. The purpose of this document is to identify impacts of the proposed project, alternatives to the proposed project, and impacts of any alternatives to be addressed in the EIS. In addition to identifying impacts and alternatives, this document also provides a proposed outline for the EIS and a tentative schedule for the environmental review process. This DSDD is a companion document to the Scoping EAW, which describes the proposed project in more detail and summarizes significant environmental impacts of the proposed project.⁸

1.2 Description of the Proposed Project

Enbridge proposes to construct and operate the L3R Project. The project replaces Enbridge's existing 34-inch-diameter pipeline with a new 36-inch-diameter pipeline and associated facilities. The existing pipeline currently transports crude oil from the Joliette Valve in Pembina County, North Dakota, to Clearbrook, Minnesota, and terminates at an existing terminal in Superior, Wisconsin. As proposed, L3R will follow the existing Enbridge mainline corridor west of Clearbrook and be co-located with the proposed Sandpiper Pipeline east of Clearbrook to Superior. The increased pipeline diameter restores Line 3 to its historical operating capacity of 760,000 barrels per day (bpd) from its current capacity of 390,000 bpd. The L3R route is approximately 363 miles long, of which 337 miles are in Minnesota, replacing 282 miles of the existing Line 3 pipeline. Associated facilities include four new pump stations east of Clearbrook and expansion of existing pump stations west of Clearbrook. The existing Line 3 will be permanently deactivated and remain in place following construction of the new L3R pipeline.

The proposed route for the L3R Project is a significant change from its current location, following the proposed Sandpiper route east of Clearbrook, rather than Enbridge's mainline corridor as it does currently.⁹ The L3R and Sandpiper pipeline routes can be seen on Figures 1 and 2 in Appendix A.

1.3 Regulatory Process

To construct and operate a crude oil pipeline greater than 6 inches in diameter in Minnesota, Enbridge must apply for and receive a CN approval and a Route Permit from the

⁸ The Scoping EAW is available on e-dockets using docket number 15-137(<https://www.edockets.state.mn.us/EFiling/edockets/searchDocuments.do?method=showDocketsSearch&searchType=new>) and on the DOC-EERA website (<http://www.mn.gov/commerce/energyfacilities/Docket.html?id=34079>).

⁹ From Clearbrook, Minnesota to Superior, Wisconsin, L3R is proposed to be co-located with Sandpiper Pipeline project, (Docket No. CN-13-473 and PPL-13-474, respectively).

PUC. Other permits required from state and federal agencies are listed in Section 7 of this document.

1.4 Procedural History

On April 24, 2015, Enbridge submitted a CN and Route Permit applications for the L3R. Consistent with the Applicant's notification to PUC on May 30, 2014, in the Sandpiper route proceeding, the L3R route parallels the Sandpiper route between Clearbrook, Minnesota and Superior, Wisconsin. The PUC accepted the L3R applications as complete on July 1, 2015.

Because the project is proposed to be partially co-located with Sandpiper project, the procedural history is extensive.¹⁰ Prior to the order issued on February 1, 2016, by the PUC requesting DOC-EERA to conduct an EIS, the PUC and DOC-EERA held 14 public scoping meetings in 10 of the 12 counties crossed by the proposed L3R Project in August 2015.

On February 1, 2016, the PUC issued its written orders establishing a process for conducting the Line 3 hearings.¹¹ In relevant part, the order (1) jointly referred the CN and the Route Permit to the Office of Administrative Hearings, (2) affirmed its Order Finding Application Substantially Complete and Varying Timelines; Notice of and Order for Hearing (August 12, 2015) except as inconsistent with the present order and the PUC Notice of Hearing issued in the routing docket, and (3) ordered preparation of an EIS covering need and routing issues pursuant to Minnesota Statutes Chapter 116D and Minnesota Rules Chapter 4410.

2.0 Environmental Review Process

Environmental review in Minnesota is administered through Minnesota Rules Chapter 4410. The process broadly encompasses scoping for the EIS and preparation of a Draft EIS (DEIS) and a Final EIS (FEIS), with opportunities for public review and comment. When the final scope for the EIS has been approved by the RGU and the EIS Preparation Notice has been issued, the RGU has 280 days to complete the environmental review process.

2.1 Environmental Impact Statement Scoping

Scoping is the first step in development of an EIS. According to Minnesota Rule 4410.2100, subpart 1, the purpose of scoping is "...to reduce the scope and bulk of an EIS, identify only those potentially significant issues relevant to the proposed project, define the form, level of detail, content alternatives, time table for preparation of the EIS, and to determine the permits for which information will be developed concurrently with the EIS."¹²

In addition to information in the EAW, the draft scope includes information from past orders issued by the PUC and public input received through numerous filings, public meetings and

¹⁰ See the complete procedural history for Sandpiper on e-dockets using docket numbers 13-473 and 13-474.

¹¹ See Document ID: [20161-117136-01](#).

¹² See Minn. R. 4410.2100, subp. 1.

comment periods as well as informal discussions with tribes, the public and various state and federal agencies. Relevant information from the Sandpiper record is also included due to the co-location of L3R and Sandpiper east of Clearbrook. Additional information or alternatives resulting from the scoping process will be addressed in the final scoping decision.

Public review and comment on the DSDD will be conducted in accordance with Minnesota Rule 4410.2100. A 45-day scoping comment period¹³ will begin when the Notice of Availability for the DSDD is published in the *Minnesota Environmental Quality Board (EQB) Monitor*. Scoping meetings will be held during the 45-day comment period, providing an opportunity for the public and federal, state, tribal and local government agencies to comment on the DSDD.

DOC-EERA staff will prepare a Comment Summary Report and propose a Final Scope based on comments received during the process. The Final Scoping Decision Document (FSDD) will identify all alternatives to be considered in the EIS and will be approved by the PUC. A notice of availability of the FSDD will be published in the *EQB Monitor*.

The Scoping EAW for this project is available and has been circulated with this DSDD. The purpose of the Scoping EAW is to help inform the scoping process by describing the proposed project and providing initial information on potential impacts along the Applicant's preferred route. Accordingly, the Scoping EAW reflects the updated route for which the Applicant is seeking a Route Permit.

3.0 Alternatives

3.1 Evaluation of Alternatives

Pursuant to Minnesota Rule 4410.2300(G), an EIS must compare the potentially significant impacts of the proposal with those of other reasonable alternatives to the proposed project. The EIS must address one or more of each of the following types of alternatives or provide a concise explanation of why no alternative of a particular type is included in the EIS:

- Alternative sites,
- Alternative technologies,
- Modified designs or layouts,
- Modified scale or magnitude,
- Alternatives incorporating reasonable mitigation measures identified through comment periods for EIS scoping or the DEIS, and
- No Action Alternative.

¹³ Minn. R. 4410.2100, subp. 3, requires a 30-day minimum scoping period, extended in this case to 45 days to accommodate scoping meetings in multiple counties crossed by the proposed and alternative routes.

The alternatives that will be considered during the DEIS process are identified in Section 3 (Table 1) of this document. The public may comment on these alternatives and propose additional alternatives during the 45-day comment period on the DSDD. DOC-EERA will apply the criteria in Minnesota Rule 4410.2300(G) in determining whether additional alternatives not already identified in Section 3 will be included for analysis in the DEIS.

Minnesota Rule 4410.2300(G) states that an alternative may be excluded from analysis in the EIS if:

- it would not meet the underlying purpose of the project,
- it would likely not have any significant environmental benefit compared to the project as proposed, or
- another alternative, of any type, that will be analyzed in the EIS would likely have similar environmental benefits but substantially less adverse economic, employment or sociological impacts.

3.1.1 Criteria for Evaluating Alternatives included in an EIS

All alternatives that will be carried forward for consideration in the EIS will be identified in the FSDD. Not all alternatives included in the final scope, however, must be evaluated in detail in the EIS. Alternatives included in the scope of the EIS that were considered but eliminated based on information developed through the EIS analysis must be discussed briefly and the reasons for their elimination must be stated.

DOC-EERA will use the following criteria in determining whether (under Minnesota Rule 4410.2300(G)) an alternative included in the scope of the EIS could be eliminated based on information developed through the EIS analysis.

1. The alternative must meet the underlying purpose of the project.

The purpose of the project is to address safety and integrity concerns of the existing Line 3 pipeline.

2. The alternative must be reasonable.

DOC-EERA intends to assess reasonableness of the alternatives based on the technical feasibility, costs, reliability, energy demand, overall state energy needs and the appropriateness of the size, type and timing of the alternative compared to Applicant's proposed project.

3. The alternative would have significant environmental benefits compared to the applicant's proposed route.

Examples of environmental criteria that may be used during alternatives evaluation in the DEIS include but are not limited to:

A. Wells and aquifers: number of wells and aquifers within alternative corridor

- B. Waterbodies: quality, context, number of rivers, lakes, creeks and drainages crossed by each alternative
 - C. Wetlands: acres, types, number of crossings
 - D. Rare Resources: Natural Heritage Information System (NHIS) data impacted by each alternative (by number or acreage)
 - E. Land Management/Ownership: number of acres of tribal lands, or federal or state parks/recreation impacted by each alternative
 - F. Land Use Cover Type: acreage of agriculture, forestry, urban, etc.
 - G. Cultural Resources: number of sites, National Register of Historic Places eligibility, impacts within the project corridor, Traditional Cultural Properties, subsistence areas
 - H. Co-location: number of miles co-located with other utility or roadway infrastructure by each alternative
 - I. High Consequence Areas (HCAs): Number of HCAs crossed by each alternative as defined by the Pipeline and Hazardous Materials Safety Administration (PHMSA) criteria for hazardous liquid pipelines. Focus on *unusually sensitive ecological resources*.¹⁴
4. The alternative would have similar environmental benefits but substantially less adverse economic, employment or sociological impacts compared to the applicant's proposed route.

Examples of economic, employment or sociological criteria that may be used to analyze the alternatives during evaluation in the DEIS include but are not limited to:

- A. Project cost
- B. Number of jobs due to construction
- C. Full-time jobs as a result of construction
- D. Induced impacts
- E. Displacement
- F. HCAs: Number of HCAs crossed by each alternative as defined by PHMSA criteria for hazardous liquid pipelines. Focus on populated areas and drinking water sources.¹⁵ Populated areas include both high population areas (called

¹⁴ *Unusually sensitive ecological areas* include locations where critically imperiled species can be found, areas where multiple examples of federally listed threatened and endangered species are found and areas where migratory water birds concentrate.

¹⁵ *Drinking water sources* include those supplied by surface water or wells and where a secondary source of water supply is not available. The land area in which spilled hazardous liquid could affect the water supply is also treated as an HCA.

“urbanized areas” by the US Census Bureau) and other populated areas (areas referred to by the US Census Bureau as a “designated place”).

3.2 Alternative Sites

Line 3 is an existing pipeline and is already transporting crude oil to Clearbrook, Minnesota, and Superior, Wisconsin; therefore, other alternative sites are not being considered as they will not address safety and integrity concerns.

3.3 Alternative Technologies

3.3.1 Rail

The transport of oil by rail involves moving oil from where it is produced to an oil-train terminal for temporary storage and subsequent transport by rail to an interconnection point or refinery where it may be processed into petroleum products. Oil transport begins at each production well. At these wells, oil is loaded onto trucks or transported by gathering pipelines to oil terminals for temporary storage and transfer to other modes of transportation (railroads, trucks and pipelines) for delivery to destination points, typically refineries that process the raw material into various finished products. Oil terminal facilities may be designed specifically for pipelines, unit trains, manifest trains, truck terminals or a combination thereof.

Because Line 3 is an existing pipeline and is already transporting crude oil to Clearbrook, Minnesota, and Superior, Wisconsin, a rail alternative will not address pipeline safety and integrity concerns. However, rail will be looked at as an alternative to continuing to operate the Line 3 pipeline.

3.3.2 Truck

Transporting crude oil by tanker truck is another potential alternative to constructing the proposed project. Tanker trucks are commonly used to move crude oil from wellhead locations not served by pipeline gathering systems to aggregation points and storage facilities. Typically oil tanker trucks are used where the travel distances are not significant.

Line 3 is an existing pipeline and is already transporting crude oil to Clearbrook, Minnesota, and Superior, Wisconsin; therefore, a trucking alternative will not address pipeline safety and integrity concerns. However, trucking will be looked at as an alternative to continuing to operate the Line 3 pipeline.

3.4 Modified Designs and Layouts: System Alternatives

System Alternatives were developed during the previous Sandpiper and Line 3 scoping meetings. The EIS will evaluate the System Alternatives in the Table 1: Description of System Alternatives and Figure 1 (in Appendix A).

TABLE 1 Description of System Alternatives				
System Alternative (SA)	Description	Length (approximate miles)	States Crossed (number)	Counties Crossed (number)
SA-03 Viking-North Branch-Superior	Begins in Tioga, ND, at the Beaver Creek Station and follows System Alternative-Applicant route east into MN. Just west of Crookston, MN, it turns south and follows the Viking Pipeline. In Clay County, MN, it continues southeast following the Viking Pipeline toward North Branch, MN. It then turns north to Superior, WI, following existing pipeline corridors.	700	3	25
SA-04 Alliance-Chicago	Begins in Tioga, ND, at the Beaver Creek Station and follows SA-Applicant route east to McHenry County, ND. SA-04 turns southeast and follows the Alliance Pipeline and proceeds generally southeast through MN, IA, and IL to its termination point in Joliet, IL.	940	4	48
SA-05 Alliance-Enbridge-Chicago	Begins in Tioga, ND, at the Beaver Creek Station and follows Applicant's preferred route east to McHenry County, ND, where it intersects with the Alliance Pipeline and travels southeast to Richland County, ND, where it turns south and follows the I-29 corridor. In Deuel County, SD, SA-05 intersects with the Northern Border Pipeline and travels southeast across MN and IA to Poweshiek County, IA, where it intersects with an Enbridge pipeline and continues east through IL to its termination point in Joliet, IL.	1,000	5	50
SA-06 RR-Alliance-MinnCann-TC-Superior	Begins in Tioga, ND, at the Beaver Creek Station and follows SA-Applicant route east to Grand Forks County, ND, where it follows the railroad corridor southeast to Wahpeton, ND. It then travels southeast along MN Highway 9 until it intersects with the Alliance Pipeline and continues southeast to just southwest of Willmar, MN. It then turns east and continues southeast toward the Twin Cities Metropolitan area where it intersects with the MinnCan Pipeline and continues to the vicinity of the Flint Hills Refinery in Rosemount, MN. It then turns north and follows existing pipelines to North Branch where it continues north following Interstate 35 to Carlton County, MN, where it turns generally east and follows SA-Applicant to Superior, WI.	800	3	33
SA-07 I-29-Magellan-MinnCan-TC-Superior	Begins in Tioga, ND, at the Beaver Creek Station and follows SA-Applicant route east to Grand Forks, ND, where it intersects with I-29 corridor and travels south to Fargo, ND. It then continues traveling southeast along the Magellan Pipeline corridor toward Alexandria, MN. At Alexandria, it turns south toward Willmar, MN, and then turns southeast toward the Twin Cities Metropolitan area where it intersects with the MinnCan Pipeline and continues to the vicinity of the Flint Hills Refinery in Rosemount, MN. It then turns north and follows existing pipelines to North Branch where it continues north following Interstate 35. It then continues to Carlton County, MN where it turns generally east and follows SA-Applicant to Superior, WI.	810	3	34

TABLE 1 Description of System Alternatives				
System Alternative (SA)	Description	Length (approximate miles)	States Crossed (number)	Counties Crossed (number)
SA-08 I-29-I-94-TC	Begins in Tioga, ND, at the Beaver Creek Station and follows SA-Applicant route east to Grand Forks, ND, where it intersects with I-29 corridor and travels south to Fargo, ND. It continues traveling southeast along the I-94 corridor toward the Twin Cities Metropolitan area. Just northwest of Maple Grove, MN, it turns east and follows an existing pipeline generally east across the north suburbs before turning south and following another existing pipeline across the east suburbs before terminating in Rosemount, MN.	635	3	27
SA-03-as modified L3-RA-10	This alternative is a modification to the system alternative SA-03. Routing proceeds south along SA-03, then east along CSAH 40, then to Clay county T-367, south along the Minnkota Power Cooperative Transmission Line, and then south on CSAH 7 to meet up with the SA-03 route.	263	3	10
SA-03-as amended L3-RA-10	This alternative is a variation of the Sandpiper SA-03 Modified. The route would proceed from the west: southeast on SA-03 Modified, northeast on US-169 to avoid Milaca, east on MN-23 to the intersection with MN-65, then cross country to CSAH 11 to avoid Mora, north on CSAH 11 to reconnect with MN-23, and then east on MN-23 to connect with the SA-03 Modified route.	382	3	15
L3-RA-01	This alternative would modify the centerline and route of the Applicant's April 2015 preferred route where it crosses mostly agricultural land. This alternative deviates from the April 2015 Route at milepost (MP) 27.4-W in Kittson County, MN, and rejoins the route at MP 27.9-W, in Marshall County, MN.	0.55	1	1
L3-RA-02	This alternative would modify the centerline and route of the Applicant's April 2015 preferred route where it crosses mostly agricultural land.	2.04	1	1
L3-RA-03	This alternative would modify the centerline and route of the Applicant's April 2015 preferred route where it crosses mostly agricultural land.	7.31	1	1
L3-RA-04	This alternative exits the Clearbrook Terminal on the north side of the facility. From that point, it turns west and then turns and runs south to rejoin the Applicant's preferred route south of the Terminal and Deep Lake.	2.52	1	1
L3-RA-05	This alternative would modify the centerline of the Applicant's preferred route where it crosses mostly forested land with some agricultural land.	13.01	1	1
L3-RA-06	This alternative would modify the centerline of the Applicant's preferred route where it crosses mostly agricultural land.	0.39	1	1

TABLE 1 Description of System Alternatives				
System Alternative (SA)	Description	Length (approximate miles)	States Crossed (number)	Counties Crossed (number)
L3-RA-07	This alternative would modify the centerline of the April 2015 Route where it crosses a mix of forested, open, and agricultural land.	1.45	1	1
L3-RA-08	This alternative would modify the centerline of the April 2015 Route where it crosses a mix of forested, open, and agricultural land.	7.19	1	1
L3-RA-09	This alternative would modify the centerline of the April 2015 Route where it crosses mostly forested land.	0.60	1	1
L3-RA-10	This alternative is a variation of Sandpiper SA-03 Modified. The route would proceed from the west: southeast on SA-03 Modified, northeast on US-169 to avoid Milaca, east on MN-23 to the intersection with MN-65, then cross country to CSAH 11 to avoid Mora, north on CSAH 11 to reconnect with MN-23, and then east on MN-23 to connect with the SA-03 Modified route.	42	1	3
L3-RA-11	This alternative would replace Line 3 in its current location.	282	3	12

3.5 Modified Designs and Layouts: Route Alternatives

Route alternatives identified during previous scoping meetings for the Line 3 and Sandpiper pipelines will be evaluated in the EIS. These are shown on Figure 2 in Appendix A.

3.5.1 *Description of Applicant's Preferred Route and Associated Facilities*

Enbridge has applied to the PUC for a CN and Route Permit to replace 282 miles (within Minnesota) of the existing Line 3 pipeline to transport crude oil at an enhanced capacity of 760,000 bpd from the Joliette Valve in Pembina County, North Dakota, to the Wisconsin border (and subsequently to Superior, Wisconsin). See Figure 2 in Appendix A.

- **Mainline valves:** The L3R Project includes 27 mainline safety valves. These valves are located along the pipeline to monitor and manually control flow as a measure of safety and efficiency.
- **Cathodic protection:** Cathodic protection systems would be installed along buried pipelines to mitigate the threat of external corrosion for buried metallic structures and maintain safe operation and integrity of pipelines.
- **Pipe/material storage yards:** Enbridge would temporarily use off-right-of-way (ROW) areas for pipe and material storage and to receive rail deliveries (rail sidings). In addition, construction contractors would require off-ROW contractor yards to park equipment and stage construction activities.
- **Access roads:** The project would require the use of a variety of public roads, existing privately owned roads, modifications to existing roads and construction of new access roads to provide access to the project site during construction. Enbridge would obtain landowner permission, conduct environmental surveys and obtain applicable environmental permits and clearances prior to constructing roadway modifications or new access. Permanent access roads would be constructed to each mainline valve.

The existing Line 3 originates in Canada and crosses the United States-Canada border near Necho, North Dakota. It continues through North Dakota to the Clearbrook Terminal near Clearbrook, Minnesota, and terminates at the Enbridge Superior Terminal near Superior, Wisconsin.

Once the new Line 3 becomes operational, the old Line 3 will be deactivated and remain in place in compliance with 49 Code of Federal Regulations (C.F.R.) Part 195, paragraphs 195.59 and 195.402. Enbridge will:

- Safely disconnect the existing Line 3 from all operating facilities such as pump stations and terminals;
- Purge the existing Line 3 of all combustibles;
- Seal the ends of the pipeline segments left in place; and

- File a report to identify where the pipeline is abandoned wherever it crosses over, under or through a commercially navigable waterway.^{16,17}

Enbridge's procedures will also incorporate the American Society of Mechanical Engineers' (ASME's) B31.4-2012, paragraph 457 guidelines on abandoning a piping system through:

- Purging the line of the transported liquid and vapor with an inert material and sealing the ends; and
- Ensuring that the line is disconnected from all sources of transported liquid, such as other pipelines, meter stations, control lines and other appurtenances.

Enbridge proposes the L3R Project to generally follow the existing Line 3 pipeline along the Enbridge mainline system ROW from the North Dakota-Minnesota border in Kittson County to and including the Clearbrook Terminal in Clearbrook. From Clearbrook, the project turns south to generally follow an existing third-party pipeline ROW to the Park Rapids, Minnesota, area, and then turns east to generally follow other existing electric transmission lines to the Minnesota-Wisconsin border in Carlton County. The L3R Project is proposed to be co-located with the Sandpiper pipeline east of Clearbrook.

Enbridge is requesting a route width of 750 feet (375 feet on each side of the L3R centerline). The same route width of 750 feet will be applied to other alternatives being evaluated in the EIS.

3.5.2 *Route Alternatives*

All 11 proposed route alternatives (LA-RA-01 through L3-RA-11) will be accepted for evaluation in the EIS. Additionally, the 53 routes accepted by the PUC in its order from August 25, 2014, for the Sandpiper pipeline will also be evaluated in the EIS.¹⁸ Of the 53 route alternatives approved, 23 have been incorporated into the preferred route by Enbridge. The remaining 30 route alternatives will be considered in the EIS. This EIS includes 57 alignment modifications (CM-01 through CM-57) that will be accepted for incorporation into the Applicant's preferred route.

The EIS will also consider any new route alternatives that are developed during the scoping process through public and agency involvement. Route alternatives to be carried forward for evaluation in the EIS must be approved by the PUC.

3.6 **Modified Scale or Magnitude**

The EIS will not be evaluating alternatives of different pipe dimensions or different pipe metal thickness. Due to engineering requirements and requirements under PHMSA, this EIS

¹⁶ 49 C.F.R. 195.402.

¹⁷ Operations & Maintenance Enforcement Guidance Part 195 Subpart F Enbridge Energy, Limited Partnership Pipeline Routing Permit Application April 2015 MPUC Docket No. PL-9/PPL-15-137 Section 8.0 8-2.

¹⁸ See Sandpiper Alternative Route Summary report, e-docket id number [20148-102500-02](#).

will not address variations in different pipe dimensions or different pipe metal thickness as an alternative; pipe thickness will be discussed as a mitigation option.

3.7 Alternatives Incorporating Reasonable Mitigation Measures

This alternative type is not typically applied to large linear projects. Some element of reasonable mitigation measures will be evaluated with the alternatives identified in Section 3.

3.8 No Action Alternative

The EIS will describe the expected condition if the project is not developed with respect to the potential environmental and socioeconomic effects outlined in Section 4 of this document. The No Action Alternative assumes the pipeline will not be replaced and that current maintenance and integrity digs will continue.

4.0 Environmental Impact Statement Content

4.1 General EIS Format and Approach

According to Minnesota Rule 4410.2000, subp. 1, “The purpose of an EIS is to provide information for government units, the proposer of the project, and other persons to evaluate proposed projects which have the potential for significant environmental effects, to consider alternatives to the proposed projects, and to explore methods for reducing adverse environmental effects.”

A preliminary table of contents for the EIS is provided in Appendix B.

4.2 Line 3 Replacement Project’s Relationship to Sandpiper Pipeline Project

Separate approvals are needed from the PUC for the Sandpiper Project and the L3R Project. Each project will have its own EIS, and the cumulative impacts of each project will be addressed in both EISs. If the Applicants’ preferred route for each project is approved, Sandpiper and L3R will be co-located from Clearbrook, Minnesota, to Superior, Wisconsin.

4.3 Data and Analysis

“Data and analyses in the EIS shall be commensurate with the importance of the impact and the relevance of the information to making a reasoned choice among alternatives and to the

consideration of the need for mitigation measures Less important material may be summarized, consolidated or simply referenced.”¹⁹

If information about potentially significant environmental effects is essential to a reasoned choice among alternatives and is not known, cannot be obtained, or the means to obtain it is not known, the EIS will include a statement that such information is incomplete or unavailable and will explain the relevance of the information in evaluating potential impacts or alternatives; summarize existing credible scientific evidence that is relevant to evaluating the potential significant environmental impacts; and evaluate such impacts from the preferred route and route alternatives based upon theoretical approaches or research methods generally accepted in the scientific community.²⁰

No field-level data collection will be performed for any of the route alternatives. Field data for the Applicant’s preferred route has been completed by the Applicant. Publicly available data will be used to compare routes and will include existing federal, state and local government sources.

The scale of analysis will include a regional analysis area (RAA) to describe resources and potential impacts that may occur beyond the area of disturbance for construction and the permanent ROW, and an alignment analysis area (AAA). The AAA is focused on the land and alignment of various facilities within the proposed route width, as illustrated in Figure 1. The route width is the broadest area of land at 750 feet across and spans possible locations of pipelines, temporary construction and the permanent ROW.

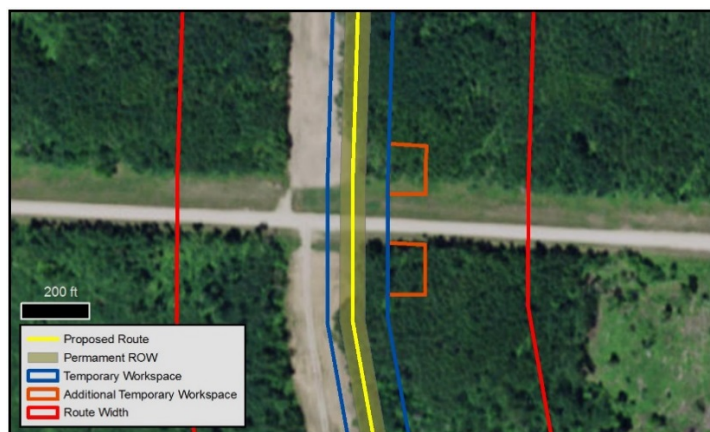


FIGURE 1 Illustration of Alignment Analysis Area

The RAA is generally measured from the proposed route centerline of the AAA; analysis at this regional scale is intended to put the resources in perspective, such as noting that a particular wetland in the AAA is part of a larger complex or that prime farmland extends throughout the area. Quantitative analysis at this regional scale will count, measure or otherwise present features a certain distance beyond the alignment centerline. The RAA will vary depending on the resource, but will be applied equally across all alternatives for a

¹⁹ Minn. R. 4410.2300(H).

²⁰ See Minn. R. 4410.2500.

particular resource. For example, the RAA for some resources may be the entire county and for others may be a specified distance from the centerline. Resources within the AAA and RAA will be presented, along with information on quality and function of those resources, and potential impacts of the preferred and alternative routes analyzed.

The L3R Route Permit Application includes the location of:

- Pipeline construction and permanent ROW,
- Extra work/staging areas,
- Access roads,
- Pipe and contractor yards, and
- Aboveground facilities (pump stations).

Detailed pipeline construction and operation features are not available for the route alternatives accepted for analysis. General pipeline construction and pump station spacing will be analyzed using the same spatial footprint as the Applicant's preferred route.

4.4 Detailed Environmental, Social and Economic Analysis

Potential social, environmental and economic effects of the proposed project have been identified and described in the Scoping EAW. These are broad categories that will be further developed throughout the scoping of the EIS. Mitigation measures that could reasonably be applied to eliminate or minimize adverse environmental effects will be identified in the EIS.

A draft outline of the EIS is provided in Appendix B.

4.4.1 Human Settlement

Qualitative comparison of route alternatives will be conducted for property values, human populations and income comparisons. Local land use plans will be identified. Potential aesthetic impacts will be addressed using federal guidelines applicable to federal forest areas and other unique aesthetic viewsheds that could be altered. Sensitive human settlement noise receptors will be assessed using state standard methods. Land type conversion as a result of project construction will be analyzed across all routes and route alternatives.

4.4.1.1 Data Sources Identified

The 2010 United States census data will be the primary source data for demographic, housing and property value analysis. Supplemental data will be obtained from local and regional land use plans, development plans and discussions with local officials for zoning and land use analysis. Visual resource analysis will use USFS guidelines. Noise impacts will be assessed according to state standards on identified receptors. Environmental justice analysis will use Minnesota Department of Employment and Economic Development 2010, United States census datasets and the most recent American Community Survey of the

US Census Bureau. Zoning and land use will be assessed qualitatively to identify possible current and future conflicts.

4.4.1.2 Housing

Evaluation of residential housing impacts includes an estimate of the number of homes within a certain distance of the pipeline and any displaced homes. Impacts to homes as a result of changes in access resulting from construction will also be evaluated. Any residences or other buildings located within the Applicant's preferred route and other route alternatives will be identified. The potential for a resulting displacement of residences or other human activities will be assessed. The location and proximity of residences or other structures will be reviewed using aerial photography and analysis and proximity tools in ArcGIS.

4.4.1.3 Property Values

Relative differences in property values among route alternatives will be assessed. The construction and operation of a pipeline system can have effects on existing property values. Property values are influenced by site-specific factors and local and national market conditions. Existing literature and datasets will be used to assess effects.

4.4.1.4 Population

Current and projected future distribution of human populations will be characterized. The sizes and distribution of incorporated areas will be summarized.

4.4.1.5 Environmental Justice

Disproportionately high and adverse impacts on minority and low-income populations with respect to human health and the environment will be assessed.

4.4.1.6 Income

Income levels in the counties of the project region, including all route alternatives, will be described. Median income levels among the major population groups will be compared.

4.4.1.7 Planning and Zoning

Minnesota statutes provide local governments with zoning authority to promote public health and general welfare and Minnesota Statute Section 299J.05 provides for pipeline setback ordinances. County records will be reviewed to determine existing land use plans and zoning ordinances or development codes along the Applicant's preferred route and other route alternatives to determine whether location of the proposed facilities is consistent with current zoning and ongoing land uses.

4.4.1.8 Aesthetics

Aesthetic and visual resources include the physical features of a landscape such as land, water, vegetation, animals, and structures. Resources will be identified within an RAA

consistent with USFS guidelines for visual resource analysis. The impact assessment will also describe visual changes that will occur if the pipeline and associated facilities are built. Where adverse visual effects are identified, mitigation measures will be addressed. The relative scenic value or visual importance of these features will be assessed and impacts assessed based on distance to project structures, viewshed perspective, and duration of view impairment. The location and proximity of these resources to the project will be reviewed using spatial analysis tools in ArcGIS.

4.4.1.9 Noise

The potential for long-term noise impacts from operation of pump stations and associated substations will be assessed by considering the sound level increase over existing levels. Receptors, such as homes, that may be impacted by changes in noise levels as a result of pump stations will be evaluated for compliance with the state noise standard.

4.4.1.10 Existing Contaminated Sites

Documented sites of environmental contamination will be assessed. The greatest potential for impact would be the inadvertent excavation of preexisting environmental contaminants. To determine the potential presence of preexisting contamination, data will be collected from the US Environmental Protection Agency (EPA) Facility Registration Service (FRS). This exchange network is a partnership among states, tribes, territories and the EPA to facilitate the exchange of environmental information throughout the country. Readily available Minnesota databases residing with Minnesota Department of Transportation (MnDOT), MPCA, and other state agencies will also be obtained. For route comparison purposes, counts of sites with preexisting contamination (if any) will be developed using spatial analysis tools within ArcGIS.

4.4.2 Transportation and Public Services

Public service features include schools, medical facilities, religious facilities, fire and police stations and transportation networks (such as roads, airports and railroads), which serve the daily needs of residents in the community. These important features are located throughout all of the route alternatives the EIS will consider.

4.4.2.1 Data Sources Identified

The data used to establish baseline community features will be derived from a variety of federal, state and local sources. Data for emergency services will be collected from the US Geological Survey (USGS) National Structures Datasets (NSD); cemeteries and church data will be derived from ESRI and other sources; highway data will be collected from USGS Topologically Integrated Geographic Encoding and Referencing (TIGER) data (and other sources); airport data will be collected from the Federal Aviation Administration's (FAA's) National Flight Data Center (and other sources); and schools data will be acquired from Minnesota databases.

Counts of features will be developed using spatial analysis tools within ArcGIS. Roadway crossings will be quantified and classified as state, federal, county and local. Roads

intersecting route alternatives will be quantified by road class designation. Utility crossings of route alternatives pursuant to state regulations for a Utility Permit will be quantified. Emergency service plans will be identified and qualitatively discussed for each route alternative area, and a tabulation of plans and characteristics will be compared to emergency response plans from the Applicant for identifying gaps and inconsistencies per state and federal rules. Airport types and locations will be quantitatively compared, as will schools and churches.

4.4.2.2 Roadways

Comparison of route alternatives with various road classes will be performed. Compatibility of the proposed pipeline crossings of roads with MnDOT's utility accommodation policy will be performed to ensure that the proposed project, if constructed and operated, would not interfere with the flow of traffic or the safe operation of vehicles.

4.4.2.3 Public Utilities

To assess the potential impact of the Applicant's preferred route and other route alternatives on public utilities that serve residents and businesses in the project area, existing electric and natural gas utilities that could be crossed or affected by the proposed project will be identified. Presence of power-generating facilities located in the vicinity of route alternatives will also be reviewed.

4.4.2.4 Emergency Services

Law enforcement agencies, city and community fire departments, volunteer fire departments, rural fire departments, and fire protection districts along the Applicant's preferred route and other route alternatives will be identified. Hospitals, emergency response centers, emergency medical services and ambulance districts will also be identified. Potential impacts will be evaluated particularly as they relate to accidental spill releases.

4.4.2.5 Airports

The locations of airports and private landing strips in the vicinity of all of the route alternatives will be identified. Setbacks and other requirements of these facilities will be evaluated.

4.4.3 Economics

Regional economies for the preferred and alternative routes in Minnesota will be evaluated for their regional and project-specific importance. An overview of the region-wide financial contribution of these economies will be provided. Mapping will be used to show the regional locations of land areas contributing to these economies. Evaluation of economic impacts will include cost estimates of the preferred route and alternatives and impacts to local and regional economies.

4.4.3.1 Data Sources Identified

The 2011 USGS National Land Cover Database and additional detailed information on existing land use and zoning will be obtained from counties and municipalities crossed by the route alternatives. Information on prime and unique farmland will be obtained from Natural Resources Conservation Service (NRCS), and information on parcels participating in the Farm Service Agency Conservation Reserve Program will be obtained from the US Department of Agriculture (USDA). Information on US Army Corps of Engineers (USACE), US Department of Interior, and other federal recreational and public use areas will be obtained. This will include landscape-scale conservation systems such as the tallgrass prairie conservation area. Readily available database information will also be obtained from the Minnesota Geospatial Information Office (MnGeo), Minnesota Department of Agriculture (agricultural resource types), MDNR (forest inventory data, forest stewardship sites, minerals, public use recreation designations and tourism centers), University of Minnesota 2011 Forest Products Industry Report, and Minnesota Office of Tourism.

Land cover datasets will be used to divide areas into the four major economic land uses in the region. This will be presented at a regional scale. Qualitative comparison will be made for the predominant economies in the project region and the relative differences among route alignments.

Recreation and tourism data will be obtained from sources such as MDNR, Minnesota Department of Employment and Economic Development, the University of Minnesota Tourism Center, and Minnesota Department of Revenue Leisure and Hospitality Industry reports.

4.4.3.2 Agriculture

Agricultural areas, including prime farmland and crops in the project region, will be described. Both short- and long-term impacts and mitigation of pipeline construction and operation will be analyzed, including potential impacts to potatoes, wild rice, specialty crops, and organic and transitional operations.

4.4.3.3 Forestry

Timber resources and forest areas in the project region will be described and mapped, including ownership. Potential impacts to the forest products economy will be discussed, particularly regarding land permanently removed from forestry by the pipeline ROW as well as access concerns for ongoing forest management activities.

4.4.3.4 Mining

Minnesota's mining resources include ferrous and nonferrous metals, high-quality granite, limestone, sand and gravel, and peat. Locations and types of mining resources, active mines, and readily available mineral lease data will be mapped and summarized for the project region, and potential impacts discussed.

4.4.3.5 Recreation and Tourism

Regional tourism, including public recreation lands, percent of housing serving as vacation/second homes, and other special use areas will be identified. Centers of tourism economy will be identified, including destination locations, such as the Brainerd Lakes area. The economic impact of recreational tourism regionally and locally will be analyzed within the RAA.

4.4.4 Cultural Resources

Cultural resources include archaeological resources, historic resources, cultural values (including Traditional Cultural Properties), and treaty areas. Archaeological resources include historic and precontact artifacts, structural ruins, or earthworks and are often partially or completely below ground. Historic resources include extant structures, such as buildings and bridges, as well as districts and landscapes. Potential impacts to cultural resources will be evaluated across the preferred route and route alternatives.

4.4.4.1 Data Sources Identified

Information concerning cultural resources will be obtained from the cultural resources survey that is being conducted for the Applicant's preferred route. It is anticipated that the survey report will include information regarding archaeological sites, historic resources, and properties of cultural value for the Applicant's preferred route. The Minnesota State Historic Preservation Office (SHPO) maintains records of known archaeological and historic resources, which will be consulted for the route alternatives. The Minnesota SHPO inventory files to be reviewed include: History/Architecture Inventory, History/Architecture Reports, Archaeological Sites and Archaeological Reports. In addition, historical maps (General Land Office, USGS, etc.), aerial imagery and online libraries will be used for additional information.

4.4.4.2 Archaeological, Historical and Cultural Resources

Counts and categories of the resources within the Applicant's preferred route and the route alternatives will be developed using spatial analysis tools within ArcGIS. Direct and indirect impacts to cultural resources will be evaluated for resources in the AAA. Appropriate mitigation measures to reduce impacts from pipeline construction and operation and accidental releases will be recommended as necessary.

Cultural resources that are eligible, listed or unevaluated for listing in the Minnesota State Historic Sites Network and the Minnesota State Register of Historic Places will be included in the impacts assessment. In addition, impacts to resources that are eligible, listed or unevaluated for listing in the NRHP will also be assessed. The National Historic Preservation Act (NHPA) defines the term "historic property" to include districts, sites, buildings, structures, landscapes, and objects included in or eligible for the NRHP (54 US Code 300308).

4.4.5 Natural Environment

Natural environment broadly encompasses air, water and biological resources.

4.4.5.1 *Data Sources Identified*

Natural land cover data sources are the 2011 USGS National Land Cover Database, USGS National Gap Analysis Program (GAP) Land Cover Data Portal, locations of Wildlife Management Areas (WMAs), Waterfowl Production Areas (WPAs) and DNR prairie conservation easements. Water resources data will be obtained from readily available databases residing with state and federal sources, including MnGeo, waterbody data from the USGS National Hydrography Flowline and Waterbody Database (NHD), US National Atlas Water Feature Line dataset, EPA's Impaired Streams Database, and the US Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) database and Minnesota NWI update. Where database information is readily available, wetlands will be tagged as associated with the MPCA wetland quality monitoring program, state or federal wetland banking program, and MPCA watershed-based TMDL Implementation Plan or WRAP areas in or near the routes. Wetlands that have a calcareous fen or are designated as wild rice wetlands will be tagged. Readily available databases will be used to tag wetlands associated with Minnesota Wetland Conservation Act or other state or federally funded easement and management plans.

Additional databases for identification and assessment of lake, stream and river resources may include DNR Public Waters Inventory, DNR LakeFinder, DNR Hydrography, Minnesota Trout Streams, Statewide Altered Watercourse, Federal Emergency Management Agency (FEMA) Floodplain, 305b Assessments of Stream Conditions, MPCA sentinel lake designations, TMDL watersheds and waterbodies, Outstanding Resource Value Waters, and Watershed District and Watershed Management Organization boundaries. The MPCA's Index of Biological Integrity will be used to evaluate the quality of rivers and streams crossed by the preferred and alternative routes. Number of lakes and counts of river and stream crossings of various designations will be used for comparing routes.

Karst and other geologic landform datasets will be used to assess groundwater sensitive areas. Minnesota Department of Health, Minnesota Geological Survey, MnGeo, and DNR Data Deli databases will be used to assess the proximity of routes to groundwater sensitive areas, wells and source protections areas.

Potential impacts to resources will be quantified using spatial analysis tools in ArcGIS. Appropriate mitigation measures to reduce impacts from pipeline construction and operation and accidental releases will be recommended.

4.4.5.2 *Air Quality*

Air quality impacts associated with construction and operation of the proposed project and associated facilities include emissions from fugitive dust, fossil-fuel fired equipment, and pipeline and tank evaporation losses. The air quality impacts analysis will include a review and estimate of the emission inventory of all criteria pollutant, greenhouse gas and hazardous air pollutant emissions related to construction and operation of the proposed project. Air quality impacts will be reviewed in light of federal and state local air pollution standards and regulatory requirements, where applicable. Where no regulatory standards can be applied, comparative thresholds will be used. The identification of air quality impacts

will take into consideration other factors such as the uniqueness of a particular location and existing environmental conditions.

4.4.5.3 Water Resources: Quality, Watersheds and Floodplains

Streams and rivers, lakes, groundwater, and floodplains will be identified and compared across route alignments. Additionally, special resources for which federal and state laws govern restoration and protection will be identified. This includes outstanding resource value waters, sentinel lake watersheds, impaired waters for which state and federal monies are being spent, and resources being protected and restored under Minnesota's Constitutional Amendment for Clean Water, Land and Legacy. Measures to minimize adverse effects include using sound erosion control and stormwater management practices and reducing floodplain encroachment and increases in the height of the regional (100-year and 500-year) floodplain elevation. Properly minimizing adverse effects requires assessment of existing conditions such as water quality, fishery resources, floodplain functions and values, watershed stability, potential undesirable outcomes to these conditions, and proposed measures to minimize the adverse effects.

The extent to which erosion control and stormwater management measures, that is best management practices (BMPs) or specific erosion control and stormwater management commitments, are proposed depends on a variety of factors, including construction timeframe and the extent of water and floodplain resources in the project's area of effect.

4.4.5.4 Wild Rice and Other Tribal Resources

Wild rice is an important resource in northern Minnesota and a key part of Ojibwe culture. Wild rice is very susceptible to disturbance in all habitats (lake, river or wetland) and sensitive to temperature changes, contaminants or hydrology changes, all of which on their own or in combination could affect germination and production of rice beds. Construction and restoration-related impacts due to sedimentation could also affect wild rice germination rates and reduce production. The EIS will compare the potential for these impacts due to the proposed route and other alternatives.

4.4.5.5 Wetlands

Wetlands will be identified according to the NWI and Minnesota NWI updates where available. USDA NRCS Farm Service Agency data may be readily available. Special feature wetlands will be identified as wild rice wetlands, calcareous fens, and state or federal wetland bank sites.

Wetland boundaries are available for the Applicant's preferred route from wetland boundary determinations or delineations conducted in accordance with the USACE, the agency that authorizes Section 404 wetland permits.

4.4.5.6 Natural Communities and Habitat

Native flora and wildlife habitat will be characterized in the overall project region, within the RAA and AAA. GAP land cover, ecological subsections and public designated areas for

wildlife such as WMAs and federal, state and locally identified conservation or habitat areas will be identified.

4.4.5.7 Soil Resources

Soil orders in the project region will be summarized and mapped. To determine potential impacts to major soil classifications, soils data will be obtained from the NRCS's Major Land Resource Areas (MLRA) database. Acreage of soil orders and some lower order classifications along each route alternative will be estimated using spatial analysis tools in ArcGIS. The Digital General Soil Map of the United States or STATSGO2 will aid in development of particular soil quality information.

4.4.6 Rare and Unique Natural Resources

Biological resources with special protection and management will be analyzed as a distinct subset of natural environment. These include state and federally listed threatened and endangered species, state natural heritage sites, species of greatest conservation need (SGCN), state scientific and natural areas, and Minnesota Biological Survey sites of Biodiversity Significance.

4.4.6.1 Data Sources Identified

Natural heritage data will come from MDNR's NHIS, and include spatial data on listed species. Scientific and natural area locations will come from the MDNR data sources. GAP land cover and methods from Tomorrow's Habitat for the Wild and Rare will be used to identify SGCN habitat. Each of these features will be quantified according to the number intersected by the AAA. Regional-scale comparison will vary based upon the available dataset. Data will be available on a county basis except that determination of SGCN habitat polygons will be based on analysis within 5 miles of the alignments.

4.4.6.2 State and Federally Listed Threatened and Endangered Species

To determine impacts on state and federally listed threatened and endangered species, data will be collected from the USFWS Information, Planning, and Conservation System (IPaC) at the county level. In addition, USFWS Species Fact Sheets, USFWS Critical Habitat data, and Natural Heritage data will also be reviewed.

4.4.6.3 State Natural Heritage Sites

In addition to listed species location data, NHIS licensed data provides for identification of high-quality native plant communities, animal aggregations, and other important ecological and landform features. These data will be analyzed using ArcGIS to spatially plot their locations in relation to the Applicant's Preferred Route and route alternatives. Data displayed on maps or in tables will be in compliance with the data privacy requirements of the NHIS license.

4.4.6.4 *Species of Greatest Conservation Need*

Minnesota's State Wildlife Action Plan identifies SGCN habitat. The associated land use cover data will be obtained and used to assess impacts to SGCN habitat.

4.4.6.5 *State Scientific and Natural Areas*

Minnesota's geospatial data on scientific and natural areas will be obtained. These data will be analyzed using ArcGIS to spatially plot their locations in relationship to the Applicant's preferred route and alternatives.

4.4.7 *High Consequence Areas and Natural Disaster Hazard Areas*

The consequences of an inadvertent release of product (natural gas, crude oil, refined products, etc.) from a pipeline can vary, depending on where the release occurs and the product involved. These releases may adversely impact or damage human health and safety, the environment and personal property.

HCAs are areas and features where a release may have the most significant adverse consequences. HCAs for hazardous liquid pipelines include:

- Populated areas – including both high population areas (called “urbanized areas” by the US Census Bureau) and other populated areas (areas referred to by the US Census Bureau as a “designated place”).
- Drinking water sources – including those supplied by surface water or wells and where a secondary source of water supply is not available. The land area in which spilled hazardous liquid could affect the water supply is also treated as an HCA.
- Unusually sensitive ecological areas – including locations where critically imperiled species can be found, areas where multiple examples of federally listed threatened and endangered species are found, and areas where migratory water birds concentrate.

Natural Disaster Hazard Zones are areas that present a higher risk of failure in the event of a flood or landslide. These Natural Disaster Hazard Zones are defined as being Low, Medium or High risk.

4.5 Impacts of Routine Construction and Operation

In the analysis of route alternatives, AAA impacts will be discussed as construction or operationally related. Opportunities for avoiding impacts by adjusting the ROW will be evaluated. Construction-related impacts will be identified by reviewing the Applicant-proposed project description details. Impacts could result from access to facilities and services, vehicle emissions and fugitive dust, noise, erosion and sedimentation, soil compaction, construction solid waste/hazardous waste, vibration and vegetation clearing. Construction material sources (borrow sites) and major utility adjustments are possible sources of additional construction-related impacts that would be considered.

The project will require the use of heavy equipment to clear land, dig ditches, install and backfill pipe, construct ancillary facilities and revegetate. These impacts would occur wherever the route is located. However, these impacts can be mitigated by construction measures, such as limiting construction work hours, using BMPs to control soil erosion, minimizing the removal of vegetation and remediating soil compaction and other soil disturbances. The potential spread of invasive species due to construction and the movement of equipment along the project route will be evaluated. Mitigation measures necessary to reduce the spread of invasive species will be identified.

Operational impacts can exist for the life of the project. These changes could be aesthetic/viewshed-based, land use restrictions, vegetative cover change in the managed ROW and associated habitat, drainage patterns, soil quality and loss of resources. Some impacts that are unavoidable can be mitigated, such as recovery of cultural artifacts and filled wetlands.

4.6 Method for Assessing Impacts of Crude Oil Releases

Various approaches to evaluate the impacts of a crude oil release (large volume and small or pinhole leaks) will be applied to the preferred and alternative route alignments. Impact assessments will be based on literature reviews of large and small release volumes, including relevant case studies; a general analysis of impacts from a release to resources along the preferred and alternative routes, including impacts to groundwater; the probability of a release; and site-specific modeling of representative sites that can be used to make general comparisons to other locations. Resources to be considered in the analysis include but are not limited to residential structures, populated areas, water and biological resources, cultural resources and HCAs.

4.6.1 Large Volume Spill General Methods

Large volume spill analysis will consist of spill modeling and a summary and application of methods of spill impacts analyses from other projects, such as the Keystone XL Pipeline EIS, and the Ecological and Human Health Risk Assessment of Pipeline Releases along the Line 3 Pipeline in Canada. Spill incident findings and remediation efforts from investigations near Bemidji, Minnesota, by the USGS, and the National Transportation Safety Board report on the Marshall, Michigan, spill, and other case studies will be used in the analysis.

The Applicant will provide data on maximum spill volumes, spill frequency and the types of crude oil being transported based on the proposed engineering and operations for the pipeline. This information will be applied to all large volume spill impact analysis methods. An estimated large volume spill footprint will be established based on these data and methods from other current or recent past investigations, including those used by Exponent in a review of the Keystone XL Pipeline Final EIS. The methods will consider general geomorphic conditions in Minnesota to develop a general spill footprint. The analysis will also include the review of data on crude oil releases from the PHMSA database.

4.6.1.1 *Large Volume Spill Modeling*

Spill modeling will be conducted by RPS ASA, a global science and technology consulting firm specializing in environmental modeling, using OILMAPLAND and SIMAP modeling software. OILMAPLAND is a land and surface water spill model system (two-dimensional) that simulates oil and chemical releases from pipelines and storage facilities, providing a modeling tool for oil spills that occur on land and then migrate to streams and lakes. SIMAP provides detailed predictions of the three-dimensional trajectory, fate, biological effects, and other impacts of spilled oil and fuels in aquatic environments. Both modeling programs meet PHMSA regulatory requirements.

To assess potential impacts associated with an accidental release, the Applicant will provide maximum spill volume estimates at seven representative sites along the preferred and alternative routes assuming a complete pipeline rupture. Data generated from modeling representative sites will be used to make broad environmental comparisons among and across routes in areas with similar features. At five of the seven sites, OILMAPLAND (the two-dimensional oil spill trajectory and dispersion model) will be used to estimate the potential spread of a projected maximum crude oil spill across land and into nearby watercourses and waterbodies. At two of the seven sites, SIMAP (the three-dimensional oil spill trajectory, dispersion and vertical mixing model) will be used to estimate the potential spread of the maximum crude oil spill across land and into nearby watercourses and waterbodies as well as the potential mixing of oil and sediment in the water column.

The models will be run for a set of scenarios that include the following crude oil types: light sweet Bakken crude oil, Cold Lake Blend and Cold Lake Winter Blend. These crude oils represent a range of oil densities and chemical compositions. Additional modeling parameters include seasonal variation to capture water flow volumes (high flow, low flow, and snow/ice covered), and a 24-hour model run with outputs at 6, 12 and 24 hours. The combinations of model inputs will result in more than 40 modeling scenarios from which to analyze potential impacts to resources along route alternatives.

4.6.2 *Small Leaks*

Small or pinhole leaks will be evaluated qualitatively through a combination of literature review and relevant case studies. Factors for evaluation will include volume of the release, the length of time for detection and the types of effects on groundwater, surface water and soils. Types of remediation and recovery, if applicable, will also be presented.

Potential impacts to shallow groundwater resulting from small (pinhole) leaks will be assessed qualitatively using the key findings of work done previously in Exponent's risk assessment of the Keystone XL Pipeline. Exponent used a numerical hydrocarbon spill screening model (HSSM) to evaluate a small leak from a high-pressure crude oil pipeline. The model considered a small leak of approximately 28 bpd and determined it would reach the ground surface within several months and that a partitioned benzene plume resulting from the leak could potentially travel up to 600 feet downgradient. To be conservative, potential groundwater resources within 1,000 feet of the potential centerline of the pipelines will be qualitatively assessed. The assessment will focus on areas where groundwater within 1,000 feet is influent to streams or other waterbodies or where shallow

groundwater wells are present. Minnesota data layers used to analyze potential leaks will include source water protection areas and groundwater sensitive areas.

4.7 Cumulative Effects

Cumulative effects are those that result from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions and are to be addressed pursuant to Minnesota Rule 7852.1900, subpart 3, for pipeline routing. The purpose of the cumulative effects analysis is to identify any proposed project effects that, when combined with other effects to resources in the region, may cumulatively become significant through incremental impacts. Adverse impacts that cannot be avoided as well as irreversible and irretrievable commitments of resources also will be presented.

The cumulative effects methodology will:

- Identify other actions affecting the resources, ecosystems (including aquatic ecosystems) and human settlements of concern;
- Characterize impacted resources identified in terms of their response to withstand change and capacity to withstand stress;
- Identify the important cause-and-effect relationships between human activities and resources; and
- Modify alternatives to mitigate significant cumulative effects.

Not all actions would have cumulative effects in all resource areas. Potential effects for such actions will be discussed in terms of the potentially affected resources. When the effects of a reasonably foreseeable action cannot be quantified, qualitative assessments will be provided. Past and present projects and their effects will be included as part of the baseline status of environmental resources presented in the analysis of alternatives.

In addition, the environmental document will take into account the potential cumulative impacts of both the Sandpiper and L3R Project, including impacts relative to the ROW needed to co-locate the two lines between Clearbrook and Superior along the preferred route and all alternatives.

As proposed, the Sandpiper Project will construct a new 612-mile oil pipeline extending from Beaver Lodge Station, south of Tioga, North Dakota, to a new terminal facility at Clearbrook, Minnesota, and then on to an Enbridge affiliate's terminal and tank farm in Superior, Wisconsin. The proposed project includes approximately 300 miles of new pipeline in Minnesota. The project will use a 24-inch-diameter pipeline from North Dakota to Clearbrook and a 30-inch-diameter pipeline from Clearbrook to the Wisconsin terminal. The project will also include construction of a new oil terminal with two 150,000 barrel tanks and pump station (Clearbrook West), just west of the existing terminal and storage tanks in Clearbrook and a pipeline inspection gauge launcher and receiver types and mainline valve facilities at Pine River, Minnesota.

If a route permit is issued for the preferred route of the Sandpiper pipeline, the L3R pipeline will be adjacent to Sandpiper east of Clearbrook to the Minnesota-Wisconsin border; the existing Line 3 pipeline will be permanently deactivated and remain in place.²¹

Cumulative impacts of high-voltage transmission lines and substations needed to serve proposed L3R pump stations also will be analyzed. Other reasonably foreseeable projects will be identified by searching local land use plans, current permit applications and approved, but not built, projects in the areas of the preferred and alternative routes.

5.0 Special Studies or Research

The EIS will incorporate the results of the following special studies:

1. Sandpiper Pipeline and Line 3 Replacement Projects: Assessment of Accidental Releases: Technical Report
2. Sandpiper Pipeline and Line 3 Replacement Projects: Assessment of Potential Pinhole Release on Groundwater
3. Emergency Response Plan
4. An independent assessment of the technical and economic feasibility of System Alternatives as described above in Section 3.

6.0 Identification of Phased or Connected Actions

The EIS will describe and include the impacts of several new proposed transmission lines that would supply electric power to the new pipeline pump stations for this project. The Sandpiper pipeline will be discussed in how it may be viewed as a phased or connected action based on the construction schedule; however, pursuant to Minnesota Rule 4410.2000, subpart 4, the complete analysis for that project will be conducted separately.

7.0 Government Permits and Approvals

The EIS will identify all known required permits and approvals. Some permit information may be collected and reviewed concurrently with the EIS preparation. However, the EIS will not necessarily contain all the information needed for a decision on the CN and Route Permit. No permits have been designated to have all information developed concurrently with the preparation of this EIS per Minnesota Rule 4410.2100, subpart 6(C), nor will any require a record of decision pursuant to Minnesota Rule 4410.2100, subpart 6(D).

²¹ See Chapter 6 of the Line 3 Replacement Route Permit Application to the Minnesota Public Utilities Commission.

Table 2 provides a list of known federal, state and local approvals, certifications and financial assistance required for the project.

TABLE 2 Permits and Approvals Required			
Unit of Government	Type of Application	Status	Reason Required
US Army Corps of Engineers (USACE) – St. Paul District and MPCA	Section 10/404 Individual Permit and associated state 401 Individual Water Quality Certification	Application submitted and determined complete (December 17, 2015)	Authorizes discharge of dredged and fill material into waters of the United States, including wetlands, and crossing of navigable waters of the United States.
US Fish and Wildlife Service (USFWS)	Section 7 ESA Consultation (Federal endangered species)	Consultation ongoing	Establishes conservation measures and authorizes, as needed, take of federally protected species
	Bald Eagle Removal Permit	Pending submittal	Allows for removal of a known bald eagle nest in proximity to construction activities
Minnesota Public Utilities Commission (PUC)	Certificate of Need	Application submitted	Determines need for the pipeline, including questions of size, type and timing
	Route Permit	Application submitted	Authorizes construction of the pipeline along a specific route, subject to certain conditions
Minnesota Department of Natural Resources (MDNR)	License to Cross Public Waters	Application submitted	50 year license that allows for crossing of public waters with proposed utility
	License to Cross Public Lands	Application submitted	50 year license that allows for crossing of public lands with proposed utility
	Water Appropriation Permit – Pipeline and Facilities	Pending submittal	Authorizes withdrawal and use of water from surface or ground sources
	State Endangered Species Permit and Avoidance Plan	Pending submittal	Outlines plans for avoidance, minimization, and mitigation of take of state-listed species
	Osprey Nest Disturbance Permit	Pending submittal	Allows for removal of a known osprey nest
	Fen Management Plan	Pending submittal	Outlines plans for avoidance, minimization, and mitigation of impacts to fens
Minnesota Pollution Control Agency (MPCA)	Clearbrook West Terminal – Option A Registration Permit and New Source Performance Standards Notifications and Submittals	Pending submittal	Authorizes operation of the terminal and compliance demonstration requirement for new sources of air emissions under the CAA
	NPDES Individual Construction Stormwater, Hydrostatic Test,	Pending submittal	Authorizes ground disturbance with approved protection measures to manage soil erosion and stormwater discharge on construction site; discharge of water from

TABLE 2 Permits and Approvals Required			
Unit of Government	Type of Application	Status	Reason Required
	and Trench Dewatering Permit – Pipeline Construction		hydrotesting activities; and removal of water that may accumulate in pipeline trench
	NPDES General Construction Stormwater Coverage – Facilities	Pending submittal	Authorizes ground disturbance with approved protection measures to manage soil erosion and stormwater discharge on construction site
	NPDES General Construction Stormwater Coverage – Pipeyards, Staging Areas, and Contractor Yards	Under review	Authorizes ground disturbance with approved protection measures to manage soil erosion and stormwater discharge on construction site
Minnesota State Historic Preservation Office (SHPO)	Cultural Resources Consultation, NHPA Section 106 Clearance	Consultation ongoing	Ensures adequate consideration of impacts to significant cultural resources
Minnesota Department of Agriculture (MDA)	Agricultural Protection Plan	Consultation initiated	Establishes measures for agricultural protection
Minnesota Department of Transportation (MnDOT)	Road Crossing Permits	Pending submittal	Authorizes crossings of state-jurisdictional roadways
Minnesota Department of Health (MDH) and Wrenshall and Sundruds Court Drinking Water Supply Management Area	Drinking Water Supply Management Area/Wellhead Protection Area Consultation	Consultation only (in progress)	Ensures pipeline construction and operation are compatible with goals of relevant plans
Mississippi Headwaters Board	Local Land Use Review	Consultation only (in progress)	Ensures compatibility with land use plan
Red Lake and Wild Rice Watershed Districts	Watershed District Permits	Pending submittal	Authorizes crossing of legal drain and ditches within watershed
Minnesota Board of Water and Soil Resources/WCA Local Governmental Units	Notice of Intent to Utilize Federal Approvals for Utilities Project Exemption	Notice submitted	Notice of use of exemption required
Local/County	Permits pertaining to off-ROW yard use	Pending submittal	Ensures compatibility with relevant land use plans

8.0 Environmental Impact Statement Schedule

A tentative schedule for development and issuance of the EIS is outlined in Table 3. The schedule is contingent upon a number of factors; unforeseen circumstances may alter it.

TABLE 3 Tentative Schedule	
Scoping EAW and Draft Scoping Decision Document issued	April 11, 2016
Public Scoping Meeting(s)	April-May 2016
Close of Public Comment Period	May 26, 2016
Final Scoping Decision Document	June 2016
EIS Preparation Notice Published (start of 280-day EIS process)	August 2016
Draft EIS Issued for Public Review and Comment	January 2017
Final EIS Issued	May 2017
EIS Adequacy Determination	June 2017

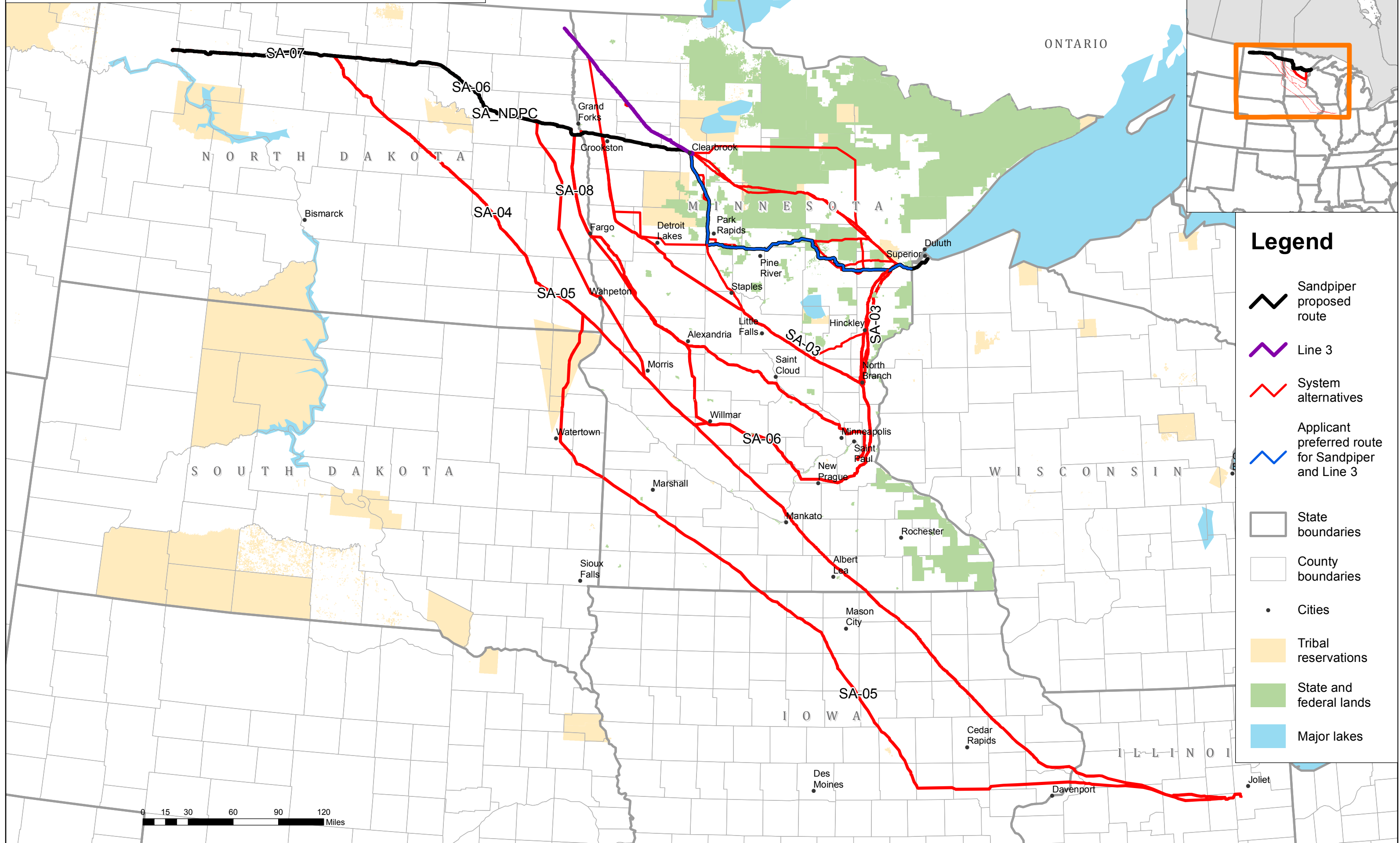
Appendix A

Figures

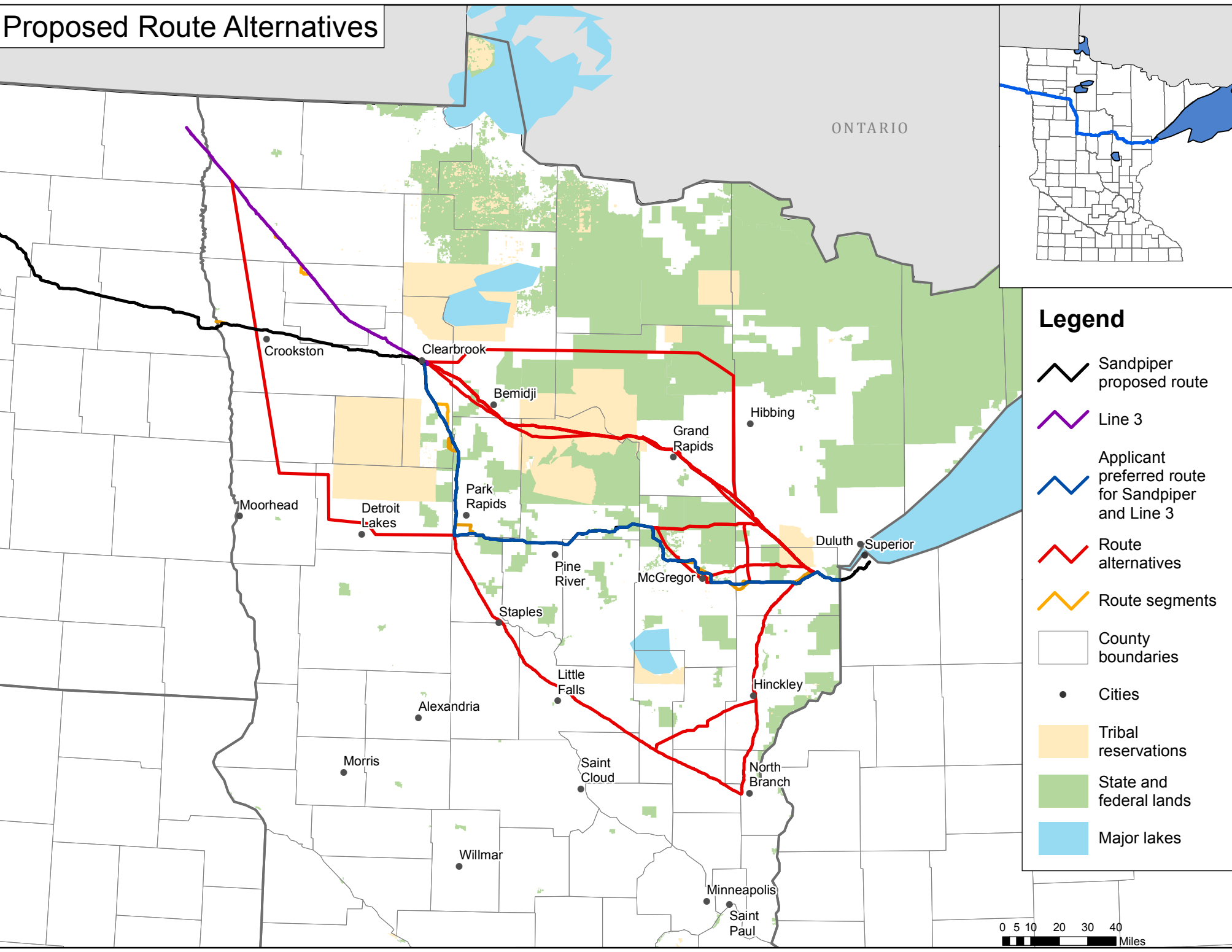
Figure 1: Line 3R Previously Accepted System Alternatives

Figure 2: Line 3R Previously Accepted Route Alternatives

Proposed System Alternatives



Proposed Route Alternatives



Appendix B

Preliminary Table of Contents

A draft outline of the contents for the EIS, subject to change, is provided below:

- I. Cover Sheet
- II. Table of Contents
- III. Acronyms, Abbreviations, and Definitions
- IV. List of Preparers
- V. Executive Summary

- I. General Description of Project
 - A. Project Description
 - B. Project Purpose
 - C. Project Costs
 - D. Project Schedule
 - E. Project Permits and Approvals
 - F. Construction and Operation Methods
 - G. Decommissioning of Line 3 Pipeline
- II. Regulatory Framework
- III. Alternative Screening
 - A. Screening Criteria and Process
 - B. Proposed Alternatives
 - C. Comparison of Alternatives
 - D. Alternatives Dismissed from the EIS and reasoning
 - E. Alternatives Carried Forward
- IV. Route Alternatives
 - A. No Action Alternatives
 - B. Applicant's Preferred Route
 - C. Route Alternatives
- V. Affected Environment, Potential Impacts, and Mitigation Measures
 - A. Human Settlements
 - 1. Planning and Zoning
 - a. County and Local Comprehensive Planning and Zoning
 - b. Overlay Districts
 - c. Existing and Future Land Use
 - d. Watershed Districts/Watershed Management Organizations
 - 2. Noise
 - 3. Aesthetics/Visual Resources
 - 4. Housing
 - a. Displacement
 - b. Property Values
 - 5. Transportation and Public Services
 - a. Roads and Highways

- b. Utilities
 - c. Emergency Services
 - d. Airports
 - 6. Environmental Justice
 - 7. Public Health and Safety
 - a. Existing Contaminated Sites
 - b. Solid Waste
 - c. Waste Disposal
 - d. Hazardous Materials and Hazardous Waste Generation
 - e. Decommissioning
 - f. Spill Analysis and Environmental Impacts
 - i. Large spills
 - ii. Pinhole Leaks
- B. Parks, Trails, and Recreational Areas
 - 1. Federal Recreational Areas
 - 2. State Parks and State Forests
 - 3. Wildlife and Aquatic Management Areas
 - 4. Scientific and Natural Areas
 - 5. State Designated Rivers
 - 6. State Canoe and Boating Routes (Water Trails)
 - 7. State, Regional, and Local Bicycle and Pedestrian Trails
 - 8. Snowmobile Trails
 - 9. Scenic Byways
- C. Cultural Resources
 - 1. Tribal Considerations
 - 2. Archaeological Resources
 - 3. Historic Resources
- D. Economics
 - 1. Agriculture
 - 2. Forestry
 - 3. Mining/Mineral Resources
 - 4. Recreation and Tourism
 - 5. Income
 - 6. Employment
- E. Natural Resources
 - 1. Water Resources
 - a. Groundwater
 - i. Depth to Groundwater
 - ii. Watersheds
 - iii. Aquifers
 - iv. Wells
 - v. Wellhead Protection Areas and Drinking Water Supply Management Areas
 - b. Streams, Rivers, and Floodplains
 - c. Lakes and Other Waterbodies
 - d. Wetlands
 - e. Stormwater, Stormwater Discharge, and Water Appropriation

- 2. Geology and Soils
 - a. Bedrock and Surface Geology
 - b. Mineral Resources
 - c. Estimated Volume and Acreage of Soil Excavation and/or Grading
 - d. Paleontology
 - e. Unconfined/Shallow Aquifers
 - f. Steep Slopes
 - g. Soils and Soil Characteristics
 - h. Erosion and BMPs
- 3. Flora
 - a. Vegetation Cover
 - b. Ecological Classifications
 - c. Sensitive/Native Plant Communities
 - d. Noxious Weeds and Invasive Species
- 4. Fauna
 - a. Habitat/Fragmentation
 - b. Typical Wildlife
 - c. Fisheries
 - d. Trout Streams
 - e. Migratory Birds
- 5. Unique Natural Resources
 - a. State and Federal Threatened and Endangered Species
 - b. Species of Greatest Conservation Need
 - c. Minnesota County Biological Survey
 - d. Sites of Biodiversity Significance
 - e. Wild Rice
- 6. High Consequence Areas and Natural Disaster Hazard Areas as defined by PHMSA
- 7. Air Quality
 - a. Stationary Source Emissions
 - b. Mobile Source Emissions
 - c. Dust and Odors
- E. Climate Change
- F. Construction Impacts
- G. Cumulative Effects
- VI. Comparative Environmental Consequences by Alternative