Fredrikson & BYRON, P.A.

May 26, 2016

VIA ELECTRONIC FILING AND EMAIL

Jamie MacAlister
Environmental Review Manager
Minnesota Department of Commerce
85 7th Place East, Suite 500
St. Paul MN 55101

Re: In the Matter of the Application of North Dakota Pipeline Company LLC for a Certificate of Need for the Sandpiper Pipeline Project in Minnesota MPUC Docket No. PL-6668/CN-13-473; OAH Docket No. 8-2500-31260

In the Matter of the Application of North Dakota Pipeline Company LLC for a Pipeline Routing Permit for the Sandpiper Pipeline Project in Minnesota MPUC Docket No. PL-6668/PPL-13-474; OAH Docket No. 8-2500-31259

Dear Ms. MacAlister:

North Dakota Pipeline Company LLC ("NDPC") respectfully submits these comments in response to the Notice of Availability of Scoping EAW and Draft Scope for Sandpiper Pipeline and Line 3 Replacement Projects and Schedule for EIS Scoping Meetings issued on April 11, 2016.

These comments focus on the Draft Scoping Decision Document ("DSDD") for the Sandpiper Pipeline Project ("SPP" or the "Project"), dated April 8, 2016. The comments address the following:

1. Introduction;

2. Evaluation of Alternatives;

3. Modified Designs and Layouts: System Alternatives;

4. Modified Designs and Layouts: Route Alternatives;

5. SPP's Relationship to the Line 3 Replacement Project;

6. Environmental, Social, and Economic Analyses;

7. Cumulative Effects and Identification of Phased and Connected Actions;

8. Special Studies or Research;

9. Permits and Approvals Required; and

10. Conclusion.

By separate submission, NDPC has also provided updated shapefiles of the SPP Proposed Route and requested route alternatives.

Please feel free to contact Jonathan Minton or me if you have any questions regarding this filing.

Sincerely,

/s/ *Christina K. Brusven*

Christina K. Brusven
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AFFIDAVIT OF SERVICE

In the Matter of the Application of North Dakota Pipeline Company LLC for a Certificate of Need for the Sandpiper Pipeline Project in Minnesota

MPUC Docket No. PL-6668/CN-13-473;
OAH Docket No. 8-2500-31260

In the Matter of the Application of North Dakota Pipeline Company LLC for a Pipeline Routing Permit for the Sandpiper Pipeline Project in Minnesota

MPUC Docket No. PL-6668/PPL-13-474;
OAH Docket No. 8-2500-31259

STATE OF MINNESOTA)
) SS.
COUNTY OF HENNEPIN)

Kristen A. Swenson, of the City of Minneapolis, the County of Hennepin, State of Minnesota, being duly sworn on oath, deposes and states that on the 26th day of May, 2016, she e-filed with the Minnesota Public Utilities Commission the following:

1. North Dakota Pipeline Company LLC's Scoping Comments and related Appendices A through F; and,

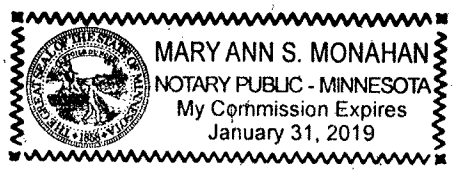
2. Affidavit of Service.

A copy has also been served in accordance with the attached service list of record.

Kristen A Swenson
Kristen A. Swenson

Subscribed and sworn to before me
this 26th day of May, 2016

Mary Ann S. Monahan
Notary Public



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NORTH DAKOTA PIPELINE COMPANY LLC'S SCOPING COMMENTS

I. INTRODUCTION

North Dakota Pipeline Company LLC ("NDPC") respectfully submits its comments to provide suggested clarifications, corrections, and changes to the Draft Scoping Decision Document ("DSDD") for the Sandpiper Pipeline Project ("SPP" or the "Project"). NDPC believes that the DSDD is largely consistent with the applicable statutes, rules, and Commission Orders. Its suggested changes are provided to ensure the environmental impact statement ("EIS") provides the Commission with appropriate information for consideration in its certificate of need ("CN") and route permit decisions for SPP. These comments are organized as follows:

I. Introduction
II. Evaluation of Alternatives
III. Modified Designs and Layouts: System Alternatives
IV. Modified Designs and Layouts: Route Alternatives
V. SPP's Relationship to the Line 3 Replacement Project ("L3R")
VI. Environmental, Social, and Economic Analyses
VII. Cumulative Effects and Identification of Phased and Connected Actions
VIII. Special Studies or Research
IX. Permits and Approvals Required
X. Conclusion

To assist the reviewing agencies in responding to these Comments, Appendix A contains a proposed Final Scoping Decision Document that provides redlined suggested changes to the DSDD.

II. EVALUATION OF ALTERNATIVES

The EIS will review and compare NDPC's Proposed Route with other alternatives proposed for the Project. As discussed below, NDPC's route selection process is comprehensive and dynamic. NDPC's current Proposed Route includes over 50 major and minor changes responding to landowner, environmental, and agency concerns. NDPC will continue to evaluate alternatives proposed during the scoping period to determine whether they should also be incorporated into NDPC's Proposed Route.

Not all proposals are viable. The Minnesota Environmental Policy Act ("MEPA") and the Environmental Quality Board's ("EQB") rules specifically contemplate that not every "alternative" proposed during scoping will be studied in the EIS. Specifically, MEPA states that the EIS should discuss "*appropriate* alternatives to the proposed action."[1] As stated in the

[1] Minn. Stat. § 116D.04, subd. 2a (emphasis added). *See also Friends of the Riverfront v. DeLaSalle High Sch.*, No. A06-2222, 2007 WL 4110617 (Minn. Ct. App. Nov. 20, 2007) ("Because none of the alternative options is consistent

DSDD, Minn. R. 4410.2300(G) provides further clarification that an alternative may be excluded from the EIS if:

- it would not meet the underlying need for or 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.

In order to establish whether a proposed alternative should be further evaluated in the EIS, it is important that the criteria used to evaluate those alternatives are supported by the record and consistent with a "description of the project in detail" as required under MEPA.[2] For example, a proposal that does not meet the need for or purpose of the Project should not be studied in the EIS.

Further, because this EIS will take the place of the alternative form of MEPA environmental review traditionally completed as part of the pipeline route permit proceeding, Section 3.1 should mention that route alternatives should also be evaluated for consistency with the applicable criteria found in Minn. R. 7852.1400.

Section 3.1.1 of the DSDD provides additional discussion of the criteria the agencies plan to use to determine whether an alternative included in the scope of the EIS could be eliminated from further EIS analysis. Specifically, the DSDD states: "The purpose of the project is to transport growing crude oil production from the Bakken Formation in North Dakota to the Superior, Wisconsin, terminal and then connect to various other pipelines expanding access to refinery markets in the US Midwest and beyond."[3] Significantly, as currently drafted, this formulation of purpose and need for the Project is incorrect and incomplete and should be revised in the Final Scoping Decision Document ("FSDD").

The following Sections II.A.-C. provide additional detail regarding the Project's purpose and need, which was developed through the Project's Certificate of Need application ("CN Application"), testimony, briefing, Administrative Law Judge's ("ALJ") findings, and Minnesota

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with the definition of the project, however, we conclude that the city was not required to consider any of them."); *Mayo Found. v. Surface Transp. Bd.*, 472 F.3d 545 (8th Cir. 2006) (stating that an agency is "not required . . . to consider alternatives that would frustrate the very purpose of the project. . . . [A]n alternative is unreasonable if it does not fulfill the purpose of the project.").

[2] Minn. Stat. §116D.04, subd. 2a.

[3] DSDD at 6 (*citing* the CN Notice Plan).

Public Utilities Commission ("Commission") orders. The proposed FSDD attached as Appendix A provides a more comprehensive purpose and need statement in Section 3.1.1.

A. The Project's Purpose and Need have Already Been Well-Developed in These Dockets.

NDPC submitted its CN Application for the Project on November 8, 2013. Since that time, a significant amount of additional information has been added to the record, much of it related to the Project's purpose and need. For example, NDPC submitted a revised CN Application, direct, rebuttal, surrebuttal, and sur-surrebuttal testimony, proposed findings of fact, and post-hearing briefing. In addition, DOC-DER and other parties for and against the Project submitted testimony analyzing the Project's purpose and need identified by NDPC. Put simply, the record is already replete with information about the Project's purpose and need. Considering this evidence, the Administrative Law Judge summarized the Project as follows:

> The Project consists of a pipeline and associated facilities that will transport crude oil from NDPC's Beaver Lodge station, south of Tioga, North Dakota, to Clearbrook, Minnesota, and then on to an existing Enbridge terminal in Superior, Wisconsin.[4]

The ALJ then recommended that the Commission grant a CN for the Project, which the Minnesota Public Utilities Commission ("Commission" or "MPUC") did based on all of the evidence before it. Based on the Commission's own prior Order Granting a Certificate of Need with Conditions, and as described in more detail below, the Project's purpose is to provide additional pipeline capacity out of the Williston Basin region in a way that is operationally integrated with NDPC's existing pipeline system in order to meet customer demand and safely and efficiently transport crude oil.

In its January 11, 2016 Order Lifting Stay, Rejoining Need and Routing Dockets, and Referring for Contested Case Proceedings, the Commission ordered that the existing CN record be incorporated into the record of the joint proceedings and asked the ALJ to "limit further record development in the certificate of need matter as necessary to avoid duplication." As such, per the Commission's order, the record evidence related to the Project purpose and need already in this proceeding should be adopted. NDPC recognizes that the EIS will develop additional information related to the Project. However, this information will be related to the impacts of the Project and reasonable alternatives on a variety of different resources. It is not

[4] ALJ Findings ¶ 121; *see also* Order at 6 ("According to the Applicant, the purpose and need for the Sandpiper pipeline project is to transport growing supplies of crude oil produced in North Dakota to terminals in Clearbrook, Minnesota and Superior, Wisconsin. The Company developed the project after consulting with shippers and refiners in the region. The Company concluded that the project is the most prudent and cost-effective solution to meet its shippers' near-term transportation needs while providing a long-term capacity solution.").

the role of the EIS to redefine the Project's purpose and need or to make any determination on whether the Project is needed.

B. Purpose: Provide Additional Pipeline Capacity out of the Williston Basin Region

1. Additional Pipeline Capacity is Needed Because of Oil Production in the Williston Basin Region.

The Project will provide additional needed pipeline capacity out of the Williston Basin Region. The Williston Basin, which includes the Bakken and Three Forks formations, is one of the major sources of unconventional crude oil supply within the United States.[5] The crude oil being produced in the Bakken region is addressing a corresponding rise in demand from refineries in the Midwest and the East Coast for crude oil produced in North America.[6] The transportation of crude oil to regional refineries by pipeline is an essential component of the supply chain that delivers refined petroleum products to Midwestern consumers. In fact, pipelines deliver almost all of the crude oil processed by Midwestern refineries.[7]

The additional pipeline capacity to be provided by the Project will help alleviate the lack of crude oil pipeline infrastructure from the Williston Basin to premium refinery and marketing hubs. Providing additional pipeline capacity serves the public's interest by providing improved, cost-effective, and safe refinery access to an abundant, secure, and reliable source of domestic crude oil. That will, in turn, allow the refineries to satisfy local and national consumer demand for refined products.[8] Despite a recent downward trend in crude oil prices, the record evidence establishes that there is still a need for the Project:[9]

> The NDPC analysis shows that even at sustained prices as low as $40 per barrel, North Dakota production rates would remain above 700,000 bpd for the majority of the next 15 years and the proposed pipeline would be filled to capacity until late in the forecast period.[10]

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[5] Revised CN Application at Section 7853.0240 page 3.

[6] Revised CN Application at Section 7853.0240 page 5.

[7] Revised CN Application at Section 7853.0240 page 5.

[8] Revised CN Application at Section 7853.0240 page 7.

[9] Crane Surrebuttal at 9:209-10 ("If WTI was $40 per barrel, North Dakota production rates would remain about 700,000 barrels per day for the majority of the next 15 years."); Earnest Surrebuttal at 1:24-25 ("Significant volatility in crude oil prices has long been a component of the business environment of the oil industry."); Earnest Surrebuttal at 4:83-84 ("Even at significantly lower crude oil production in the Williston Basin from today's production levels, the volume of Bakken crude oil that must be processed somewhere remains enormous.").

[10] ALJ Findings ¶ 163.

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> Even if one assumes historically low prices for oil, in the near-term there will be sufficient crude oil supplies in North Dakota to fully utilize the existing and proposed pipelines, and thousands of rail cars each year.[11]

2. Absent Additional Pipeline Capacity, Shippers will Continue to be Subject to Apportionment, which has Negative Impacts on Minnesota and the Region.

The record establishes that most of the crude oil transported by the Project will be processed and consumed in the Midwest:

> It is likely that most of the crude oil transported by the Project will be processed in Midwestern refineries. Likewise, it is likely that most of the refined products will be consumed by people in the Midwest. The Project will allow [Petroleum Administration for Defense District ("PADD") II] refineries to satisfy local and national consumer demand for refined products in Minnesota, neighboring states, and beyond.[12]

The record further establishes that refiners in the Midwest have a demand for the type of crude oil to be transported by the Project: "Refiners in [PADD II] are using large volumes of light, sweet crude oil to make refined products."[13] Further, refiner demand for light crude oil exceeds the supply currently available for transport via pipeline.[14] As a result, without the additional pipeline capacity to be provided by the Project, shippers will continue to be subject to apportionment, meaning that they will not receive all of the crude oil they require by pipeline. Specifically:

> Oil pipelines are required by law to operate as common carriers. As a common carrier this means that the carrier is required to accept all requests for service (a "nomination") from shippers that were submitted in accordance with the carrier's Rules and Regulations, as approved by the Federal Energy Regulatory Commission ("FERC") under the Interstate Commerce Act.

[11] ALJ Findings ¶ 171.

[12] ALJ Findings ¶¶ 524-25.

[13] ALJ Findings ¶ 151.

[14] ALJ Findings ¶ 155 ("Neil Earnest testified credibly that demand for light crude oil among refineries in the Upper Midwest, Lower Midwest, Ontario, and the East Coast of the United States exceeds available supply.").

> Apportionment occurs when nominations for shipments exceed the available capacity of the pipeline. In that circumstance, the available pipeline capacity is allocated to the shippers on a fair and equitable basis as set forth in the tariff(s) approved by the FERC.[15]

The ALJ specifically found:

> [S]hipper demand for pipeline capacity on the NDPC System continues to far outpace the available capacity. When the demand for transportation service exceeds available pipeline capacity, the NDPC System goes into apportionment. The NDPC System to Clearbrook was in constant apportionment between 2006 and 2012, intermittent apportionment during 2013, and back into apportionment in 2014. When a pipeline is apportioned, the available pipeline capacity is allocated to the shippers on the basis of the applicable tariffs. In such circumstances, shippers must either reduce their expected volume of crude oil or find alternative ways to transport these commodities. When apportionment is announced, refineries . . . are unable to obtain all of the crude oil originally directed to them. Apportionment has an immediate negative impact on producers, shippers, and refiners.[16]

The NDPC system was in constant apportionment in 2015 and to date in 2016. Significantly, if the Project is constructed as proposed, it "is expected to eliminate the apportionment of light crude oil that is delivered to refineries in Minnesota and Wisconsin."[17]

[15] Steede Direct at 3:91-98.

[16] ALJ Findings ¶¶ 192-97; *see also* Earnest Rebuttal at 3:76-85 ("All else equal, high apportionment levels will make it more difficult for the Minnesota refiners to actually ship their desired Bakken crude oil nomination volume for delivery to Clearbrook. To the extent that they cannot ship all of the Bakken crude oil under their own name, they must purchase the Bakken crude oil from others at a higher price. Notwithstanding Northern Tier Energy's assertion in its FERC complaint that it had not been subject to apportionment, I note that the most recent apportionment levels on the existing North Dakota Pipeline Company LLC ("NDPC") Line 81 are extraordinarily high and well above the apportionment levels experienced prior to the FERC proceeding. In October 2014, nominations for Line 81 totaled 5,659,121 bbl/d, versus a capacity of just 210,000 bbl/d. Clearly, there is currently intense competition for the available capacity of Line 81.").

[17] ALJ Findings ¶ 200.

3. There is Significant Commercial Support for the Project.

There is significant commercial support for the Project as proposed. The prior record evidence in the CN proceeding established that the Project has contractually committed shippers, and that such contractual commitments are sufficient to render the Project viable. These contractual commitments are based upon the Project as it has been proposed and would not apply to a pipeline that does not meet the purpose and need identified for this Project.

Considering all of this evidence, the Commission has already recognized that the capacity to be provided by the Project is needed, and that denying a CN for the Project would have negative impacts on the region:

> [D]enying the certificate of need would likely harm the future adequacy, reliability, and efficiency of energy supply to Applicant's customers, and the region. The record demonstrates that the pipeline is already 70% subscribed and that the remainder of its capacity is reasonably expected to be absorbed by shippers without binding contracts. The record also demonstrates that the current production volumes supporting these contracts – and the need for petroleum products undergirding them – will continue through at least 2040. Without this pipeline capacity, the crude supplies it would carry will instead be transported more expensively and less efficiently by rail and truck.[18]

C. Purpose: Be Operationally Integrated with Existing Pipeline Systems.

In addition to providing additional pipeline takeaway capacity from the Williston Basin Region, the Project must be operationally integrated with NDPC's existing pipeline system at Clearbrook in order to make deliveries to refineries in Minnesota. Specifically, through its interconnection at Clearbrook, the Project will interconnect with the Minnesota Pipe Line Company ("MPL") System to provide deliveries to the Minnesota refineries. Through its interconnection at Superior, the Project will interconnect with the Enbridge Mainline System, which delivers crude oil supplies to refineries in Minnesota, Wisconsin, the rest of PADD II, and beyond.

1. The Project Must Make Deliveries at Clearbrook to Make Use of Existing Infrastructure and Provide Back-Up Transportation Service to Minnesota Refineries.

First, the Project must interconnect with existing pipeline facilities at Clearbrook, Minnesota to make deliveries at Clearbrook and provide back-up service to the existing Line 81.

[18] Order at 27-28.

NDPC's existing Line 81 currently delivers crude oil to the MPL System, which then transports the crude oil to refiners in the Minneapolis/St. Paul area. The Project will provide alternative service for deliveries to MPL's facilities during routine maintenance activities on NDPC's existing Line 81, or to satisfy additional demand from refineries connected to the Minnesota Pipe Line System.[19] Minnesota's refiners rely heavily on NDPC's Line 81 and its affiliated Enbridge Mainline System for deliveries at Clearbrook, as these deliveries provide the majority of the crude oil required by Minnesota's refineries.[20] For example, in 2012, Enbridge facilities delivered approximately 79 percent of the crude oil refined in Minnesota, 85 percent of the crude oil refined in Wisconsin, and 75 percent of the crude oil refined in the greater Chicago area.[21]

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[19] The MPL System currently has four pipelines and can transport approximately 465,000 bpd of crude oil. It is the primary source of crude oil supplies for the two Minnesota refineries. (http://www.minnesotapipeline.com/minnesota-pipe-line-reliability-project/.) After MPL's Reliability Project is completed, capacity on its Line 4 will increase from 165,000 to approximately 350,000 bpd. *Id.*

[20] Revised CN Application at Section 7853.0240 page 2; Steede Rebuttal at 10:280-98 ("Sandpiper is an expansion of Line 81. Based on the Project's design at the Clearbrook West Terminal and the existing Clearbrook Terminal, deliveries can occur to Minnesota Pipe Line Company from either pipe. Minnesota Pipe Line Company only serves the two Minnesota refineries. Minnesota Pipe Line Company's existing pipelines, tanks, and other equipment are already located at Clearbrook. The Project design most efficiently utilizes Minnesota Pipe Line Company's existing facilities while providing for both continued deliveries to Minnesota Pipe Line Company via Line 81 and flexibility for additional deliveries via the Project. A second pipe may not completely eliminate the impact of all planned and unplanned outages, but it would allow NDPC the opportunity to mitigate their impact. In the case of planned outages, a second pipe allows us to continue service during that outage and potentially increase the flow on the operational pipe during the outage on the other line. In the case of the May 2013 four-day unplanned outage, if Sandpiper existed, NDPC still would have been able to deliver to Clearbrook under an adjusted schedule, significantly minimizing the impact of that unplanned event. In the example of losing a pump on Line 81, NDPC would have the option to make operational changes to Sandpiper to mitigate the impact of losing a pump on Line 81."); *see also* Eberth Direct at 3:71-87 ("While the Project provides a much needed increase in capacity from Beaver Lodge, North Dakota, to Clearbrook, Minnesota, and then to Superior, Wisconsin, the Project has also been designed to enhance the reliability of the existing North Dakota Pipeline System, including deliveries from the existing Line 81 which provides deliveries to the Minnesota Pipe Line System, serving the two Minnesota refineries. The Project will provide redundant service[20] to Line 81 by being able to deliver Bakken crude oil to the Minnesota Pipe Line System connection in Clearbrook, MN in the event that Line 81 is not in service. Additionally, once the Project is placed in service, the existing interconnection at Clearbrook, Minnesota, between NDPC's Line 81 and the Enbridge Mainline System will be terminated and all Line 81 volumes intended for delivery to Superior, Wisconsin, will be transported via the Project, rather than the Mainline System. As Mr. Glanzer explains in his testimony, the extension of the Project from Clearbrook to Superior was designed to reduce possible apportionment to NDPC shippers trying to deliver to the Enbridge Mainline at Clearbrook. These important interconnections and changes at Clearbrook will provide further enhancements to the reliability of the crude oil pipeline network in Minnesota."); ALJ Findings ¶ 132 ("[I]n the event of an outage on either Line 81 or the Sandpiper Line, shipments of oil could proceed from North Dakota to Clearbrook on the other, operating pipeline.").

[21] *E.g.*, *In the Matter of the Application of Enbridge Energy, Limited Partnership for a Certificate of Need for the Line 67 Station Upgrade Project – Phase 2*, Revised Application for a Certificate of Need, Section 7853.0240 page 10 (Aug. 16, 2013).

Considering the evidence, the ALJ found that the Project's interconnection at Clearbrook is an important part of the Project's purpose:

> From Beaver Lodge, the Project parallels NDPC's Line 81 pipeline to Clearbrook, Minnesota. This is significant for two reasons. By paralleling Line 81 into Clearbrook, Minnesota, NDPC is able to offer both redundant service to its shippers from Beaver Lodge to Clearbrook and expanded service into the Clearbrook Terminal. NDPC's customers, who today ship crude oil between Beaver Lodge and Clearbrook on Line 81, will be able to nominate to the combined NDPC System that includes Line 81 and the Project, increasing the shipping capacity into Clearbrook by 225,000 bpd.[22]
>
> ***
>
> Leveraging the existing resources of the Clearbrook Terminal and nearby infrastructure also adds considerable value. The Clearbrook Terminal provides interconnections between the NDPC System, the Enbridge Mainline System, and the MPL System. There are existing tanks, interconnections, emergency response facilities, trained personnel, and other needed infrastructure in this area.[23]
>
> The MPL system services the two Minnesota refineries: St. Paul Park Refining Company; and Flint Hills. MPL pipelines, tanks, and other equipment are located at Clearbrook.[24]

In addition, absent a Clearbrook interconnection, the Project would not fulfill its purpose or meet shipper needs: "[C]omitted shippers were offered the option under the contract to select Clearbrook as a receipt point for their committed volumes. . . . [V]olume commitments for service to Clearbrook were in fact made."[25]

Considering all of the evidence in the record, the ALJ specifically found that the Project's interconnection at Clearbrook "benefits the reliability of crude oil supplies to Minnesota."[26]

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[22] ALJ Findings ¶ 207.

[23] ALJ Findings ¶ 209.

[24] ALJ Findings ¶ 210.

[25] MacPhail Rebuttal at 17:481-83.

[26] ALJ Findings ¶¶ 296-99 ("The redundant service provided by the Project reduces economic risks to shippers and refiners in the event Line 81 is out of service. The Project's interconnection at the proposed Clearbrook West Terminal, thereby creating a redundant service option for deliveries to the MPL System, benefits the reliability of crude oil supplies to Minnesota. In the event that a capacity restriction were to occur on NDPC's existing Line 81,

The Commission generally concurred with the ALJ's findings, and issued a CN for the Project as proposed (which included an interconnection at Clearbrook).

2. The Project Must Make Deliveries at Superior to Make Use of Existing Infrastructure and Allow for Deliveries to Refineries in Wisconsin, the Midwest, and Beyond.

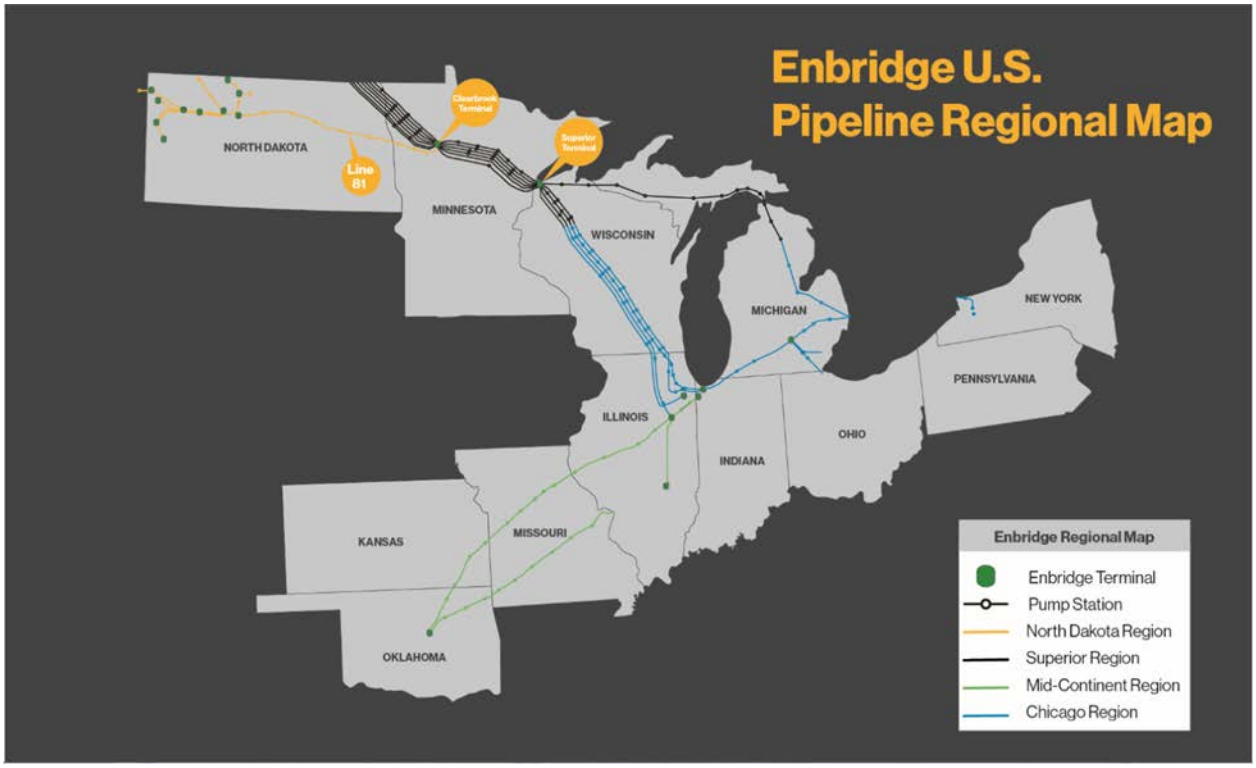
After interconnecting with existing MPL facilities at Clearbrook, the Project will deliver to the existing terminal facility in Superior, Wisconsin, which is owned and operated by an NDPC affiliate. From Superior, shippers will have access to refinery markets directly or indirectly served via the Enbridge Mainline System or through other interconnecting pipelines.[27]

The Enbridge Mainline System consists of pipelines in North Dakota, Minnesota, Wisconsin, Illinois, Indiana, Michigan, and New York. Together with its market extension pipelines, the Enbridge Mainline System comprises more than 15,000 miles of liquid petroleum pipelines, constitutes the world's longest crude petroleum and petroleum liquids pipeline network, and is an essential component of meeting energy needs in the Midwest and beyond. For example, in 2014, Enbridge transported more than 74 percent of the crude oil imported from Canada and consumed in the Midwest. An overview map of Enbridge's U.S. liquids pipeline system, with which NDPC is affiliated (and its pipeline system shown as the North Dakota Region), is provided below in Figure 1. As shown on Figure 1, the existing NDPC and Enbridge systems both have interconnections at Clearbrook in order to deliver crude oil volumes to MPL, who then redelivers such volumes to directly serve the Minnesota refineries.

Bakken oil would still be able to be delivered to the MPL System, including Minnesota's two refineries, through the proposed Sandpiper line. The Sandpiper Project improves the reliability of light crude oil supplies for Minnesota, a useful hedge against unexpected outages in Minnesota's oil market and other oil markets.").

[27] Revised CN Application at Section 7853.0240 page 2.

Figure 1: Enbridge U.S. Pipeline Regional Map



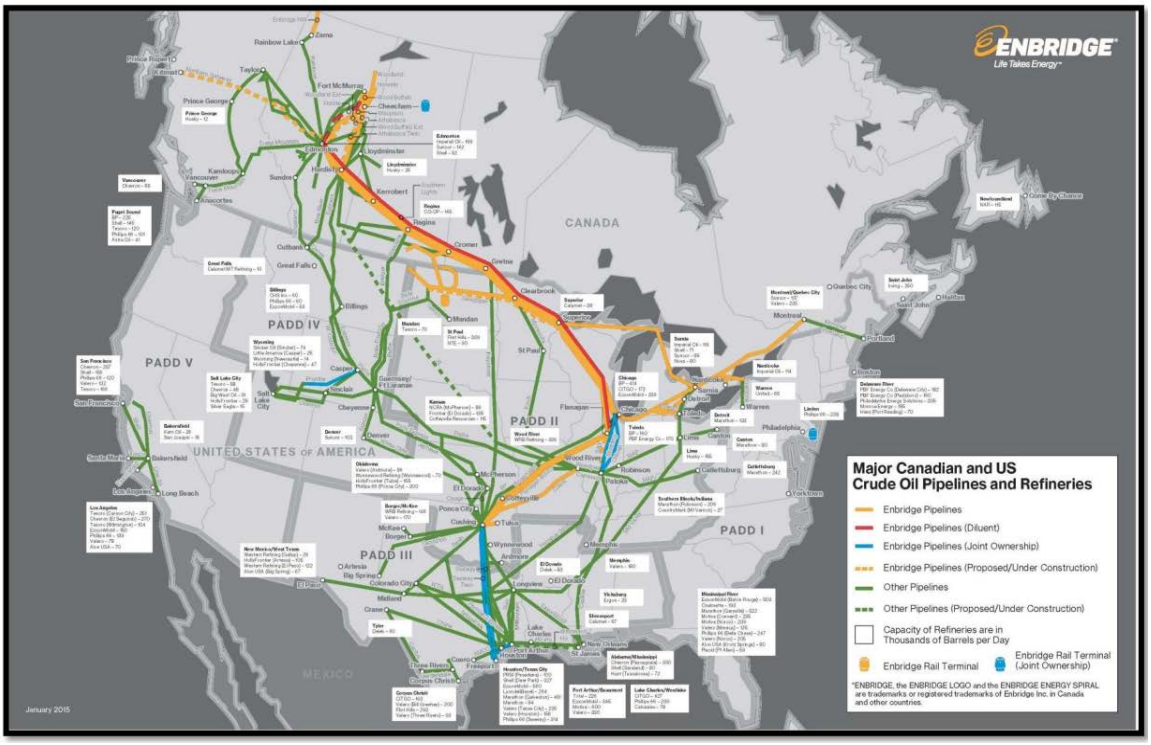
If the Project is not integrated with existing NDPC and Enbridge pipeline systems, it would fail to provide deliveries to the refineries proposed to be served by the Project. As shown in Table 8.3.E-2 (from the L3R CN Application) below, the Enbridge Mainline System directly or indirectly serves refineries with a total capacity of more than 8 million bpd. Because of the high degree of interconnectivity of the crude oil market, Minnesota would be negatively impacted by crude oil supply disruptions in neighboring states and the PADD II region as a whole.[28] Moreover, being operationally integrated with existing pipeline systems will also allow the Project to make deliveries efficiently and with the use of existing resources, thus, limiting Project impacts.[29] As proposed in the Sandpiper Pipeline Project, NDPC plans to extend its pipeline system from Clearbrook to Superior, Wisconsin in order to provide its shippers access to numerous refinery markets throughout the Midwest and beyond via interconnections with the Enbridge Mainline System and other nonaffiliated pipelines. See Figure 2 below. For example, the ALJ specifically found:

[28] Earnest Direct at 5-6.

[29] Eberth Direct at 4:122-27 ("The Project is designed to efficiently utilize existing NDPC and Enbridge pipeline facilities, enhance the reliability of deliveries to the Minnesota Pipe Line system and increase pipeline capacity for crude oil deliveries from the Williston Basin to Enbridge's existing hub at Superior, Wisconsin. Connections at Clearbrook and Superior are essential to optimize the performance of the overall pipeline system and to enhance the reliability of deliveries to Midwest refineries, including those located in Minnesota.").

The Project is also designed to efficiently deliver Bakken crude oil to the Enbridge Mainline System in Superior, Wisconsin. NDPC proposes that if the proposed pipeline is placed into service, all of the Bakken crude oil that is destined for Superior, Wisconsin, will be transported on the new segment of the Project between Clearbrook and Superior. Such a change would eliminate bottlenecks that are occurring now in Clearbrook and would avoid future apportionment of Bakken crude oil on the Enbridge Mainline System into Superior, Wisconsin. Downstream of the Superior Terminal, NDPC provides shippers with access to an extensive network of existing pipelines and delivery points in the Upper Midwest, Lower Midwest, Ontario, Quebec, mid-continental United States, and the Gulf Coast.[30]

Figure 2: Pipelines and Refinery Map



[30] ALJ Findings ¶¶ 211-12.

Table 8.3.E-2
Refineries Served Directly or Indirectly by Enbridge Systems

Refinery	Location	Capacity (barrels/day)	Connected Directly from Enbridge	Connected Indirectly
PADD II - Minnesota and Wisconsin				
Northern Tier Energy	St. Paul Park, Minnesota	89,500		Yes
Flint Hills Resources	Rosemount, Minnesota	270,000		Yes
Calumet	Superior, Wisconsin	38,000	Yes	
Total		**397,500**		
PADD II - Illinois and Indiana				
ExxonMobil	Joliet, Illinois	238,600	Yes	
CITGO	Lemont, Illinois	172,000	Yes	
BP	Whiting, Indiana	413,500	Yes	
Total		**824,100**		
PADD II - Kentucky and Southern Illinois and Indiana				
Marathon	Robinson, Illinois	212,000		Yes
WRB Refining	Wood River, Illinois	336,000		Yes
Marathon	Catlettsburg, Kentucky	242,000		Yes
Total		**790,100**		
PADD II - Michigan and Ohio				
BP-Husky Refining	Toledo, Ohio	135,000	Yes	Yes
PBF Energy	Toledo, Ohio	160,000		Yes
Marathon	Detroit, Michigan	123,000	Yes	Yes
Marathon	Canton, Ohio	80,000		Yes
Husky	Lima, Ohio	155,000		Yes
Total		**653,000**		
PADD I - Pennsylvania				
United Refining	Warren, Pennsylvania	65,000		Yes
Ontario				
Imperial Oil	Nanticoke, Ontario	113,500	Yes	
Imperial Oil	Sarnia, Ontario	119,000	Yes	

Table 8.3.E-2
Refineries Served Directly or Indirectly by Enbridge Systems

Refinery	Location	Capacity (barrels/day)	Connected Directly from Enbridge	Connected Indirectly
Shell Canada	Corunna, Ontario	77,000	Yes	
Suncor	Sarnia, Ontario	85,000	Yes	
Nova Chemicals (Canada)	Corunna, Ontario	80,000	Yes	
Total		**474,500**		
PADD III - Cushing				
CVR Energy	Coffeyville, Kansas	115,000	Yes	
WRP Refining	Borger, Texas	146,000		Yes
Phillips 66	Ponca City, Oklahoma	200,000		Yes
HollyFrontier	El Dorado, Kansas	138,000	Yes	
NCRA	McPherson, Kansas	86,000	Yes	
HollyFrontier	Tulsa, Oklahoma	155,300	Yes	
Valero	Ardmore, Oklahoma	86,000		Yes
Valero	Sunray, Texas	156,000		Yes
CVR Energy	Wynnewood, Oklahoma	70,000		Yes
HollyFrontier	Artesia, New Mexico	105,000		Yes
Total		**1,257,300**		
PADD III – United States Gulf Coast				
PRSI	Pasadena, Texas	100,000	Yes	
Deer Park Refining	Deer Park, Texas	327,000	Yes	
ExxonMobil	Baytown, Texas	560,500	Yes	
Lyondell Basell	Houston, Texas	263,800	Yes	
Phillips 66	Sweeny, Texas	247,000	Yes	
Valero	Houston, Texas	88,000	Yes	
Valero	Texas City, Texas	225,000	Yes	
Marathon	Texas City, Texas	451,000	Yes	
Marathon	Texas City, Texas	84,000	Yes	

Table 8.3.E-2 Refineries Served Directly or Indirectly by Enbridge Systems				
Refinery	**Location**	**Capacity (barrels/day)**	**Connected Directly from Enbridge**	**Connected Indirectly**
Total	Port Arthur, Texas	225,500		Yes
ExxonMobil	Beaumont, Texas	344,600		Yes
Motiva	Port Arthur, Texas	600,300		Yes
Valero	Port Arthur, Texas	330,000		Yes
Total		**3,816,700**		

In sum, the Project must connect at both Clearbrook and Superior to meet shipper needs, fulfill NDPC's contractual obligations under the transportation services agreements, and utilize existing pipeline infrastructure.[31] A pipeline that does not do so would not fulfill the Project's purpose and need.

III. MODIFIED DESIGNS AND LAYOUTS: SYSTEM ALTERNATIVES

Once Section 3.1.1 is updated to more comprehensively and accurately describe the purpose and need for the Project, the System Alternatives discussed in Section 3.4 of the DSDD should be reevaluated. Consistent with this underlying purpose and need, an alternative should be studied in the EIS only if it:

- Provides additional pipeline capacity out of the Williston Basin Region;
- Makes deliveries at Clearbrook; and
- Makes deliveries at Superior.

A proposed "alternative" that does not meet each of the criteria above would not meet the underlying purpose of and need for the Project, and would not be constructed. Studying "alternatives" that do not meet the Project purpose and need is inconsistent with MEPA and would unnecessarily require additional resources from Minnesota's agencies, the applicant, the intervenors, and the public. Specifically, Table 1 of the DSDD lists the following "alternatives" that do not meet the Project purpose and need:

- SA-03: does not make deliveries at Clearbrook.

[31] *See*, *e.g.*, Palmer Direct at 5:143-46 ("The Project provides a direct link between Bakken production and MPC's extensive Midwest refining, transportation and marketing network, and does so utilizing a portion of Enbridge's existing pipeline infrastructure.").

- SA-04: does not make deliveries at Clearbrook or Superior.
- SA-05: does not make deliveries at Clearbrook or Superior.
- SA-06: does not make deliveries at Clearbrook.
- SA-07: does not make deliveries at Clearbrook.
- SA-08: does not make deliveries at Clearbrook or Superior.
- SA-03-as amended L3- RA-10: does not provide additional pipeline capacity from the Williston Basin Region or make deliveries at Clearbrook. [32]

There is already extensive record evidence that the "system alternatives" do not meet the Project's need.[33] For example, the ALJ found as follows:

- "The SA-03 Alternative offers less reliable service options to Minnesota refineries than the proposed Project. This is because the SA-03 Alternative does not connect to Clearbrook or the MPL System."[34]

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[32] In its Comments and Recommendations discussing route alternatives received during the Project's initial scoping period, dated July 16, 2014, the Department of Commerce, Energy Environmental Review and Analysis ("DOC-EERA") agreed that the "system alternatives" did not meet the Project's need and were not appropriate for further study:

> Because the proposed system alternatives are not alternative routes for meeting the purpose of the project as identified in the permit application, EERA does not believe that these alternatives are appropriate for further consideration. . . .
>
> ***
>
> In addition, several system alternatives suggest placing the pipeline adjacent to or within the interstate rights-of-way. Federal Highway Administration and MnDOT right-of-way accommodation policies prohibit longitudinal placement of utility facilities within the fenced area of the Interstate Highway System. Currently a 345 kV High Voltage Transmission Line permitted by the Commission is being built along I-94 between Moorhead and Monticello, Minnesota, limiting the opportunity for further longitudinal placement adjacent to that highway's right-of-way.

Comments and Recommendations at 16.

[33] Notably, none of the conclusions below relate to the environmental impacts of the Project or any "alternatives" – they relate solely to the purpose and need for the Project. Accordingly, these findings continue to be valid and may serve as a basis to exclude the "system alternatives" from further review in the EIS.

[34] ALJ Findings ¶ 374.

- Moving the proposed Clearbrook Terminal would result in pressure cycling on Line 81.[35] "Pressure cycling following from changes in the operating pressure of a pipeline – as if one was repeatedly turning the pipeline 'on' and 'off.' . . . . Pressure cycling causes greater pipeline fatigue and impacts pipeline integrity. Pressure cycling has the potential to create and accelerate the growth of cracking features in the walls of a pipeline. . . . . Pressure cycling fatigue would prompt approximately 310 integrity digs on Line 81 over the next 7-year period, at a cost of more than $100 million."[36]

- "[N]one of the System Alternatives purports to deliver to the terminals in Clearbrook, Minnesota, and Superior, Wisconsin, under the terms and conditions of the executed TSAs. . . . Each of the System Alternatives includes a significant element of regulatory and financial risk. None of the entities that proposed a System Alternative is itself in the oil or pipeline industry, or offered into the record engineering or operational assessments in support of their proposals. No party, participant, or commentator stated that it would develop one of the System Alternatives if the Commission signaled its willingness to grant it a CN. Each entity that proposed a System Alternative assumed that the differences between the Alternative proposal, and the Project proposed by NDPC, would be willingly accepted by NDPC in return for a CN. This assumption is not confirmed by the hearing record. Given the significant commercial and regulatory challenges involved with developing an infrastructure project that crosses Minnesota, it is likely that none of the System Alternatives would be developed in the near-term. NDPC is under no legal duty to make new pipelines available to oil shippers in North Dakota or to develop additional pipeline capacity for refineries. NDPC does not operate as a 'public utility' with a duty to meet existing needs for energy resources within a particular 'service territory.' Because there is no 'duty to serve,' the Commission's authority to insist that energy-delivering infrastructure be made available to specified communities, in a particular way, is different in the context of crude oil pipelines than it is with electricity transmission lines and certain natural gas pipelines. The hearing record makes clear that having the support of a willing pipeline developer matters – particularly if Minnesota is to obtain pipeline proposals that reflect sound financial, engineering, and environmental practice."[37]

[35] ALJ Findings ¶¶ 376, 378.

[36] ALJ Findings ¶¶ 379-82.

[37] ALJ Findings ¶¶ 506-14.

The Commission adopted these findings[38] and made additional findings of its own:

- "The Commission concurs with the ALJ's analysis and conclusion that the Applicant's proposed Project best addresses its articulated need for the Sandpiper project – to transport light crude oil from the Bakken formation in North Dakota and Montana to an interconnection with the Applicant's facilities near Clearbrook, and then to continue to existing facilities in Superior. The Commission has also analyzed the alternatives considered by the Applicant and proposed by the parties to address Applicant's need for the Sandpiper project. The Commission agrees with the ALJ that none of the system alternatives considered in the certificate of need proceedings, with the possible exception of [SA-03, as modified] . . . meet the Applicant's commercial need for the Project and the region's need. Nor do the truck, train, or no-build alternatives considered by the ALJ."[39]

- "[A] project must be more than hypothetical; it must have a reasonable prospect of coming to fruition. As discussed in length above and in the ALJ Report, there is no record evidence that any of the remaining alternatives has a meaningful likelihood of being constructed."[40]

- "Applicant witness Mr. Steede testified that SA-03 would present several challenges, but the primary concern would be pressure cycling. Pressure cycling is a concern because it increases integrity risks for the pipeline by causing repeated change in the operating pressure of a pipeline, which increases the likelihood of more cracks and other fatigue-related conditions sooner and more frequently than would otherwise be the cause."[41]

To the extent additional "alternatives" have been or will be proposed that do not meet the Project's purpose and need, such proposals are not appropriate alternatives to the Project. Because they are not appropriate alternatives to the Project, the Final Scoping Decision Document should note that they were considered and eliminated from further study in the EIS.

IV. MODIFIED DESIGNS AND LAYOUTS: ROUTE ALTERNATIVES

NDPC's route selection process is comprehensive and dynamic. The Proposed Route was developed based on a multi-disciplinary team approach in which extensive analysis and

[38] Order at 23.

[39] Order at 28.

[40] Order at 28.

[41] Order at 42.

evaluation work has been performed, using expertise in pipeline routing, federal and state regulations, environmental planning, biology, land use, socioeconomic impact assessment, and pipeline construction. In addition, NDPC gathered valuable input from local government officials and permitting agencies with knowledge of the surrounding areas. The SPP May 2016 Proposed Route was developed and refined in response to discussions with landowners and agencies that have occurred since NDPC filed its applications for the Project in 2013. Throughout the permitting process, NDPC has continued to work extensively with landowners, state agencies, and other stakeholders along its Proposed Route to address their concerns.

Through those discussions and listening sessions, NDPC has modified its Proposed Route to further avoid and minimize landowner and environmental impacts associated with the Project. These ongoing efforts have resulted in a number of additional suggested route alternatives, as well as adjustments that modify previously submitted route alternatives. For example, NDPC incorporated several of its previously recommended route alternatives in the SPP EAW Proposed Route, rendering further study of these segments as "alternatives" unnecessary. Appendix B contains a table and map illustrating the changes NDPC has made to its Proposed Route to address landowner, agency, and environmental impacts. In total, NDPC has made over 50 centerline adjustments and incorporated over 20 route alternatives to further avoid and minimize potential impacts from the Project. The current Proposed Route has been improved through landowner input, with over 94% of landowners signing an easement.

Table I summarizes the additional route alternatives that NDPC requests be included for further study in the EIS and route permit hearings.

Table I: Summary of NDPC's Requested Route Alternatives for Further Study

Route Alternative	Explanation
Red Lake Fen	NDPC requests that the Red Lake Fen Route Alternative be incorporated into NDPC's Proposed Route for further study in the EIS. Supporting data has been resubmitted in Appendix C.
L3-RA-05 Amended Route Alternative	NDPC requests that the L3RA-05 Amended Route Alternative be studied in the EIS. Supporting data has been resubmitted in Appendix C.
L3-RA-08 Amended Route Alternative	NDPC requests that L3RA-08 Amended Route Alternative be incorporated into NDPC's Proposed Route for further study in the EIS, as it reflects further input from area landowners. Supporting data is included in Appendix C.
Blandin	NDPC requests that the Blandin Route Alternative be studied in the EIS. Supporting data is included in Appendix C.

Appendix C includes supporting information for each of the Table 1 route alternatives requested for inclusion in the SPP Proposed Route or for further study in the EIS. As required in Minn. R. 7852.1400, Appendix C includes maps, a description of the route alternative, its purpose, and an analysis of the impacts of the route alternatives compared to the corresponding section of the SPP EAW Proposed Route.

NDPC has also made minor centerline shifts since submitting its SPP EAW Proposed Route. These centerline adjustments are described in Appendix D. In addition, NDPC has identified a number of locations along its SPP EAW Proposed Route where an expanded area, beyond the 750 feet contemplated in the DSDD, is required to accommodate additional temporary workspace. Appendix E contains a table and maps showing each of these expanded route width locations.

NDPC respectfully requests that (i) the Red Lake Fen Route Alternative and the L3RA-08 Route Alternative described in Appendix C, centerline adjustments listed in Appendix D, and the expanded route widths listed in Appendix E be incorporated into the SPP Proposed Route and (ii) NDPC's SPP Proposed Route, as updated in this filing, and the L3-RA-05 Amended Route Alternative and Blandin Route Alternative described in Appendix C be included for further study in the EIS.

Appendix A, NDPC's proposed FSDD, lists the RAs that NDPC requests be included for further analysis in the EIS, as well as RAs other parties have suggested that remain relevant based on the SPP Proposed Route.

V. SPP'S RELATIONSHIP TO L3R

Section 4.2 of the DSDD summarizes L3R's relationship to the SPP. In light of the fact that the L3R and SPP MPUC regulatory processes now appear to be on a similar timeline, Enbridge studied the issue of which pipeline should be installed first if they are constructed during the same season and determined that L3R should be constructed first between Clearbrook, Minnesota and Superior, Wisconsin.

Because construction of the SPP tanks at the proposed Clearbrook West Terminal has a longer projected construction timeline than the mainline pipe construction, constructing L3R in the first trench could facilitate a slightly earlier in-service date for L3R. Shortening the time during which the existing Line 3 continues to operate addresses the integrity concerns on that line and avoids additional excavations and repairs associated with its continued operation. Accordingly, Enbridge plans to construct L3R using the SPP centerline and construction footprint design (refer to EAW Figures 6-2a to 6-2f) between Clearbrook and the Wisconsin border. While the EAW presented quantitative workspace requirements and resource impacts assuming that SPP would be constructed before L3R for the purposes of addressing the cumulative impacts analysis for L3R and SPP, in the scenario where L3R is constructed first, the L3R impacts from the existing Clearbrook Terminal to the Wisconsin border would be the same as the impacts described for SPP in the L3R EAW. This is also consistent with the descriptions of the "one pipe" scenario presented in the L3R Route Permit Application.[42]

[42] *See* L3R Route Permit Application Section 7.0.

NDPC requests that the FSDD and EIS reflect that between Clearbrook and the Wisconsin border, SPP will be constructed second in the centerline shown for L3R in the EAW. Data required to review construction sequencing and centerline placement in the EIS has already been provided in the EAWs and associated Route Permit Applications.

VI. ENVIRONMENTAL, SOCIAL, AND ECONOMIC ANALYSES

NDPC reviewed the planned methodologies and data sources as proposed and/or described in the DSDD's section on detailed environmental, social, and economic analysis.[43] Overall, the discussion appears to be comprehensive and consistent with the applicable statutory and rule requirements. NDPC provides a number of minor comments and recommendations intended to clarify or further develop the proposal contained in the DSDD. Because many of the suggestions are simply additions or corrections to applicable data sources, those changes are reflected in the proposed FSDD contained in Appendix A. The remaining items are discussed below.

A. Regional Analysis Area and Alignment Analysis Area.

Section 4.3 of the DSDD states that publicly available data will be used to compare routes and that the scale of analysis will include a regional analysis area ("RAA") and an alignment analysis area ("AAA"). DOC-EERA's Scoping Comments dated November 13, 2015 included an Attachment 1A that provided additional detail regarding the data sources and analysis to be used for the RAA and AAA. NDPC recommends that the FSDD include a similar appendix. (See Appendix F of these scoping comments for a copy of DOC-EERA's previous Attachment 1A).

B. Cultural Resources.

1. Scope and Methodologies.

NDPC recommends revising the Cultural Resources section to clarify the intended scope and provide additional detail regarding the proposed methodologies for evaluating cultural values and treaty areas. This section currently states:

> Cultural resources include archaeological resources, historic resources, cultural values (including Traditional Cultural Properties [TCPs]) 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

[43] DSDD at TOC, § 4.4.

> cultural resources will be evaluated across the preferred route and route alternatives.[44]

Cultural resources, as defined in the state and federal guidelines, are typically clearly delineated places that can be evaluated and managed. NDPC suggests that DOC-EERA clarify how cultural values and treaty areas will be evaluated, similar to the clarification provided for evaluation of archaeological resources and historic resources.

With regard to cultural values, the description notes that these may include TCPs, but does not describe what other resources may be evaluated. NDPC understands that TCPs are specific locations that can (i) represent cultural values, (ii) be assessed as cultural resources using the state and federal guidelines, and (iii) be managed when met with a well-defined project or undertaking. DOC-EERA should explain how potential impacts to the broad concept of "values" would be further evaluated in the environmental document. DOC-EERA should also explain how potential impacts to treaty areas would be evaluated. For both, DOC-EERA should explain the methods it will use to identify cultural values and treaty areas and how it will collect information to evaluate potential impacts to these resources as defined.

2. Data Sources.

NDPC recommends three changes to this section. First, the current description of the cultural resource field survey reports is inaccurate. The DSDD reads as follows:

> 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.[45]

The cultural resources surveys do not "include information regarding . . . properties of cultural value" as distinct from archaeological sites or historic resources. In the final scoping

[44] DSDD at 21.

[45] DSDD at 21-22.

decision, NDPC suggests this scope section be revised to more accurately represent its survey efforts.

Second, as noted above, it is unclear how DOC-EERA intends to scope and collect information on cultural values or treaty areas. NDPC suggests that its process for identifying and evaluating cultural values and treaty areas be defined and the sources intended to be used be listed.

Third, NDPC notes that because DOC-EERA plans to use NDPC's field survey results for cultural resources along the Proposed Route and plans to use SHPO records of known sites along route alternatives, the number of previously unidentified cultural resource sites will be higher along the Proposed Route than along the route alternatives and will leave the impression that the route alternatives may have lesser impacts; however, this is artificial due to comparisons of dissimilar data sets. The comparison between the Proposed Route and each route alternative will, therefore, not be equitable, and results will need to be extrapolated to comparative densities along both routes. NDPC suggests that this qualifier be noted in the final scoping decision. Alternatively, DOC-EERA could use SHPO records of known sites to compare the Proposed Route and alternatives and note the additional survey data available for the Proposed Route.

C. Rare and Unique Natural Resources.

DOC-EERA states that federally listed threatened and endangered species data would be collected from the U.S. Fish & Wildlife Services ("USFWS") Information, Planning, and Conservation System ("IPaC") at the county level. NDPC collected its information on listed species and critical habitat by consulting the USFWS Field or Regional Office's county lists. NDPC has observed that differences can occur between Field or Regional Office county lists and IPaC information, and suggests that the final scoping decision recommend collecting listed species information directly from, or confirming with, the Field or Regional Office county lists to be consistent with NDPC methodologies and data.

Also, the DSDD does not state an intention to use NDPC's field survey results for protected flora resources along the Proposed Route. NDPC suggests that this information be included, similar to the way DOC-EERA is planning to use NDPC's cultural resources field survey information. As with the cultural resources field survey information, the number of identified biological resource sites will be higher along the Proposed Route than along the route alternatives where no survey work has been completed, which will convey an artificially greater impact. The comparison between the Proposed Route and each route alternative will therefore need to be extrapolated to comparative densities along both routes. NDPC suggests that this qualifier be noted in in the final scoping decision.

VII. CUMULATIVE EFFECTS AND IDENTIFICATION OF PHASED OR CONNECTED ACTIONS

To the extent necessary, NDPC notes that the cumulative impacts of L3R and SPP should address the scenario of L3R being constructed on the SPP centerline and utilizing the SPP construction footprint, then the SPP construction would follow afterwards using the L3R centerline and its construction footprint, as discussed in Section V above.

VIII. SPECIAL STUDIES OR RESEARCH

Section 5.0 identifies several "Special Studies or Research" items that will be completed and/or incorporated into the EIS.

As to the Emergency Response Plan (#3), the source of the study or information is not clear. NDPC recommends that DOC-EERA incorporate information provided by NDPC on its Integrated Contingency Plan ("ICP") and Emergency Response Action Plan(s) ("ERAP"). The ICP and ERAP(s) meet or exceed all local, state, and federal requirements, including United States Department of Transportation, Pipeline Hazardous Material Safety Administration ("PHMSA"), pipeline regulations specified in 49 C.F.R. Parts 194 and 195, as well as applicable Occupation Safety and Health Administration, United States Coast Guard, and American Pipeline Institute national technical standards. NDPC submits that conducting a special study on the Emergency Response Plan is an unnecessary duplication of an already heavily regulated body of work. That said, NDPC encourages the incorporation of components of its robust emergency response planning documents in the EIS.

As to the "independent assessment of the technical and economic feasibility of System Alternatives as described above in Section 3," the source of the proposed assessment or information therein is not clear and should be identified. Further, while the DSDD identifies that "alternative sites are not being considered" (Section 3.2), in section 3.4 the DSDD indicates that several so-called "System Alternatives" will be the subject of this study. For the reasons explained above, many of these purported alternatives should not be studied further.

IX. PERMITS AND APPROVALS REQUIRED

Section 7.0 of the DSDD should be revised to note that the information required for the CN and Route Permit Applications is being developed concurrently with the EIS. Currently, section 7.0 of the DSDD states, in relevant part, that "[n]o permits have been designated to have all information developed concurrently with the preparation of the EIS . . . ." However, this misstates the applicable law. Minn. Stat. § 116D.04 states only that "final decisions shall be made by the appropriate governmental units on those permits which were identified as required and for which information was developed concurrently with the preparation of the environmental impact statement." Similarly, Minn. Rule 4410.2100, Subp. 6(C) requires identification of all permits for which "information" was "gathered concurrently with EIS

preparation." [46] Neither the statute nor the rule requires that "all information" be developed concurrently.

In addition, the Minnesota Court of Appeals held that "an EIS must be completed as part of the certificate of need proceedings."[47] As interpreted by the Court of Appeals, MEPA requires that the information developed for and contained in the EIS be utilized in the permit decision-making process.[48] Similarly, the Commission itself ordered that the EIS "address issues related to the certificate of need and routing permit dockets."[49] The DSDD itself acknowledges, "[s]ome permit information may be collected and reviewed concurrently with the EIS preparation" for the CN and Route Permit.

Thus, pursuant to the plain language of statute and rule, both the C and route permit should be identified as permits for which "information will be gathered concurrently with EIS preparation."

X. CONCLUSION

NDPC respectfully requests that DOC-EERA and the Commission incorporate into the Final Scoping Decision Document the additional information, corrections, and clarifications identified in these comments.

Dated: May 26, 2016

Respectfully submitted,

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[46] If either the legislature or the EQB meant these provisions to apply only to permits for which *all* information was developed concurrently with the EIS, they would have stated this express limitation. *See* Minn. Stat. § 645.08(3) (establishing the presumption that the legislature restricts "general words" in their meaning by "preceding particular words").

[47] *In re North Dakota Pipeline Company LLC*, 869 N.W.2d 693, 698 (Minn. Ct. App. 2015).

[48] *Id.* at 698-99.

[49] Order Lifting Stay, Rejoining Need and Routing Dockets, and Referring for Contested Case Proceedings, Ordering ¶ 4.

Appendix A

NDPC's Proposed Final Scoping Decision Document

North Dakota Pipeline Company's Proposed ~~Draft~~Final Scoping Decision Document for Sandpiper Pipeline Project PUC Docket NO. PL-6668/CN-13-473 and ~~PUC Docket NO. PL-6668/~~PPL-13-474

Minnesota Department of Commerce
Energy Environmental Review and Analysis
Draft April 8, 2016

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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 a Certificate of Need (CN)[5] and a Route Permit[6] for the North Dakota Pipeline Company LLC's (NDPC's or Applicant's) proposed Sandpiper Pipeline Project (referred to as "Sandpiper" or "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.

[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].

On January 11, 2016, the PUC — the RGU for this EIS[7] — issued an order authorizing Minnesota Department of Commerce – Energy Environmental Review and Analysis (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~~Minnesota Department of Natural Resources (MDNR), and the Minnesota Pollution Control Agency (MPCA) to meet the requirements of the MEPA and Chapter 4410 of the Minnesota Rules.

1.1 Purpose of the ~~Draft~~Final 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)~~MDNR and the MPCA have prepared this ~~Draft~~Final Scoping Decision Document (~~DSDD~~FSDD) for the proposed Sandpiper 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

NDPC proposes to construct and operate the Sandpiper project, a new ~~612~~616-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 ~~Energy, LLC~~ affiliate's terminal and tank farm in Superior, Wisconsin. The proposed project includes approximately 303 miles of new pipeline in Minnesota. As proposed, 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 (PIG) launcher and receiver ~~types~~traps and mainline valve facilities at Pine River, Minnesota.

The proposed Sandpiper pipeline route is shown on Figures 1 and 2 in Appendix A.

[7] See Minn. R. 4410.4400, subp. 24.

[8] The Scoping EAW is available here: http://mn.gov/commerce.

1.3 Regulatory Process

To construct and operate a crude oil pipeline greater than 6 inches in diameter in Minnesota, NDPC must apply for, and receive, a CN approval and a Route Permit from the PUC. Other permits required from state and federal agencies are listed in Section 7 of this document.

The proposed project has gone through a lengthy and complex regulatory process to date as summarized in Section 1.4.[9] Some of the "System Alternatives" and alternative routes proposed during this previous regulatory process ~~are~~were included in the ~~draft scope of this EIS~~DSDD; however, new alternatives ~~can be~~have been added and previous alternatives ~~could be~~ removed as a result of ~~this~~the scoping process.

1.4 Procedural History

The Applicant filed CN and Route Permit applications on November 8, 2013. The Applicant filed revised applications on January 31, 2014, reflecting changes in NDPC's ownership and modifications to the proposed route to address concerns raised in Carlton County. Both the November 2013 and January 2014 applications contained an Environmental Information Report (EIR) identifying impacts of the Applicant's preferred route. The PUC accepted the Sandpiper Route Permit Application as complete on February 11, 2014, and the CN Application as complete on March 19, 2014.

Between March and August 2014, DOC-EERA and PUC staff held public information and scoping meetings and numerous agency meetings. Following these meetings, the Applicant further modified the route to address landowner, environmental, engineering, design, or constructability concerns with the original proposal. On August 25, 2014, the PUC accepted 53 route alternatives, including all the alternatives proposed by the Applicant, SA-03 as modified, and seven expanded route widths for referral in the Route Permit proceedings.[10] On October 7, 2015, the PUC bifurcated the CN and routing permit proceedings and stayed further action on the route permit until a decision on the CN had been made.

On April ~~23~~24, 2015, Enbridge submitted CN and Route Permit Applications for the Line 3 Replacement (L3R) Project. Consistent with the Applicant's notification to the PUC on May 30, 2014, in the Sandpiper route proceeding, the L3R route parallels the Sandpiper route between

[9] For the complete record, see e-dockets (https://www.edockets.state.mn.us/EFiling/edockets/searchDocuments.do?method=showeDocketsSearch&searchType=new) using docket number PPL-13-474 (route) and CN-13-473.

[10] See PUC Order *Accepting Alternative Route and System Alternatives for Evidentiary Hearing Development, Requiring Notice, and Setting Procedures* PL-6668/PPL-13-474; PL-6668/CN-13-473 (Document ID: 20148-102500-02).

Clearbrook, Minnesota, and Superior, Wisconsin. The PUC accepted the L3R Applications as complete on July 1, 2015.

~~The PUC stayed the CN and route proceedings while the Court of Appeals considered the implications of the earlier PUC decision to bifurcate the proceedings. When the Court of Appeals issued its decision on September 14, 2014, the PUC lifted the stay.~~
On August 3, 2015, the PUC issued two orders related to Sandpiper. It issued an Order Granting a Certificate of Need with Conditions and an Order Authorizing Recommencement of Routing Permitting Proceeding and Providing Direction for the Scope of the Comparative Environmental Analysis.

On September 14, 2015, the Minnesota Court of Appeals found that in a bifurcated pipeline CN proceeding, where the route permit proceeding occurs subsequent to the CN proceeding, MEPA requires the PUC to prepare an EIS before making a final decision.

On January 11, 2016, the PUC issued its written order establishing a process for conducting the Sandpiper EIS and the joint CN/Route Permit hearings.[11] In relevant part, the order (1) lifted the stay of the CN docket, (2) rejoined the CN and Route Permit dockets, (3) ordered preparation of an EIS covering need and routing issues pursuant to Minnesota Statutes Chapter 116D and Minnesota Rules Chapter 4410, and (4) authorized DOC-EERA to administer the EIS process in consultation with PUC's Executive Secretary, and enter into an interagency agreement with MPCA and MDNR.

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

[11] See PUC Order *Lifting Stay, Rejoining Need and Routing Dockets, and Referring for Contested Case Proceedings* PL-6668/PPL-13-474; PL-6668/CN-13-473 (Document ID: 20161-117136-01).

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 comment periods as well as informal discussions with tribes, the public and various state and federal agencies. Relevant information from the L3R 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 scoping review and comment period on the DSDD ~~will be~~were conducted in accordance with Minnesota Rule 4410.2100. A 45-day scoping comment period[13] ~~will begin~~began on April 11, 2016 when the Notice of Availability for the DSDD ~~is~~was published in the *Minnesota Environmental Quality Board (EQB) Monitor*. Twelve scoping meetings ~~will be~~were held during the 45-day comment period, which ended on May 26, 2016, providing an opportunity for the public and federal, state, tribal and local government agencies to comment on the DSDD.

DOC-EERA staff ~~will prepare~~prepared a Comment Summary Report and ~~propose~~proposed a Final Scope based on comments received during the process. The Final Scoping Decision Document (FSDD) ~~will identify~~identifies 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~~was circulated with ~~this DSDD~~the publication of the DSDD in accordance with Minnesota Rule 4410.1500, and also made available for public review in county libraries along the proposed route and route alternatives. 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, as further amended by this FSDD, reflects the updated route for which the Applicant is seeking a Route Permit.

[12] See Minn. R. 4410.2100, subp. 1.

[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.

3.0 Alternatives

3.1 Evaluation Criteria for Analysis of Alternatives

3.1.1 Minnesota Rules for Alternatives Analysis in an EIS

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.

The alternatives that ~~will be considered~~were proposed during the ~~DEIS~~scoping process are identified in Section 3 (Tables 1 and 2) of this document. The public ~~may~~had the ability to comment on these alternatives and propose additional alternatives during the 45-day comment period on the DSDD. DOC-EERA ~~will apply~~applied the criteria in Minnesota Rule 4410.2300(G) in determining whether ~~additional~~all of the alternatives ~~not already~~ identified in Section 3 ~~will~~would be included for analysis in the DEIS. DOC-EERA also considered whether the requirements of Minn. R. 7852.1400 were satisfied.

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.

3.1.2 Criteria for Evaluating Alternatives included in an EIS

All alternatives that will be carried forward for consideration in the EIS ~~will be~~are 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~~used 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 transport growing crude oil production from the Bakken Formation in North Dakota to ~~the~~two major interconnecting points as contracted by NDPC's shippers for the Sandpiper Pipeline Project. The location and purpose of these interconnecting points are as follows.

   - The Sandpiper Pipeline Project must connect to Clearbrook, Minnesota. This is a major interconnecting point, as NDPC is contractually required to make deliveries to the interconnecting pipeline facilities of Minnesota Pipe Line Company, for ultimate deliveries to the Minnesota refineries.
   - The Sandpiper Pipeline Project must connect to Superior, Wisconsin~~,~~ ~~terminal and then~~ . This is a major interconnecting point, as NDPC is contractually required to make deliveries to the affiliated Enbridge Superior Terminal, where NDPC's shippers can connect to various other affiliated and nonaffiliated pipelines expanding access to refinery markets in the US Midwest and beyond.[14]

2. The alternative must be reasonable.

   DOC-EERA will 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 the Applicant's proposed project.

[14] ~~Certificate of Need Notice Plan, Enbridge, June 7, 2013;~~Sandpiper CN Application, part 7853.0240, p.~~ii.~~ 1-2.

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 (NRHP) eligibility, impacts within the project corridor, Traditional Cultural Properties, and 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 Pipeline and Hazardous Materials Safety Administration (PHMSA) criteria for hazardous liquid pipelines. Focus on unusually sensitive ecological resources.[15]

4. The alternative would have similar environmental benefits but substantially less adverse economic, employment or sociological impacts compared to the applicant's proposed route.

[15] *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.

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.[16] Populated areas include 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").

3.2 Alternative Sites

Other oil pipelines (existing or newly constructed) may be used to meet the demand for oil delivery. Three potential alternative pipelines are noted by NDPC in its CN Application: the Plains Bakken North Pipeline Project, High Prairie Pipeline Project, and Koch Pipeline Company Dakota Express Pipeline. The High Prairie Pipeline Project does not appear to be proceeding.[17] Further, in January 2014, Koch Pipeline Company announced that their project will not move forward[~~17~~18] and therefore it is not considered a viable alternative pipeline system.

These pipelines, and others that may have been approved since the CN Application was filed will be evaluated as alternatives in the EIS.

[16] *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.

[17] Eberth Direct at 11:344-45.

[~~17~~18] See http://www.bloomberg.com/news/articles/2014-01-22/koch-ends-plans-for-pipeline-to-illinois-from-bakken.

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.

As proposed, the project ~~would transport 25,000~~will have an annual average capacity of 250,000 barrels per day (bpd) from Beaver Lodge to Berthold, North Dakota; 225,000 bpd from ~~Beaver Lodge to Superior, and up to 150,000~~Berthold to Clearbrook, Minnesota; and 375,000 bpd from Clearbrook to Superior, Wisconsin.[19] To carry an equivalent amount of oil on unit trains would require several additional unit trains per day. NDPC estimates that more than 2,000 rail tank cars would be required to transport an equivalent amount of oil on a daily basis, given the number of cars loading, unloading and making return empty trips per day.[~~18~~20]

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.

To transport an equivalent amount of oil by truck as the proposed project would require expansion of existing or construction of new truck loading terminal facilities in Beaver Lodge and Berthold, North Dakota, and construction of new unloading facilities in Clearbrook, Minnesota, and Superior, Wisconsin. Substantial upgrades and ongoing maintenance may also be required to the connecting roadways along the truck transportation routes.[~~19~~21]

[19] Sandpiper CN Application, part 7853.0230, p. 6.

[~~18~~20] "Report on the Impact of Crude Oil-By-Rail and the 'No-Action' Scenario for the Sandpiper Pipeline Project in Minnesota." See eDockets, Document ID No. 20148-102135-05, p. 20.

[~~19~~21] See Sandpiper CN Application, part 7854.0540, p. 6-9.

3.4 Modified Designs and Layouts: System Alternatives

Six System Alternatives were developed during the previous round of scoping meetings for the project and ~~approved~~accepted by the PUC for further evaluation. One additional System Alternative was proposed through the scoping process. These System Alternatives are shown in Table 1: Description of System Alternatives and Appendix A, Figure 1, and also described in detail below. ~~The EIS will further evaluate alternatives.~~

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

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	810	3	34

	it turns generally east and follows SA-Applicant to Superior, WI.			
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~~Line 3 and go south to follow SA-03, turns east to Park Rapids and follows SA-03 AM south to Milaca, MN where it follows Hwy-23 to Hinckley, MN and then follows SA-03AM to the point where it rejoins the Applicant's Proposed 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~~

~~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~~

Sandpiper is a new pipeline proposed to deliver Bakken crude oil to existing pipeline facilities in Clearbrook, Minnesota and Superior, Wisconsin. None of the System Alternatives transports crude oil to Clearbrook, Minnesota and Superior, Wisconsin. Therefore, these System Alternatives do not meet the purpose or need of the project as identified in Section 3.1 of this FSDD, and these System Alternatives will not be carried forward for further evaluation in the EIS. Instead, the EIS will describe why the System Alternatives were eliminated from further review.

3.5 Modified Designs and Layouts: Route Alternatives

Route alternatives identified during the previous round of scoping meetings for the project will be included in the alternatives list in the initial screening as alternatives for consideration. These route alternatives can be found in detail in the Sandpiper Route Summary Report.[~~20~~22]

3.5.1 Description of Applicant's Preferred Route and Associated Facilities

The Applicant has applied to the PUC for a CN and Route Permit to construct a new 616-mile pipeline to transport crude oil from its Beaver Lodge Station south of Tioga, North Dakota, to a new terminal facility at Clearbrook, Minnesota, and then on to an Enbridge ~~Energy, LLC~~ affiliate terminal in Superior, Wisconsin. Approximately 303 miles of the new pipeline would be located in Minnesota. See Appendix A, Figure 2, of this document for a map of NDPC's preferred route.

The pipeline route proposed by NDPC begins at Beaver Lodge Station south of Tioga, North Dakota and enters the state of Minnesota at the Minnesota-North Dakota border approximately 2 miles south of Grand Forks, North Dakota, and follows ~~Enbridge Energy Partners'~~ NDPC's existing pipeline right-of-way (ROW) to Clearbrook, Minnesota. From Clearbrook the pipeline generally follows the existing Minnesota Pipe Line Company ROW south to Hubbard, Minnesota. From Hubbard the route proceeds east traversing undeveloped areas and follows portions of existing ROWs for electric transmission lines and railroads. The pipeline crosses the Minnesota-Wisconsin border approximately 5 miles east-southeast of Wrenshall, Minnesota, and terminates in Superior, Wisconsin. NDPC's proposed pipeline route would cross portions of Polk, Red Lake, Clearwater, Hubbard, Wadena, Cass, Crow Wing, Aitkin, and Carlton counties.

The pipeline between ~~North~~the Minnesota-North Dakota border and Clearbrook would be composed of 73 miles of 24- inch-diameter pipeline with an annual average capacity of 225,000 bpd. The pipeline between Clearbrook and Superior would be composed of 230 miles of 30-inch-diameter pipeline with an annual average capacity of 375,000 bpd.

NDPC is requesting a route width of 750 feet (375 feet on each side of the pipeline centerline) except in the expanded route width areas already accepted by the PUC for further

[~~20~~22] See Sandpiper Alternative Routes Summary Report [http://mn.gov/commerce/energyfacilities/documents/33599/Sandpiper%20Alternative%20Summary%20Report-JULY-16-2014.pdf].

[~~21~~23] See Sandpiper Alternative Routes Summary Report [http://mn.gov/commerce/energyfacilities/documents/33599/Sandpiper%20Alternative%20Summary%20Report-JULY-16-2014.pdf].

review for the project.[~~21~~23] The same route width of 750 feet will be applied to other alternatives being evaluated as part of the Route Permit section of the EIS.

Sandpiper would also entail construction and operation of the following associated facilities and infrastructure in Minnesota:

- Clearbrook West Terminal: A new terminal facility would be constructed near Clearbrook. A terminal facility is an aboveground facility with large tanks for the temporary containment of crude oil. A new Clearbrook Pump Station would be located within the footprint of the new Clearbrook West Terminal.
- Pine River Facility ~~improvements~~: ~~A~~ PIG launcher and receiver traps would be installed at the ~~existing~~ Pine River Facility, along with a mainline valve, metering equipment, and an electrical service building.
- Mainline valves: The project would include ~~21~~32 mainline ~~safety~~ valves. These valves are located along the pipeline to monitor and ~~manually~~remotely 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: NDPC would temporarily use off-ROW areas (e.g., rail sidings) for pipe and material storage and to receive rail deliveries. 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. NDPC 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.

3.5.2 Route Alternatives

In its August 25, 2014, order, the PUC accepted 53 Sandpiper route alternatives recommended by DOC-EERA in its July 17, 2014, Sandpiper Alternative Routes Summary Report with comments and recommendations, and also accepted system alternative SA-03

[~~21~~23] See Sandpiper Alternative Routes Summary Report [http://mn.gov/commerce/energyfacilities/documents/33599/Sandpiper%20Alternative%20Summary%20Report-JULY-16-2014.pdf].

as modified by DOC-EERA for evaluation in the environmental document. The PUC also accepted the seven expanded route width areas recommended by DOC-EERA and the expanded route width for Carlton County 2 requested by NDPC. See DOC-EERA's website for a description of the alternatives.[~~22~~24] As part of the scoping process, an additional 9 route alternatives ~~are shown in Appendix A, Figure 2.~~were proposed for either Sandpiper or L3R and are applicable to the Sandpiper route. Of the total route alternative suggested, NDPC has incorporated 27 route alternatives into its Sandpiper preferred route. DOC-EERA has further identified a number of route alternatives that can be scoped out of the EIS based on information developed through the scoping process.

~~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.~~
Table 2 reflects the alternative routes that have been proposed for Sandpiper. Table 2 further describes whether each route alternatives will be carried forward for evaluation in the EIS based on the criteria in Minn. R. 4410.2300(G) and Minn. R. 7852.1400. Route alternatives to be reviewed in the EIS are also shown in Appendix A, Figure 2.

[~~22~~24] See http://mn.gov/commerce/energyfacilities//resource.html?Id=33938.

TABLE 2 (SPP)
Description of Route Alternatives

Route Alternative (RA)	Description	Length (approximate miles)	States Crossed (number)	Counties Crossed (number)	Recommended for Study as RA in EIS?[25]
RA-01	Co-locating the proposed pipeline with the existing line 81 would reduce habitat fragmentation and there would be fewer cumulative effects	3.76	1	1	Yes
RA-02	Route alternative requested to move pipeline further away from property owner house, wants pipeline to be 700 feet away from home instead of 200 feet.	1.61	1	1	No. Included in Applicant's Proposed Route on May 30, 2014.
RA-03	Route alternative requested to minimize impacts to agricultural research sites. Avoidance of "Field 18" and moving north to drainage ditch in "Field 17" to make sure field 18 can still be used in future research	1.88	1	1	No. Included in Applicant's Proposed Route on May 30, 2014.
RA-04	Route alternative to avoid an overhead power line.	0.23	1	1	No. Included in Applicant's Proposed Route on May 30, 2014.
RA-05	Route alternative requested to accommodate refinement of facility design at the Clearbrook West Terminal.	0.33	1	1	No. Included in Applicant's Proposed Route on May 30, 2014.
RA-06	The pipeline should be routed to the north around the lakes area.	205.52	1	5	Yes

[25] Potential impacts associated with RAs that have been incorporated into the Applicant's Proposed Route will be studied in the EIS as part of the Applicant's Proposed Route, not as separate RAs.

TABLE 2 (SPP)
Description of Route Alternatives

Route Alternative (RA)	Description	Length (approximate miles)	States Crossed (number)	Counties Crossed (number)	Recommended for Study as RA in EIS?[25]
RA-01	Co-locating the proposed pipeline with the existing line 81 would reduce habitat fragmentation and there would be fewer cumulative effects	3.76	1	1	Yes
RA-02	Route alternative requested to move pipeline further away from property owner house, wants pipeline to be 700 feet away from home instead of 200 feet.	1.61	1	1	No. Included in Applicant's Proposed Route on May 30, 2014.
RA-03	Route alternative requested to minimize impacts to agricultural research sites. Avoidance of "Field 18" and moving north to drainage ditch in "Field 17" to make sure field 18 can still be used in future research	1.88	1	1	No. Included in Applicant's Proposed Route on May 30, 2014.
RA-04	Route alternative to avoid an overhead power line.	0.23	1	1	No. Included in Applicant's Proposed Route on May 30, 2014.
RA-05	Route alternative requested to accommodate refinement of facility design at the Clearbrook West Terminal.	0.33	1	1	No. Included in Applicant's Proposed Route on May 30, 2014.
RA-06	The pipeline should be routed to the north around the lakes area.	205.52	1	5	Yes
RA-07	The pipeline should be routed with existing pipelines along highway 2. (Enbridge's mainline)	179.82	1	7	No. As described in NDPC's Revised EIR, this alternative presents substantial constraints, including the inability to obtain permanent easements, significant construction constraints, and potentially greater human and environmental impacts.[26]

[26] NDPC Revised Environmental Information Report ("EIR") at 2-10 – 2-11.

RA-08	The pipeline should be routed with existing Great Lakes pipelines that run generally south of Hwy 2 through Beltrami, Cass, Itasca and St Louis Counties.	174.22	1	8	No. As described in NDPC's Revised EIR, this alternative presents substantial constraints, including the inability to obtain permanent easements, significant construction constraints, and potentially greater human and environmental impacts.[27]
RA-09	Alternative route starting in Section 11 of Itasca Township in Clearwater County and Hattie Township in Hubbard County to avoid the Big LaSalle Lake area.	8.05	1	2	Yes
RA-10	Big La Salle Creek alternative, lack of access near crossing of LaSalle Creek could result in delayed spill response times, suggest moving route to a crossing that is more accessible	6.83	1	2	Yes
RA-11	Route Alternative proposed to accommodate a landowner request to avoid the lake.	0.90	1	1	No. Further refined and included in Applicant's EAW Proposed Route on April 11, 2016.
RA-12	Route alternative is being requested to remove a temporary workspace from adjacent land.	0.34	1	1	No. Included in Applicant's Proposed Route on April 4, 2014.
RA-13	Route alternative requested to route through North Dakota Pipeline Company land recently purchased.	0.18	1	1	No. Included in Applicant's Proposed Route on May 30, 2014.
RA-14	Route alternative being requested because two property owners want the pipeline further away from structures.	1.57	1	1	No. Included in Applicant's Proposed Route on April 4, 2014.
RA-15	Twin Lakes route alternative, lack of access near Twin Lakes and Shell river could result in delayed spill response times. Twin Lakes are identified as wild rice lakes by the PCA.	9.46	1	1	Yes

[27] NDPC Revised EIR at 2-10 – 2-11.

RA-16	This route alternative was proposed to avoid the Crow Wing WMA due to easement restrictions.	10.46	1	3	No. Included in Applicant's Proposed Route on August 21, 2014.
RA-17	Route Alternative being proposed to avoid a large wetland complex in Foot Hill State Forest.	0.41	1	1	No. Included in Applicant's Proposed Route on April 4, 2014.
RA-18	Route alternative requested to accommodate changes to engineering design to add a pipeline inspection gauge launcher and receiver trap.	0.18	1	1	No. Included in Applicant's Proposed Route on May 30, 2014.
RA-19	Route alternative requested that the pipeline be constructed near an existing fence line.	1.11	1	1	No. Included in Applicant's Proposed Route on May 30, 2014.
RA-20	DNR requested a wider route south of the Spire Valley Fish Hatchery to minimize impacts the hatchery.	1.25	1	1	No. Expanded route width no longer necessary based on revised centerline included in Applicant's EAW Proposed Route on April 11, 2016.
RA-21	DNR recommended the Aitkin County Power Line as a route alternative to eliminate concerns regarding Sandy River fisheries and wild rice habitat as well as trout stream habitat. This would also avoid 3.1 miles of WMA's and follows existing corridor.	53.88	1	3	Yes
RA-22	DNR recommended a route alternative that would avoid critical habitat in the Big Sandy lake watershed as well as Grayling Marsh WMA, McGregor WMA, Lawler WMA and Salo Marsh WMA.	38.82	1	2	Yes
RA-23	This route alternative was proposed to follow the Aitkin County Soo Line Trail.	31.13	1	1	Yes
RA-24	Commenter proposing route alternative to minimize forest fragmentation and avoid old growth forests in the Hill River State Forest.	1.65	1	1	No. Included in Applicant's Proposed Route on April 4, 2014.
RA-25	Commenter would like the route to move to the east across wetland (former rice paddy areas) to preserve all high land for future building plans.	0.61	1	1	No. Included in Applicant's Proposed Route on May 30, 2014.
RA-26	Commenter would prefer route alternative that would veer south and southeast from the intersection of US Highway 169 and CSAH 3 west of Palisade.	3.41	1	1	No. Included in Applicant's Proposed Route on April 4, 2014.
RA-27	DNR is recommending that the analysis includes the Soo line to avoid the McGregor SNA and the Sandy River watershed.	13.23	1	1	Yes

RA-28	Commenter suggested a route alternative that turns south in Aitkin County and meets back with the proposed route to the east.	3.50	1	1	Yes
RA-29	Commenter suggested a route alternative suggested accommodating landowner request related to future home sites along the road.	0.66	1	1	No. Included in Applicant's Proposed Route on April 4, 2014.
RA-30	Route alternative requested to avoid bending the pipeline in the road ditch which could impact the integrity of the roadway.	0.07	1	1	No. Included in Applicant's Proposed Route on May 30, 2014.
RA-32	Commenter is requesting that the pipeline be located on Aitkin County Tax forfeit land which avoids mature trees.	0.45	1	1	No. Applicant has worked with landowner to resolve issues prompting RA-32.
RA-33	Commenter would like the pipeline moved east to the back edge of his property where it joins with the Peat Plant.	1.80	1	1	Yes
RA-34	Commenter suggesting shifting the pipeline north into the tree line.	2.22	1	1	Yes
RA-35	Commenter suggesting route alternative that would cut south on township road 270th and traverse east until it meets with the proposed route.	1.72	1	1	Yes
RA-36	Commenter suggesting a route alternative to shift the pipeline to the north into tree line.	0.38	1	1	No. Included in Applicant's Proposed Route on May 30, 2014.
RA-37	Commenter suggesting Route Alternative that would parallel Hwy 210 after mile marker 550 then turn south to reconnect with the proposed route south of Cloquet.	38.68	1	2	Yes
RA-38	Commenter suggested a Route Alternative to avoid the Salo Marsh WMA.	6.73	1	2	No. Unlikely to have any significant environmental benefit given Applicant's May 26, 2016 incorporation of L3-RA-08 Amended Route Alternative, which avoids Salo Marsh WMA.

RA-39	Commenter would prefer route alternative that veers south of proposed route near Salo Marsh WMA Impoundment to avoid mineral development land.	9.01	1	2	No. Unlikely to have any significant environmental benefit given Applicant's May 26, 2016 incorporation of L3-RA-08 Amended Route Alternative, which avoids the mineral development land at issue in RA-39.
RA-40	Commenter suggested a route to use county land to the north of property owners land near Section 4, Township 47N, Range 21W in Carlton County.	1.04	1	1	No. RA-40 no longer connects to the Proposed Route or any other RA.
RA-41	Commenter suggested shifting the pipeline south to avoid a beaver dam.	0.61	1	1	No. Unlikely to have any significant environmental benefit given Applicant's May 26, 2016 incorporation of L3-RA-08 Amended Route Alternative, which avoids the beaver dam at issue in RA-41.
RA-42	Commenter requesting to co-locate pipeline with an existing power line corridor.	3.48	1	1	Yes
RA-43	Commenter suggesting to move pipeline to north side of Hwy 61, co-locating it with a utility corridor.	3.08	1	1	Yes
RA-44	Commenter suggested following and existing utility corridor on the north side of Highway 61 to avoid the Blackhoof watershed.	7.66	1	1	Yes
RA-45	Commenter suggested following south side of Highway 61 to avoid the Blackhoof Watershed	7.13	1	1	Yes
RA-46	Commenter suggested shifting the pipeline to the south, running parallel to County Road 61.	1.91	1	1	Yes
RA-47	Route alternative requested moving the pipeline south to avoid a grove of trees.	0.85	1	1	No. Included in Applicant's Proposed Route on April 4, 2014.

RA-48	Commenter suggested shifting the pipeline to the other side of I-35 to avoid cutting off access road.	1.28	1	1	No. Unlikely to have any significant environmental benefit given Applicant's May 26, 2016 incorporation of L3-RA-09, which avoids the access road at issue in RA-48.
RA-49	Commenter requested to follow the south sides of I-35 and Highway 61 to distance pipeline from multiple properties.	5.96	1	1	Yes
RA-50	Commenter requested to reduce the number of Blackhoof River crossings.	0.56	1	1	No. Included in Applicant's Proposed Route April 4, 2014.
RA-51	Commenter proposed shifting the pipeline north to follow the tree line and distance it from homesteads.	1.41	1	1	Yes
RA-52	Commenter proposed shifting the pipeline north to follow the tree line and distance it from homesteads.	0.84	1	1	Yes
RA-53	This alternative was proposed to avoid multiple crossings of an overhead power line.	0.20	1	1	No. Included in Applicant's Proposed Route April 4, 2014.
RA-54	Commenter suggested locating the pipeline closer to an existing natural gas line.	0.31	1	1	No. Included in Applicant's Proposed Route April 4, 2014.
SA-03-AM (as modified)	Pipeline should avoid lakes area and follow existing pipelines.	225	1	11	Yes
SA-03-as modified L3-RA-10	This alternative is a modification to the system alternative SA-03. Routing proceeds from the Clearbrook terminal and follows SA-03 AM south to Milaca, MN where it follows Hwy-23 to Hinckley, MN and then follows SA-03 AM to the point where it rejoins the Applicant's Proposed Route.	263	3	10	Yes
SA-03-as amended L3- RA-10	This alternative is a variation of the Sandpiper SA-03 Modified. The route would proceed from Line 3 and go south to follow SA-03, turns east to Park Rapids and follows SA-03 AM south to Milaca, MN where it follows Hwy-23 to Hinckley, MN and then follows SA-03AM to the point where it rejoins the Applicant's Proposed Route.	382	3	15	No. Does not meet the purpose and need for the Project because it does not connect to the existing pipeline system at Clearbrook, Minnesota.

L3-RA-01	This alternative was proposed to improve the constructability at Highway 75 by changing the crossing angle alignment. The new alignment crosses at a more perpendicular angel, which will minimize the length of the road bore needed of crossing under the highway.	0.55	1	1	No. Only applicable to L3R Proposed Route.
L3-RA-02	This alternative was proposed accommodate a landowner request to move a portion of the L3R pipeline crossing their property.	2.1	1	1	No. Only applicable to L3R Proposed Route.
L3-RA-02 Amended Route Alternative	This alternative was proposed as an amendment to L3-RA02 to incorporate additional minor modifications to L3RA-02 to further address a landowner request.	2.04	1	1	No. Only applicable to L3R Proposed Route.
L3-RA-03	This alternative was proposed to address landowner concerns.	7.31	1	1	No. Only applicable to L3R Proposed Route.
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 L3R Proposed Route south of the Terminal and Deep Lake. The alternative was proposed in response to comments received from landowners located on the existing Enbridge Mainline System right-of-way near Clearbrook, Minnesota.	2.50	1	1	No. Only applicable to L3R Proposed Route.
L3-RA-04 Amended Route Alternative	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 L3R Proposed Route south of the Terminal and Deep Lake. This alternative amends L3-RA-04 in response to further input received from landowners located on the existing Enbridge Mainline System right-of-way near Clearbrook, Minnesota.	2.52	1	1	No. Only applicable to L3R Proposed Route.
L3-RA-05	This alternative avoids the Eastern Wild Rice Watershed and removes any hydrologic connection to Lower Rice Lake. This alternative would modify the centerline of the Proposed Route where it crosses mostly forested land with some agricultural land.	13.0	1	1	No. Requestor revised this request and resubmitted it as L3-RA-05 Amended Route Alternative.

L3-RA-05 Amended Route Alternative	This alternative avoids the Eastern Wild Rice Watershed and removes any hydrologic connection to Lower Rice Lake. This alternative would modify the centerline of the Proposed Route where it crosses mostly forested land with some agricultural land. This alternative amends L3-RA-05 to improve constructability and address landowner requests.	12.9	1	1	Yes
L3-RA-06	This alternative was proposed at the request of a landowner to avoid gravel deposits. The alternative modifies the centerline of the Proposed Route where it crosses mostly agricultural land.	0.39	1	1	No. Included in Applicant's EAW Proposed Route on April 11, 2016.
L3-RA-07	This alternative was proposed to address landowner concerns.	1.45	1	1	No. Requestor withdrew request for further study of this alternative.
L3-RA-08	This alternative was proposed in response to concerns raised by the MDNR and Kennecott Exploration Company ("Kennecott") in the Sandpiper routing process. MDNR raised concerns regarding potential impacts of the route on active state mineral leases held by Kennecott in Carlton County. This alternative avoids the mineral leases and nearby Salo Marsh WMA. It also addresses nearby landowner concerns and engineering constraints. This alternative is intended to address concerns prompting submittal of RA-38, RA-39, RA-40, and RA-41.	7.2	1	1	No. Requestor withdrew request for further study of this alternative.
L3-RA-08 Amended Route Alternative	This alternative was proposed in response to concerns raised by the MDNR and Kennecott Exploration Company ("Kennecott") in the Sandpiper routing process. MDNR raised concerns regarding potential impacts of the route on active state mineral leases held by Kennecott in Carlton County. This alternative avoids the mineral leases and nearby Salo Marsh WMA. It also addresses nearby landowner concerns and engineering constraints. This alternative is intended to address concerns prompting submittal of RA-38, RA-39, RA-40, and RA-41.This alternative amends L3-RA-08 to improve constructability and address landowner requests.	7.7	1	1	No. Included in Applicant's Proposed Route on May 26, 2016.
L3-RA-09	This alternative was proposed to accommodate the HDD crossing of I-35 in response to a landowner request to move a portion of the Proposed Route crossing their property.	0.60	1	1	No. Included in Applicant's EAW Proposed Route on April 11, 2016.

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	No. Unlikely to have significant environmental benefit as compared to another alternative, since SA-03-as amended L3-RA-10 includes and would otherwise be duplicative of L3-RA-10.
L3-RA-11	This alternative would replace Line 3 in its current location (*i.e.*, an in-trench replacement).	282	3	12	No. Only applicable to L3R Proposed Route.
Red Lake Fen RA	This alternative was proposed to avoid a potential calcareous fen in Red Lake County that was identified by NDPC during field survey (the "Red Lake Fen").	1.8	1	1	No. Included in Applicant's Proposed Route on May 26, 2016.
Blandin RA	This alternative was proposed to avoid a conservation easement held by MDNR on lands owned by Blandin Paper Company ("Blandin"). The conservation easement objective is to maintain forest land and minimize development.		1	1	Yes

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 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 transport of Bakken oil will continue by other means, including, rail, interstate highways and other pipeline systems.

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 Draft EIS is provided in Appendix B.

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

~~23~~28 See Initial Filing Certificate of Need Application for the Minnesota Public Utilities Commission Enbridge Energy, Limited Partnership Line 3 Pipeline Replacement PL-9/CN-14-916 (Document ID: 20154-109653-03).

~~24~~29 See Initial Filing Route Permit Application for the Minnesota Public Utilities Commission Enbridge Energy, Limited Partnership Line 3 Pipeline Replacement PL-9/PPL-15-~~37~~137 (Document IDs: 20154-109661-07,

On April ~~23~~24, 2015, Enbridge submitted CN[~~23~~28] and Route Permit Applications[~~24~~29] for the L3R Project (Docket ~~No.~~Nos. PL-9/CN-14-916 and PPL-15-137, respectively). Consistent with NDPC's notification to the 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.[~~25~~30]

The L3R Project will have its own separate CN and Route Permit. A separate environmental document will be completed for the L3R Project. If a Route Permit is issued for the Applicant's preferred route for Sandpiper, the Applicant plans to co-locate the proposed L3R pipeline adjacent to the Sandpiper pipeline from east of Clearbrook to the Minnesota-Wisconsin border. Due to the likelihood that the two pipelines will be constructed in the same season, NDPC has requested that the EIS evaluate potential impacts assuming that L3R will be constructed first along the centerline and within the construction footprint shown for Sandpiper in the EAW, and Sandpiper constructed second using the L3R centerline and construction footprint between Clearbrook and the Wisconsin border.

The Sandpiper EIS will analyze the potential impacts of the L3R Project as part of the EIS's cumulative impacts discussion. In addition, other projects throughout the Sandpiper corridor that may cause cumulative impacts will also be discussed at a local, county and larger regional levels.

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."[~~26~~31]

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

Limited Partnership Line 3 Pipeline Replacement PL-9/PPL-15-~~37~~137 (Document IDs: 20154-109661-07, 20154-109661-08, 20154-109661-09).

[~~23~~28] See Initial Filing Certificate of Need Application for the Minnesota Public Utilities Commission Enbridge Energy, Limited Partnership Line 3 Pipeline Replacement PL-9/CN-14-916 (Document ID: 20154-109653-03).

[~~24~~29] See Initial Filing Route Permit Application for the Minnesota Public Utilities Commission Enbridge Energy, Limited Partnership Line 3 Pipeline Replacement PL-9/PPL-15-~~37~~137 (Document IDs: 20154-109661-07, 20154-109661-08, 20154-109661-09).

[~~25~~30] See Notice of Application Acceptance and Public Information and Environmental Analysis Scoping Meetings PL-9/CN-14-916; PL-9/PPL-15-137 (Document ID: 20157-112551-02).

[~~26~~31] Minn. R. 4410.2300(H)

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.[~~27~~32]

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. Where NDPC's field data is analyzed, the alternatives analyses may convey an artificially higher potential resource impact along NDPC's preferred route. The EIS will identify this issue where appropriate.

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). Analysis areas are outlined for each resource type in Appendix C. 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 particular resource. For

[~~27~~32] See Minn. R. 4410.2500.

example, the RAA for some resources may be the entire county and for others may be a specified distance from the centerline (details can be found in Appendix C). 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 Sandpiper 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 major 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, Employment and Socioeconomic Analysis

Potential ~~social,~~ environmental ~~and~~, economic, employment and socioeconomic 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 in accordance with Minn. R. 4410.2300(H). 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 major 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 major 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, Minnesota Department of Agriculture, 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 major 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 from the United States Census Bureau will be used to identify tribal lands. 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 USGS Gap Analysis Program (federal lands), Minnesota Geospatial Information Office (MnGeo), Minnesota Department of Agriculture (agricultural resource types), MDNR (forest inventory data, forest stewardship sites, minerals, county tax-forfeit lands, 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 major 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 [TCPs]), 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. Cultural values include [suggest DOC-EERA provide]. Treaty areas will include [suggest DOC-EERA provide.] 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~~,~~ and 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. A list of some of the specific natural resource features to be analyzed in the EIS as identified through public comment can be found in Appendix B.

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 MDNR 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 and alternatives. 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, 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 species of greatest conservation need (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. Information concerning rare and unique natural resources will also be obtained from the biological field surveys that are being conducted for the Applicant's preferred route.

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.

4.4.7 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.

4.4.7.1 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.

4.4.7.2 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.

4.4.8 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.[~~28~~33]

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 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.

[~~28~~33] US Department of Transportation Pipeline and Hazardous Materials Safety Administration http://www.phmsa.dot.gov/.

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, NDPC, 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 using these data and based on 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 L3R Project will replace 282 miles of 34-inch pipeline with 337 miles of new 36-inch-diameter pipeline. The Line 3 pipeline was originally constructed as a series of loops beginning in 1962 and placed into service in 1968.[~~29~~34] The integrity management plan for Line 3 has seen an increasing number of integrity digs and repairs in recent years. Starting in 2008, Enbridge voluntarily reduced the pressure and capacity of Line 3 to 390,000 bpd. The L3R Project will restore the line to its historical operating capacity of 760,000 bpd from its current capacity of 390,000 bpd.

Associated facilities for the L3R Project include upgrading four existing pump stations and adding an additional four pump stations at new locations. The project will also include ~~27 safety~~30 mainline valves.

Enbridge's preferred route for the L3R pipeline follows the existing Enbridge mainline corridor west of Clearbrook, Minnesota, in Kittson, Marshall, Pennington, Red Lake, Polk and Clearwater counties to the terminal in Clearbrook. East of Clearbrook, the preferred route follows approximately 75 percent of existing utility corridors in Hubbard, Wadena, Cass, Crow Wing, Aitkin and Carlton counties. 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.[~~30~~35]

Cumulative impacts of high-voltage transmission lines and substations needed to serve proposed Sandpiper 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.

[~~29~~34] See Chapter 2 of the Line 3 Replacement Route Permit Application to the Minnesota Public Utilities Commission.
[~~30~~35] See Chapter 6 of the Line 3 Replacement Route Permit Application to the Minnesota Public Utilities Commission.

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 updated economic analysis of the need for the proposed project considering other proposed or planned pipeline projects out of the Williston Basin.

5. An independent assessment of the technical and economic feasibility of System Alternatives as described above in Section 3.

[Suggest DOC-EERA provide a more detailed description of each proposed study.]

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. L3R 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~~As Ordered by the Commission and the Court of Appeals, and consistent with Minn. R. 7852.1500, the EIS is being prepared for consideration in the Commission's decision ~~on~~in 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~~will require a record of decision pursuant to Minnesota Rule 4410.2100, subpart 6(D).

Table ~~2~~3 provides a list of known federal, state and local approvals, certifications and financial assistance required for the project.

TABLE ~~2~~3
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

TABLE ~~2~~3
Permits and Approvals Required

Unit of Government	Type of Application	Status	Reason Required
	NPDES Individual Construction Stormwater, Hydrostatic Test, and Trench Dewatering Permit – Pipeline Construction	Pending submittal	Authorizes ground disturbance with approved protection measures to manage soil erosion and stormwater discharge on construction site; discharge of water from 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

TABLE ~~2~~3
Permits and Approvals Required

Unit of Government	Type of Application	Status	Reason 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~~4. The schedule is contingent upon a number of factors; unforeseen circumstances may alter it.

TABLE ~~3~~4
Tentative Schedule

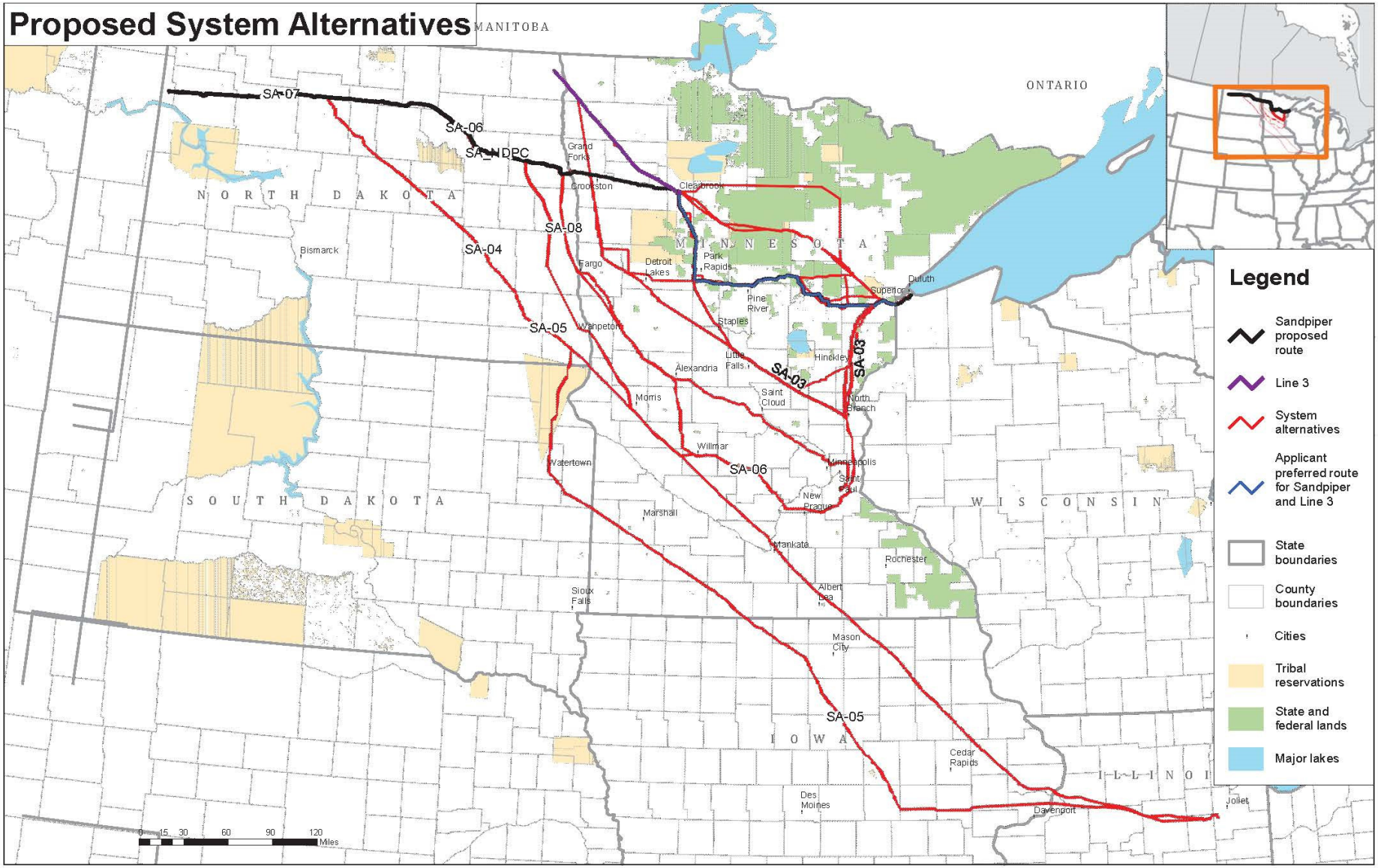
Scoping EAW and Draft Scoping Decision Document issued	April 11, 2016
Public Scoping Meeting(s)	April-May 2016
Close of Public Comment Period	May 26, 2016
Final Scoping Decision Document	June 2016
EIS Preparation Notice Published (Start of 280-day EIS process)	August 2016
Draft EIS Issued for Public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

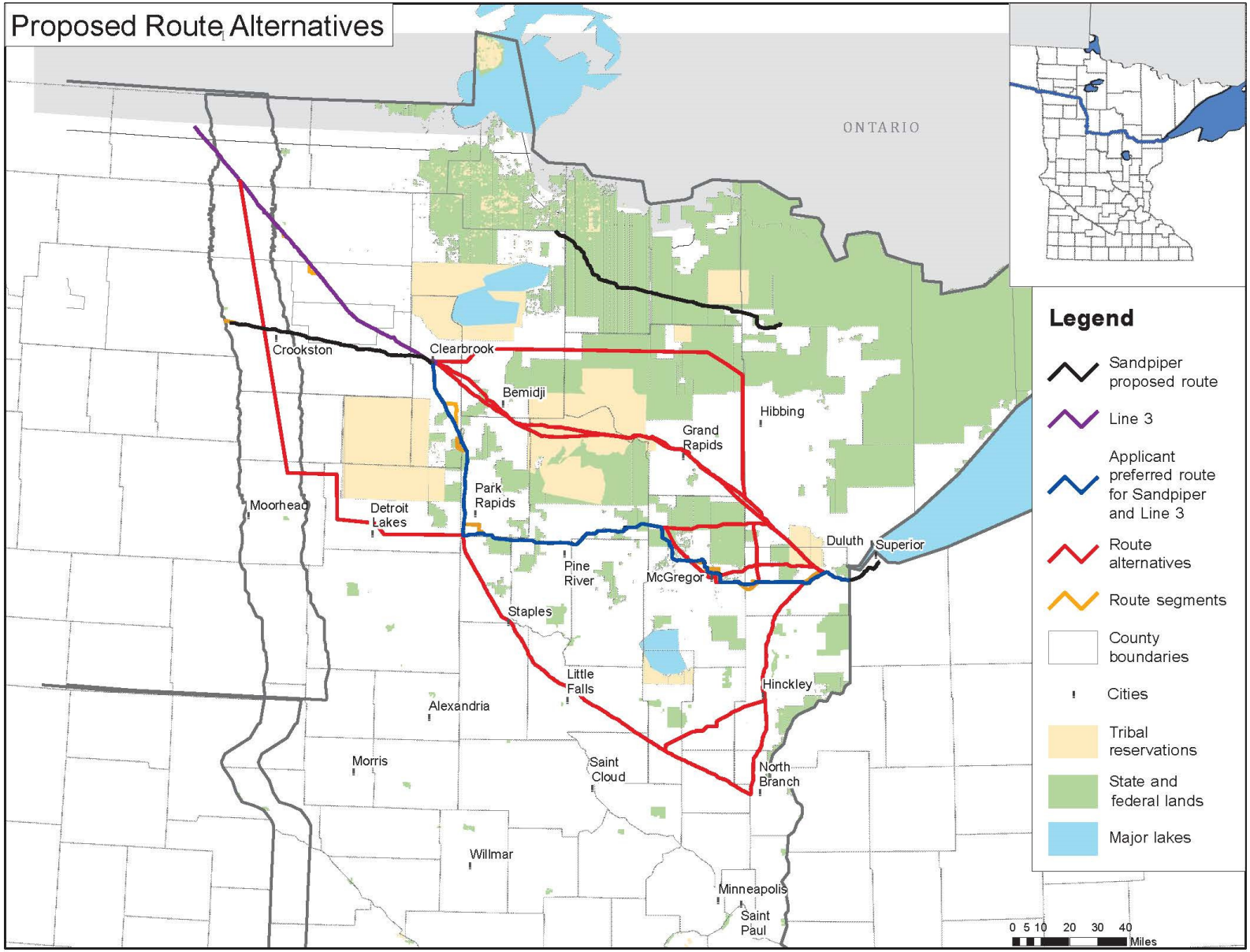
Appendix A

Figures

Figure 1: Sandpiper Previously Accepted System Alternatives

Figure 2: Sandpiper Previously Accepted Route Alternatives


Proposed System Alternatives
MANITOBA
ONTARIO
NORTH DAKOTA
SOUTH DAKOTA
MINNESOTA
WISCONSIN
IOWA
ILLINOIS
SA-07
SA-06
SA_NDPC
SA-08
SA-04
SA-05
SA-03
SA-03
SA-06
SA-05
Grand Forks
Crookston
Clearbrook
Bismarck
Fargo
Detroit Lakes
Park Rapids
Duluth
Superior
Pine River
Staples
Wahpeton
Alexandria
Little Falls
Hinckley
Saint Cloud
North Branch
Morris
Willmar
Watertown
Minneapolis
Saint Paul
New Prague
Marshall
Mankato
Rochester
Albert Lea
Sioux Falls
Mason City
Cedar Rapids
Des Moines
Davenport
Joliet
Legend
Sandpiper proposed route
Line 3
System alternatives
Applicant preferred route for Sandpiper and Line 3
State boundaries
County boundaries
Cities
Tribal reservations
State and federal lands
Major lakes
0 15 30 60 90 120
Miles


Proposed Route Alternatives
ONTARIO
Crookston
Clearbrook
Bemidji
Hibbing
Grand Rapids
Park Rapids
Moorhead
Detroit Lakes
Duluth
Superior
Pine River
McGregor
Staples
Little Falls
Hinckley
Alexandria
Morris
Saint Cloud
North Branch
Willmar
Minneapolis
Saint Paul
Legend
Sandpiper proposed route
Line 3
Applicant preferred route for Sandpiper and Line 3
Route alternatives
Route segments
County boundaries
Cities
Tribal reservations
State and federal lands
Major lakes
0 5 10 20 30 40
Miles

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~~F. Climate Change

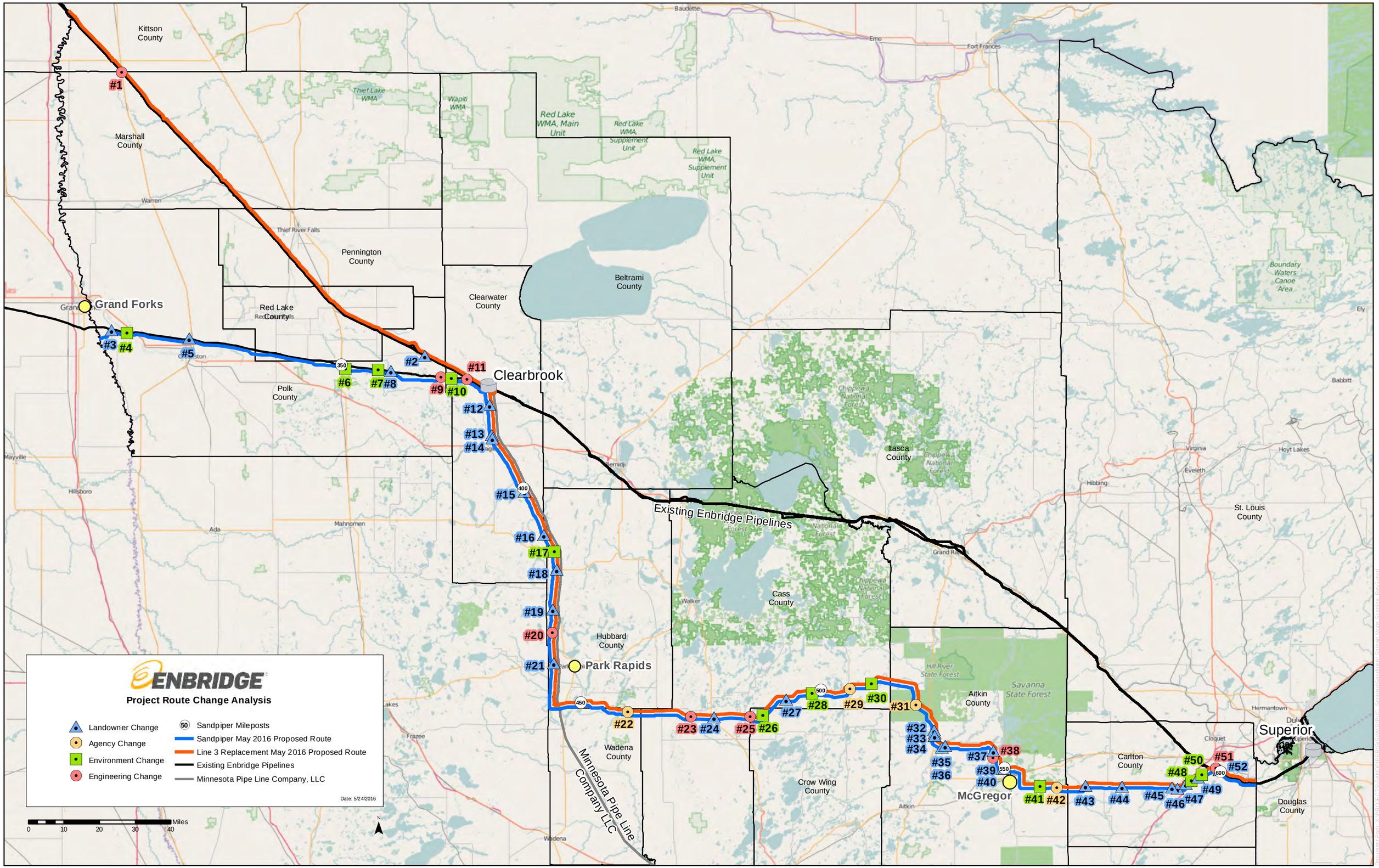
~~F~~G. Construction Impacts

~~G~~H. Cumulative Effects

VI. Comparative Environmental Consequences by Alternative

Appendix B

Summary of Changes to Sandpiper Proposed Route


Kittson County
Marshall County
Pennington County
Red Lake County
Clearwater County
Beltrami County
Polk County
Hubbard County
Cass County
Wadena County
Crow Wing County
Aitkin County
Itasca County
St. Louis County
Carlton County
Douglas County
Grand Forks
Park Rapids
Clearbrook
McGregor
Superior
Thief Lake WMA
Wapiti WMA
Red Lake WMA, Main Unit
Red Lake WMA, Supplement Unit
Red Lake WMA, Supplement Unit
Boundary Waters Canoe Area
Chippewa National Forest
Hill River State Forest
Savanna State Forest
Existing Enbridge Pipelines
Minnesota Pipe Line Company, LLC
Baudette
Emo
Fort Frances
Thief River Falls
Warren
Mayville
Hillsboro
Ada
Mahnomen
Frazee
Remidji
Walker
Grand Rapids
Aitkin
Hermantown
Cloquet
Virginia
Eveleth
Hibbing
Hoyt Lakes
Babbitt
Ely
#1 #2 #3 #4 #5 #6 #7 #8 #9 #10 #11 #12 #13 #14 #15 #16 #17 #18 #19 #20 #21 #22 #23 #24 #25 #26 #27 #28 #29 #30 #31 #32 #33 #34 #35 #36 #37 #38 #39 #40 #41 #42 #43 #44 #45 #46 #47 #48 #49 #50 #51 #52
350 400 450 500 550 600
ENBRIDGE
Project Route Change Analysis
Landowner Change
Agency Change
Environment Change
Engineering Change
Sandpiper Mileposts
Sandpiper May 2016 Proposed Route
Line 3 Replacement May 2016 Proposed Route
Existing Enbridge Pipelines
Minnesota Pipe Line Company, LLC
Date: 5/24/2016
Miles
0 10 20 30 40
N

Summary of Changes to Applicant Proposed Route from November 2013 to April 2016

Map Number	RA (if any)	Request category	Notes
1	L3RA-01	Engineering	Move pipeline west to avoid HDD
2		Landowner	Move pipeline to avoid landowners trees
3	RA-02	Landowner	Move pipeline to the south side of property at landowner's request
4		Environment	Shift centerline and extend HDD to avoid cultural ESA
5	RA-03	Landowner	Move pipeline north at landowner's request
6		Environment	Route around wetland bank
7		Environment	Neckdown to avoid impacting cultural ESA
8		Landowner	Move pipeline east at landowner's request
9	RA-04	Engineering	Move pipeline east for better road crossing
10		Environment	Move pipeline north to stay in existing Enbridge easement to avoid additional impacts to Conservation Easement on parcel
11	RA-05	Engineering	Adjust centerline to align better to needed facility entry/exit point
12		Landowner	Adjust crossing angle of MPL pipelines at MPL's request
13		Landowner	Move pipeline west to avoid impact to landowner's driveway
14		Landowner	Adjust crossing angle of MPL pipelines at MPL's request
15		Landowner	Cross under to west side of MPL pipelines at landowner's request
16	RA-11	Landowner	Move pipeline west at landowner's request
17		Environment	Move pipeline east to avoid historic contaminated soils
18		Landowner	Move pipeline east at landowner's request
19	RA-12	Landowner	Move pipeline east at landowner's request
20	RA-13	Engineering	Straighten pipeline through farm yard
21	RA-14	Landowner	Move pipeline east at landowner's request
22	RA-16	Agency	Route south to avoid Crow Wing WMA
23	RA-17	Engineering	Move pipeline north to avoid saturated wetland
24		Landowner	Move pipeline north to avoid cattle pond

25	RA-18	Engineering	Adjust pipeline to tie into Pine River Trap
26		Environment	Move pipeline north to avoid bat roosting tree
27	RA-19	Landowner	Move pipeline south of existing fence lines at landowner's request
28		Environment	Move pipeline north to avoid butternut trees
29	RA-20	Agency	Move pipeline south to avoid Spire Valley Aquatic Management Area
30		Environment	Move pipeline north to avoid bat roosting tree
31	RA-24	Agency	Route west at MDNR request to avoid Hill River old growth forest area
32		Landowner	Move pipeline east at landowner's request
33	RA-25	Landowner	Landowner request to move centerline to east side of property to avoid large trees
34		Landowner	Move pipeline east at landowner's request
35	RA-26	Landowner	Route south away from organic farms at landowner's request
36	L3RA-06	Landowner	Move pipeline northwest to avoid gravel deposits
37	RA-29	Landowner	Move pipeline to the east side of property at landowner's request
38	RA-30	Engineering	Move bends south for better constructability
39	RA-36	Landowner	Move pipeline north at landowner's request
40		Landowner	Move pipeline to the north side of property at landowner's request
41		Environment	Move pipeline south to avoid WMA impacts
42	RA-38	Agency	Re-route around Salo Marsh WMA and minimize impact to Kennecott Mineral Lease parcels
43	RA-41	Landowner	Landowner requested to route south around a beaver pond. RA-41 is no longer relevant to the Proposed Route because applicant has adopted the L3RA-08 Amended Route Alternative.
44		Landowner	Neckdown pipelines and workspace to avoid trees for landowner
45		Landowner	Move pipeline south at landowner's request
46	RA-47	Landowner	Move pipeline south out of trees at landowner's request
47	L3RA-09	Landowner	Move pipeline north at landowner's request
48	RA-50	Environment	Cross under overhead power lines for better crossing of Blackhoof River
49		Landowner	Move pipeline southeast at landowner's request - satisfies RA-51 and RA-52
50		Environment	Route away from co-location with overhead power lines to avoid a Conservation Easement
51	RA-53	Engineering	Keep line south of overhead power lines to avoid crossing them
52	RA-54	Landowner	Move pipeline to the east side of property at landowner's request

Appendix C

NDPC's Proposed Route Alternatives

I. Red Lake Fen Route Alternative

A. Description.

As shown on Figure C-1, the Red Lake Fen Route Alternative deviates from the Sandpiper Pipeline Project ("SPP") May 2016 Proposed Route at milepost ("MP") 334.3 and rejoins the SPP May 2016 Proposed Route at MP 335.9, all within Red Lake County, Minnesota. This alternative would modify the centerline of the SPP May 2016 Proposed Route where it crosses mostly agricultural land.

B. Purpose.

NDPC proposes this Route Alternative to avoid a potential calcareous fen in Red Lake County that was identified by NDPC during field survey (the "Red Lake Fen"). NDPC has categorized the fen as "potential," as the fen meets some, but not all, criteria required for designation as a state-listed calcareous fen. NDPC first notified the Minnesota Department of Natural Resources ("MDNR") of the area in July 2015 and corresponded with MDNR throughout the remainder of 2015 regarding survey findings and the Route Alternative as presented in this section.

On February 3, 2016, MDNR concurred that the Red Lake Fen Route Alternative is unlikely to impact the potential fen, and that no calcareous fen management plan would be required should the Route Alternative be adopted. MDNR asked NDPC to conduct additional surveys along the Red Lake Fen Route Alternative to identify the potential for impacts on listed species. NDPC is planning to conduct a detailed species survey along the Route Alternative in June/July 2016.

C. Analysis of Potential Impacts.

Table C-1 below compares the impacts of the Red Lake Fen Route Alternative to the corresponding segment of the SPP May 2016 Proposed Route. The Route Alternative is 0.3 mile longer than the SPP May 2016 Proposed Route. The Route Alternative follows existing right-of-way for 0.2 mile while the SPP May 2016 Proposed Route follows existing right-of-way for 0.6 mile. One residence is within 500 feet of the Route Alternative; no residences are within 50 feet of the Route Alternative. No residences are within 50 feet or 500 feet of the SPP May 2016 Proposed Route. The Route Alternative crosses fewer National Wetland Inventory ("NWI")-mapped wetlands than the SPP May 2016 Proposed Route, 0.1 miles versus 0.2 mile respectively, and 1 versus 3 individual wetlands respectively. The Route Alternative crosses 0.3 mile fewer prime farmland soil, and 0.2 mile more of highly wind erodible soils than the SPP May 2016 Proposed Route. Both routes cross one road. Both routes avoid perennial waterbodies, state trails, national forest, tribal land, state forest land, state Wildlife Management Areas ("WMAs") and Aquatic Management Areas ("AMAs"), trout streams, active state mineral leases, bedrock outcrops, and railroads. Finally, the Route Alternative completely avoids the potential Red Lake Fen and is likely to avoid impacts to listed species, both of which would be impacted by the SPP May 2016 Proposed Route.

NDPC proposes to adopt the Red Lake Fen Route Alternative as part of its Proposed Route, as it does not introduce any significant impacts to environmental features as outlined in Table C-1

and avoids impacts to the potential Red Lake Fen. NDPC respectfully requests that the MPUC accept the proposed Red Lake Fen Route Alternative for further environmental analysis in the draft EIS.

Table C-1
Features Comparison of the Red Lake Fen Route Alternative

Project Features	Unit	Red Lake Fen Route Alternative	SPP May 2016 Proposed Route[a]
Route Description			
Length of Alternative for Comparison[b]	Miles	1.8	1.5
Adjacent to Existing ROW	Miles	0.2	0.6
Greenfield Route[c]	Miles	1.6	0.9
Socio-economic Constraints			
Residences within 50 Feet	Number	-	-
Residences within 500 Feet	Number	1	-
Construction Constraints having Environmental Impacts			
NWI-mapped Wetlands	Miles	0.1	0.2
NWI-mapped Wetlands	Number	1	3
Prime Farmland	Miles	0.1	0.3
Highly Wind Erodible Soils	Miles	0.7	0.4
Perennial Waterbodies	Number	-	-
State Trails	Number	-	-
Construction Constraints in Crossing Federal, State and County Resources/Jurisdictions			
National Forest Land	Miles	-	-
Tribal Land	Miles	-	-
State Forest Land	Miles	-	-
State WMA Land	Miles	-	-
State AMA Land	Miles	-	-
Technical Constraints Having Associated Environmental Impact			
Trout Streams	Number	-	-
Active State Mineral Leases	Number	-	-
Bedrock Outcrops	Miles	-	-
Railroads Crossed	Number	-	-
Roads Crossed	Number	1	1
Other Major Issues	Number	0	1[d]

a The comparison analysis is based solely on publicly available desktop data.
b The comparison analysis begins at MP 334.3 and ends at MP 335.9 in Red Lake County.
c Greenfield locations are defined as any portion of the route that is greater than 250-feet from the centerline of a known utility or road.
d The potential Red Lake Fen.

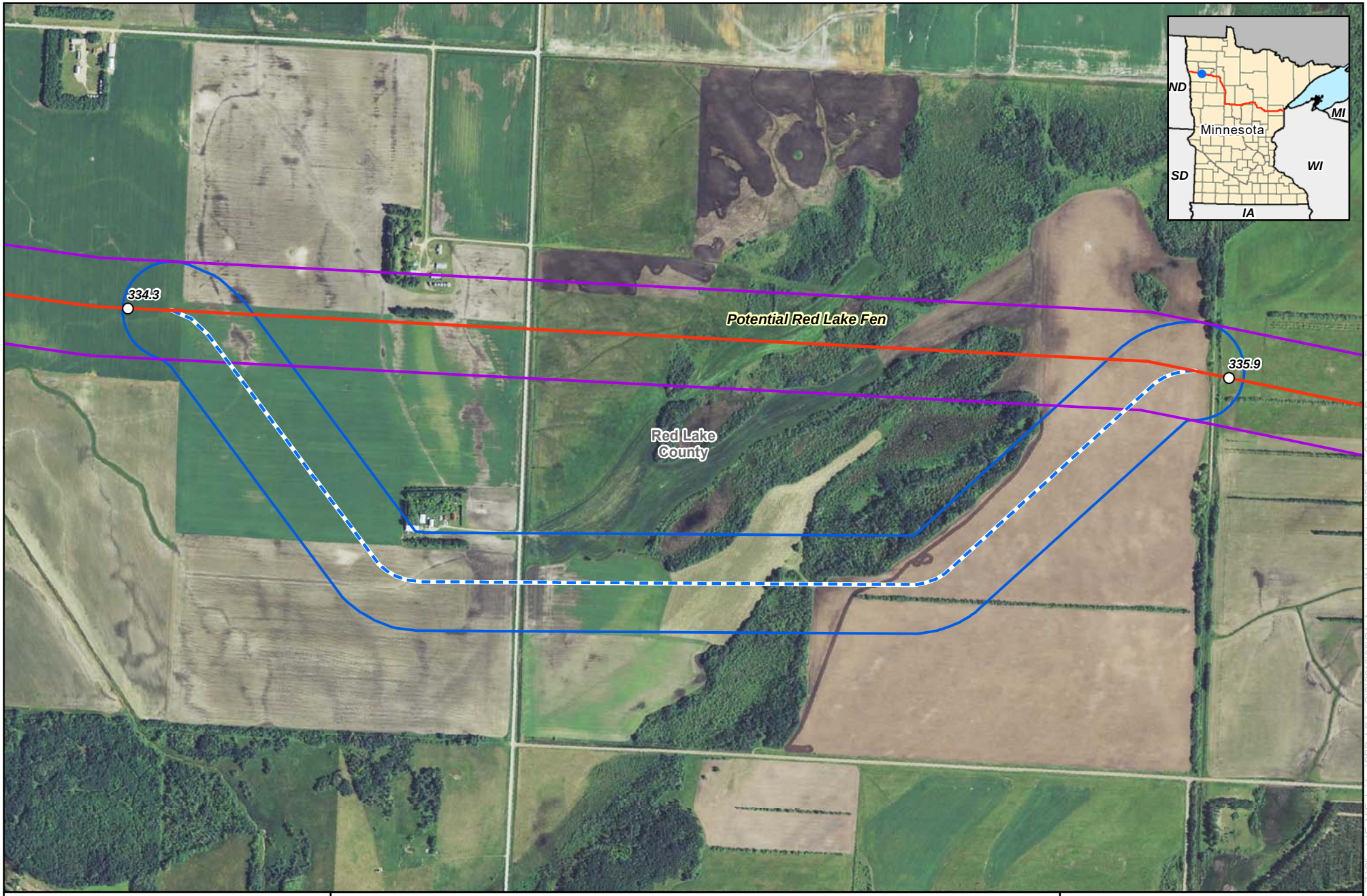


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Figure C-1
North Dakota Pipeline Company LLC
Sandpiper Pipeline Project
Red Lake Fen Route Alternative

- Milepost
- SPP May 2016 Proposed Route
- Red Lake Fen Route Alternative
- SPP May 2016 Proposed 750-foot Route Width
- Red Lake Fen Route Alternative 750-foot Route Width

Source: Z:\Clients\E_H\Enbridge\SPP_L3\ArcGIS\2016\05\RA_Analysis\Maps\Updates\SPP_Fig_C-1_RA_Red_Lake Fen.mxd
Date: (5/23/2016)

II. L3RA-05 - Amended Route Alternative

A. Description.

As shown on Figure C-2, the L3RA-05 - Amended Route Alternative deviates from the SPP May 2016 Proposed Route[1] at MP 394.6 and rejoins the route at MP 404.3, all within Clearwater County, Minnesota. This alternative would modify the centerline of the SPP May 2016 Proposed Route where it crosses mostly forested land and some agricultural land.

B. Purpose.

On September 30, 2015, Enbridge proposed the Eastern Wild Rice Watershed Route Alternative (listed as L3RA-05 in the DSDD) as a route alternative for L3R in response to comments made in MPUC Docket Number PL-6668/PPL-13-473 by the White Earth Band of Ojibwe concerning SPP's crossing of the Eastern Wild Rice Watershed. Specifically, representatives of the White Earth Band of Ojibwe stated that Lower Rice Lake is the most abundant, regularly producing wild rice lake for tribal members.[2] The Route Alternative avoids the Eastern Wild Rice Watershed and removes any hydrologic connection to Lower Rice Lake. This route alternative was never formally accepted by MPUC for L3R; in addition, the SPP Route Permit process was closed at the time of L3R submittal, and NDPC was not able to submit an equivalent route alternative for SPP.

Enbridge has since made minor modifications to L3RA-05 to improve constructability and address landowner concerns, and is filing the L3RA-05 – Amended Route Alternative to replace

[1] When using the term "SPP May 2016 Proposed Route" where the SPP route and the L3R route are co-located, the term reflects the L3R EAW Proposed Route that was filed with the April 2016 EAW. At that time, NDPC and Enbridge proposed to construct SPP first (the "first pipe"), followed by L3R (the "second pipe"). In Section V of this filing, NDPC and Enbridge state their current intention to install the L3R pipeline first, and install the SPP pipeline second. Therefore, this RA filing compares the SPP May 2016 Proposed Route (i.e., the L3R EAW Proposed Route) to the relevant SPP Route Alternative, so that the SPP Route Alternative and the corresponding section of the SPP route both assume the "second pipe" scenario. As SPP and L3R are generally offset 25 to 40 feet where co-located, the switching of the order of construction would not result in significant environmental impacts.

[2] *See* Transcripts—of June 3, 2015 MPUC Proceeding, filed by the Court Reporter on June 9, 2015 (MPUC Doc. ID 20156-111285-01), *In the Matter of the Application of North Dakota Pipeline Company LLC for a Certificate of Need for the Sandpiper Pipeline Project,* MPUC Docket No. PL6668/CN-13-473 (Attorney Joe Plummer remarks at pages 176:8 – 177:2 that "The White Earth Band doesn't regularly get involved in proceedings like this. But we were spurred into action because of the proposed route… Most importantly, the wild rice lake that this proposed route goes in very close proximity of is the most abundant, regularly producing wild rice lake at White Earth and it's known as Lower Rice Lake. It's over five miles long and it's over a mile and a half wide. It's a huge rice bed. And the proposed route is going to go right in between upper and lower Rice Lake. And we believe that we can't take the chance as to whether or not a spill is going to occur, because if there was one, it's going to be catastrophic..."). As shown on Figure C-2, the SPP May 2016 Proposed Route does not cross between Upper Rice Lake and Lower Rice Lake. Nonetheless, NDPC is proposing L3RA-05 - Amended Route Alternative to avoid the watershed related to both lakes.

L3RA-05. NDPC therefore submits an equivalent version of the L3RA-05 – Amended Route Alternative for SPP.

C. Analysis of Potential Impacts.

Table C-2 below compares the impacts of the L3RA-05 - Amended Route Alternative to the corresponding segment of the SPP May 2016 Proposed Route. The Route Alternative is 3.1 miles longer than the SPP May 2016 Proposed Route, and contains 5.9 miles more greenfield land. Six residences are within 500 feet of the Route Alternative; no residences are within 50 feet of the Route Alternative. Six residences are within 500 feet of the SPP May 2016 Proposed Route and one residence is within 50 feet of the SPP May 2016 Proposed Route. The Route Alternative crosses fewer NWI-mapped wetlands than the SPP May 2016 Proposed Route, 0.8 mile versus 2.0 miles respectively, and 22 versus 39 individual wetlands respectively. The Route Alternative crosses 0.8 mile more prime farmland soil, and 0.7 mile more of highly wind erodible soils than the SPP May 2016 Proposed Route. The Route Alternative crosses one perennial waterbody while the SPP May 2016 Proposed Route avoids perennial waterbodies. The Route Alternative avoids state forestry land while the SPP May 2016 Proposed Route crosses less than 0.1 mile of state forestry land. The Route Alternative crosses 2 fewer roads than the SPP May 2016 Proposed Route. Both routes avoid state trails, national forest, tribal land, state WMAs and AMAs, trout streams, active state mineral leases, bedrock outcrops, and railroads.

NDPC proposes that the MPUC accept the proposed L3RA-05 - Amended Route Alternative for further environmental analysis in the draft EIS as it does not introduce any significant impacts to environmental features as outlined in Table C-2 and addresses the concerns raised by the White Earth Band of Ojibwe.

Table C-2
Features Comparison of the L3RA-05 - Amended Route Alternative

Project Features	Unit	L3RA-05 - Amended Route Alternative	SPP May 2016 Proposed Route[a]
Route Description			
Length of Alternative for Comparison[b]	Miles	12.9	9.8
Adjacent to Existing ROW	Miles	6.6	9.4
Greenfield Route[c]	Miles	6.3	0.4
Socio-economic Constraints			
Residences within 50 Feet	Number	-	1
Residences within 500 Feet	Number	6	6
Construction Constraints having Environmental Impacts			
NWI-mapped Wetlands	Miles	0.8	2.0
NWI-mapped Wetlands	Number	22	39
Prime Farmland	Miles	6.2	5.4
Highly Wind Erodible Soils	Miles	3.1	2.4
Perennial Waterbodies	Number	1	-

Table C-2 Features Comparison of the L3RA-05 - Amended Route Alternative			
Project Features	**Unit**	**L3RA-05 - Amended Route Alternative**	**SPP May 2016 Proposed Route[a]**
State Trails	Number	-	-
Construction Constraints in Crossing Federal, State and County Resources/Jurisdictions			
National Forest Land	Miles	-	-
Tribal Land	Miles	-	-
State Forest Land	Miles	-	<0.1[d]
State WMA Land	Miles	-	-
State AMA Land	Miles	-	-
Technical Constraints Having Associated Environmental Impact			
Trout Streams	Number	-	-
Active State Mineral Leases	Number	-	-
Bedrock Outcrops	Miles	-	-
Railroads Crossed	Number	-	-
Roads Crossed	Number	9	11
Other Major Issues	Number	-	-

a The comparison analysis is based solely on publicly available desktop data.
b The comparison analysis begins at MP 394.6 and ends at MP 404.3 in Clearwater County.
c Greenfield locations are defined as any portion of the route that is greater than 250-feet from the centerline of a known utility or road.
d Land managed by the MDNR Forestry Division outside of the jurisdictional boundaries of a state forest.

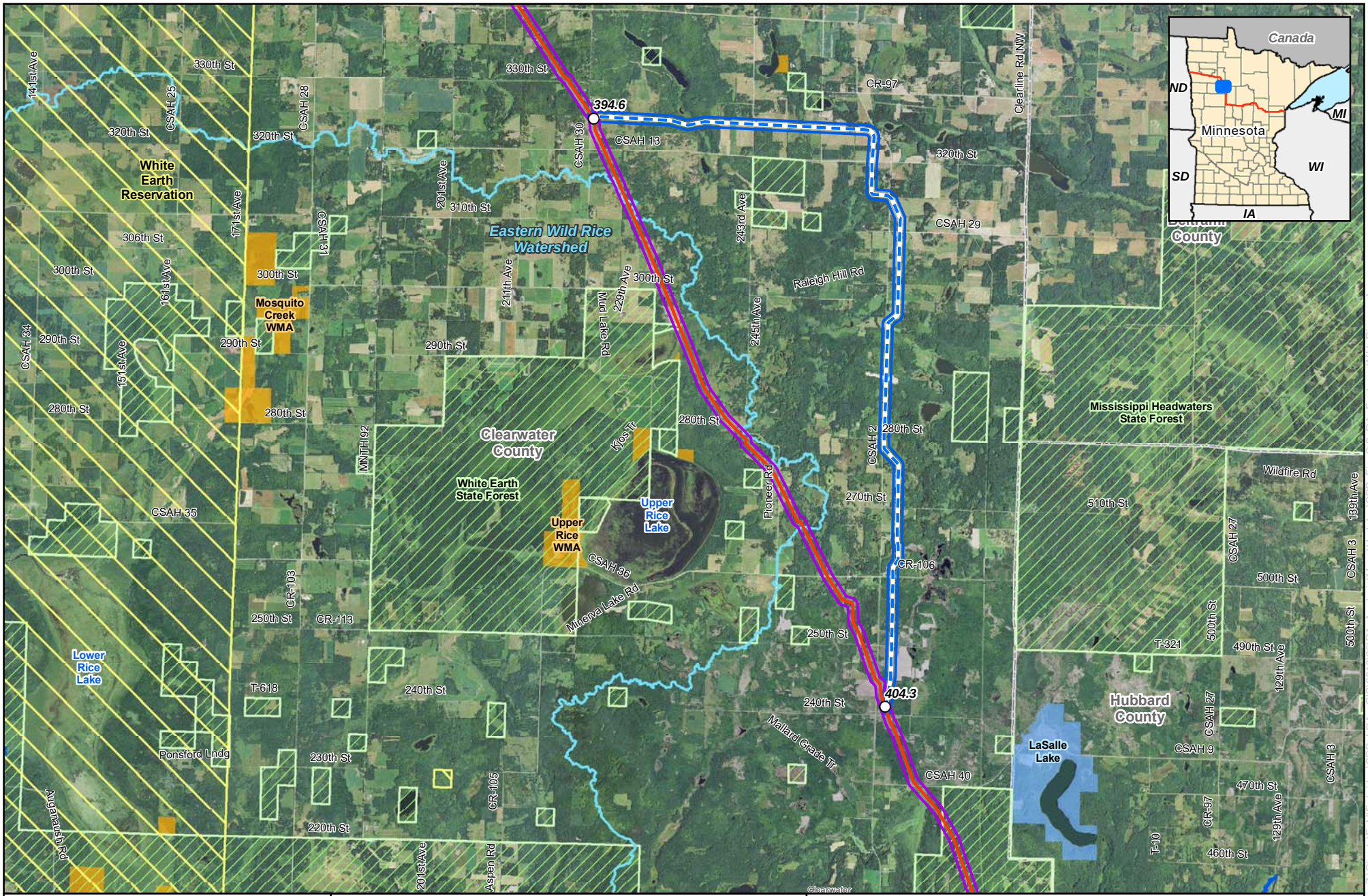

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Figure C-2
North Dakota Pipeline Company LLC
Sandpiper Pipeline Project
L3RA-05 - Amended Route Alternative

- Milepost
- SPP May 2016 Proposed Route (L3R EAW Proposed Route)
- L3RA-05 - Amended Route Alternative
- SPP May 2016 Proposed 750-foot Route Width
- L3RA-05 - Amended Route Alternative 750-foot Route Width
- State Forestry Land
- State Park and Recreation Area
- State Wildlife Management Area
- Tribal Land
- Eastern Wild Rice Watershed Boundary (HUC 09020108)

Source: Z:\Clients\E_HEnbridge\SPP_L3\ArcGIS\2016\05\RA_Analysis\Maps\Updates\SPP_Fig_C-2_RA_Eastern_Wild_Rice.mxd
Date: (5/23/2016)

III. Blandin Route Alternative

A. Description.

As shown on Figure C-3, the Blandin Route Alternative deviates from the SPP May 2016 Proposed Route at MP 519.0 and rejoins the route at MP 522.8, in Aitkin County, Minnesota. This alternative would modify the centerline of the SPP May 2016 Proposed Route where it crosses mostly forested land.

B. Purpose.

NDPC proposes the Blandin Route Alternative to avoid a conservation easement held by MDNR on lands owned by Blandin Paper Company, a Minnesota corporation ("Blandin"). The conservation easement objective is to maintain forest land and minimize development. NDPC has met with MDNR and Blandin on separate occasions regarding the crossing of lands associated with this conservation easement to identify resource concerns.

NDPC and MDNR discussed multiple route alternatives while considering impacts to private landowners, state land as well as other natural resources and engineering constraints. NDPC and MDNR discussed a route alternative which follows an existing Minnesota Power transmission line corridor west of the Proposed Route, as well as another route alternative directly east of the Proposed Route that would also avoid the conservation easement. Further coordination with MDNR indicated that timber resources to the east should be avoided and that MDNR would put forth the Minnesota Power transmission line corridor as a route alternative for study in the draft EIS.

NDPC has chosen to file this Route Alternative as it meets MDNR and Blandin's objective of avoiding the conservation easement as well as specific timber resources east of the Proposed Route. NDPC did not file the Minnesota Power transmission line corridor as a potential route alternative, as this route alternative passes in close proximity to homes near the south side of White Elk Lake, results in hydrologic connectivity to a known wild rice lake (White Elk Lake), and introduces engineering constraints to the hydraulic operations of the pipeline. Specifically, the western portion of the route alternative traverses in the opposite direction of flow. This introduces additional stresses upon the pipeline, which would affect pipeline design and potentially operability and maintenance.

C. Analysis of Potential Impacts.

Table C-3 below compares the impacts of the Blandin Route Alternative to the corresponding segment of the SPP May 2016 Proposed Route. Both the Route Alternative and SPP May 2016 Proposed Route are 3.9 miles long. The Route Alternative contains 1.9 more miles of greenfield crossing. No residences are within 50 feet or 500 feet of the Route Alternative. Two residences are within 500 feet of the SPP May 2016 Proposed Route, and no residences are within 50 feet of the SPP May 2016 Proposed Route. The Route Alternative crosses fewer miles of NWI-mapped wetlands than the SPP May 2016 Proposed Route, 0.2 mile versus 0.8 mile, respectively. Both the Route Alternative and SPP May 2016 Proposed Route cross 5 individual wetlands. The Route Alternative crosses 0.3 mile fewer of prime farmland soils, and 0.1 mile

fewer of highly wind erodible soils than the SPP May 2016 Proposed Route. Both the Route Alternative and SPP May 2016 Proposed Route cross the Blind Lake Trail. The Route Alternative crosses 0.2 mile more of Hill River State Forest land as compared to the SPP May 2016 Proposed Route. Within the Hill River State Forest, the Route Alternative crosses 1.8 fewer miles of land with MDNR forest management designation[3] as compared to the SPP May 2016 Proposed Route. The SPP May 2016 Proposed Route crosses one more road than the Route Alternative. The Route Alternative crosses one known Minnesota Natural Heritage Information System (NHIS) Element Occurrence Polygon for the four-toed salamander. The four-toed salamander is a special concern species. While species of special concern are not protected by Minnesota's Endangered Species Statute or the associated Rules, MDNR requested that NDPC consult on this species. Both routes avoid perennial waterbodies, national forest, tribal land, state WMAs and AMAs, trout streams, active state mineral leases, bedrock outcrops, and railroads.

NDPC proposes that the MPUC accept the proposed Blandin Route Alternative for further environmental analysis in the draft EIS.

Table C-3
Features Comparison of the Blandin Route Alternative

Project Features	Unit	Blandin Route Alternative	SPP May 2016 Proposed Route[a]
Route Description			
Length of Alternative for Comparison[b]	Miles	3.9	3.9
Adjacent to Existing ROW	Miles	-	1.9
Greenfield Route[c]	Miles	3.9	2.0
Socio-economic Constraints			
Residences within 50 Feet	Number	-	-
Residences within 500 Feet	Number	-	2
Construction Constraints having Environmental Impacts			
NWI-mapped Wetlands	Miles	0.2	0.8
NWI-mapped Wetlands	Number	5	5
Prime Farmland	Miles	1.4	1.7
Highly Wind Erodible Soils	Miles	0.7	0.8
Perennial Waterbodies	Number	-	-
State Trails	Number	1[d]	1[d]
Construction Constraints in Crossing Federal, State and County Resources/Jurisdictions			
National Forest Land	Miles	-	-
Tribal Land	Miles	-	-

[3] According to MDNR Forest Inventory Management ("FIM") data in this area, polygons may be classified as Old Forest Management Complex ("OFMC"), Old-Growth Special Management Zones ("SMZ"), or Extended Rotation Forest ("ERF"). Figure C-3 shows polygons designated as OFMC, SMZ, or ERF based on the attribute called MGMT1 in the FIM data. For ERF polygons, additional designations based on the attribute called MGMT2 are indicated in parentheses.

Table C-3 Features Comparison of the Blandin Route Alternative			
Project Features	**Unit**	**Blandin Route Alternative**	**SPP May 2016 Proposed Route[a]**
State Forest Land	Miles	3.1[e]	2.9[e]
State WMA Land	Miles	-	-
State AMA Land	Miles	-	-
Technical Constraints Having Associated Environmental Impact			
Trout Streams	Number	-	-
Active State Mineral Leases	Number	-	-
Bedrock Outcrops	Miles	-	-
Railroads Crossed	Number	-	-
Roads Crossed	Number	2	3
Other Major Issues	Number	1[f]	-

a The comparison analysis is based solely on publicly available desktop data.
b The comparison analysis begins at MP 519.0 and ends at MP 522.8 in Aitkin County.
c Greenfield locations are defined as any portion of the route that is greater than 250-feet from the centerline of a known utility or road.
d Blind Lake Trail.
E Hill River State Forest.
F Four-Toed Salamander NHIS Occurrence.

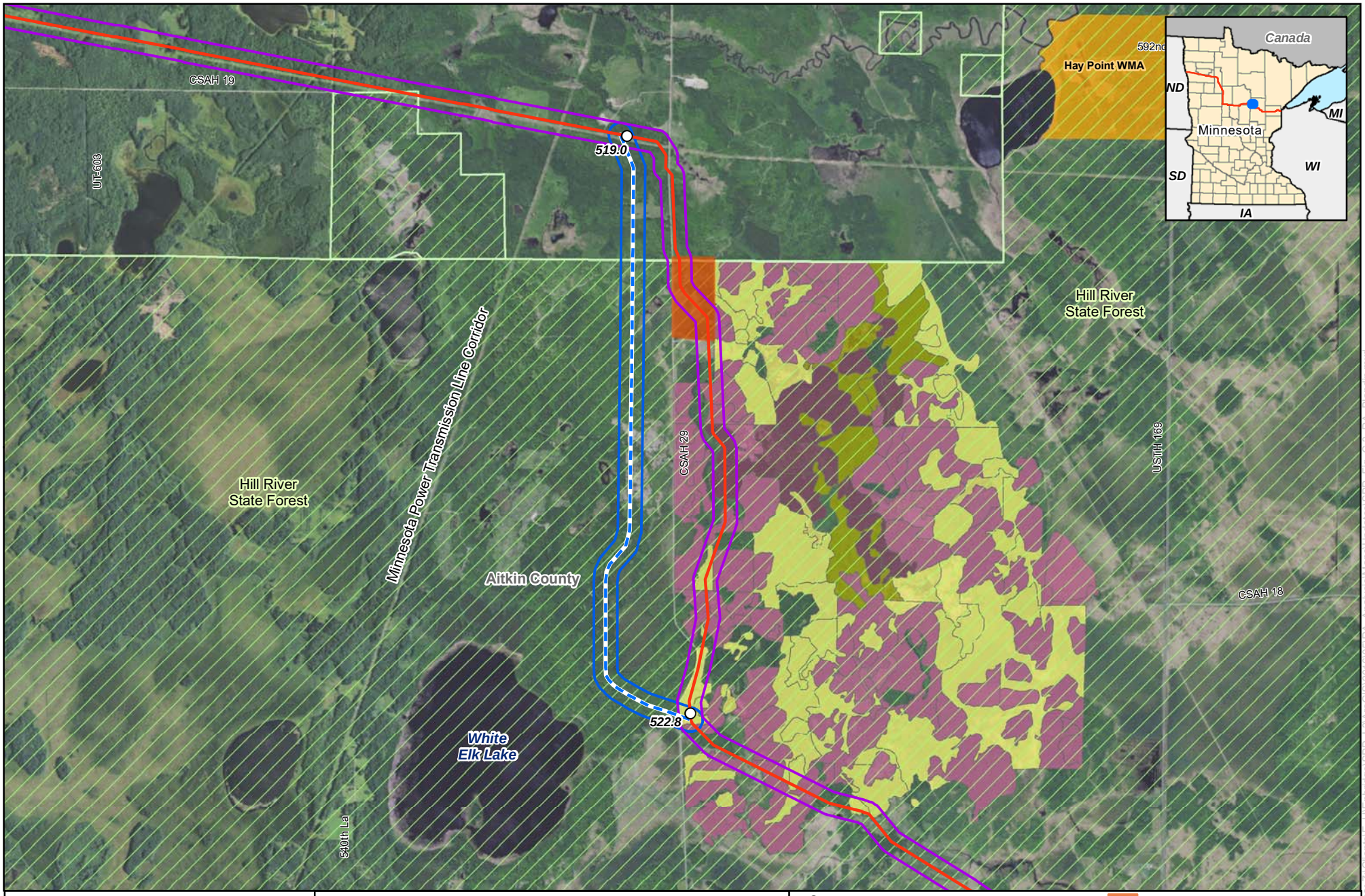

Figure C-3
North Dakota Pipeline Company LLC
Sandpiper Pipeline Project
Blandin Route Alternative

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- Milepost
- SPP May 2016 Proposed Route (L3R EAW Proposed Route)
- Blandin - Route Alternative
- SPP May 2016 Proposed 750-foot Route Width
- Blandin - Route Alternative 750-foot Route Width
- Blandin Easement
- State Forestry Land
- State Wildlife Management Area

MDNR Forest Management Designation

- OFMC
- ERF (OFMC)
- SMZ
- ERF (SMZ)

*Refer to route alternative text for definition of OFMC, SMZ, ERF (OFMC) and ERF (SMZ).

Source: Z:\Clients\E_H\Enbridge\SPP_L3\ArcGIS\20160505\RA_Analysis\Maps\Updates\SPP_Fig_C-3_RA_Blandin.mxd
Date: (5/25/2016)

IV. L3RA-08 - Amended Route Alternative

A. Description.

As shown on Figure C-4, the L3RA-08 - Amended Route Alternative deviates from the SPP May 2016 Proposed Route at MP 562.8 in Aitkin County and rejoins the route at MP 568.3 in Carlton County, Minnesota. This alternative would modify the centerline of the SPP May 2016 Proposed Route where it crosses mostly forest land.

B. Purpose.

On September 30, 2015, Enbridge proposed the Kennecott 2 Route Alternative (listed as L3RA-08 in the DSDD) as a route alternative for L3R in response to concerns raised by the MDNR and Kennecott Exploration Company ("Kennecott") in the SPP routing process. In its April 4, 2014 public comment letter on MPUC Docket Number PL-6668/PPL-13-474 for SPP,[4] MDNR raised concerns regarding potential impacts of the route on active state mineral leases held by Kennecott in Carlton County. The active state mineral leases of concern are located on county tax-forfeit lands.

Kennecott also submitted a proposed route alternative in MPUC Docket Number PL-6668/PPL-13-474[5] for SPP in April 2014 that avoided these active state mineral leases; this route alternative was accepted by the MPUC and advanced to SPP's routing proceeding as RA-39.[6] Following Kennecott's April 2014 submittal of RA-39, NDPC and Enbridge conducted an environmental and constructability review of RA-39 and determined that further centerline alignment was necessary from an environmental and constructability perspective. As proposed by Kennecott, RA-39 would cross the MDNR's Salo Marsh WMA, which NDPC had sought to

[4] Comments- Part 1 of 4, filed by the MDNR on April 4, 2014 (MPUC Doc. ID 20144-98005-01), *In the Matter of the Application of North Dakota Pipeline Company LLC for a Pipeline Routing Permit for the Sandpiper Pipeline Project*, MPUC Docket No. PL6668/CN-13-474. Also available at: Initial Filing- Appendix K- Response to Sandpiper Comment Letters, filed by Enbridge Energy, Limited Partnership on April 24, 2015 (MPUC Doc. ID 20154-109663-01), *In the Matter of the Application of Enbridge Energy, Limited Partnership for a Pipeline Routing Permit for the Line 3 Replacement Project*, MPUC Docket No. PL-9/PPL-15-137.

[5] Proposed Alternative Route Segment, filed by Kennecott on April 4, 2014 (MPUC Doc. ID 20144-98003-01), *In the Matter of the Application of North Dakota Pipeline Company LLC for a Pipeline Routing Permit for the Sandpiper Pipeline Project*, MPUC Docket No. PL6668/CN-13-474.

[6] Order Accepting Alternative Route and System Alternatives for Evidentiary Development, filed by PUC on August 25, 2014 (MPUC Doc. ID 20148-102500-02), *In the Matter of the Application of North Dakota Pipeline Company LLC for a Pipeline Routing Permit for the Sandpiper Pipeline Project*, MPUC Docket No. PL6668/CN-13-474; Comments and Recommendations of Minnesota Department of Commerce Energy Environmental Review and Analysis Staff, filed by DOC EERA on July 17, 2014 (MPUC Doc. ID 20147-101573-01), *In the Matter of the Application of North Dakota Pipeline Company LLC for a Pipeline Routing Permit for the Sandpiper Pipeline Project*, MPUC Docket No. PL6668/CN-13-474.

avoid with a SPP route alternative it submitted in April 2014 (RA-38). Through discussions with Kennecott, NDPC and Enbridge learned that, in addition to the lands Kennecott holds a mineral lease interest in, Kennecott is also interested in other property in the area (together with the mineral leased lands, the "KEX Areas of Interest"). L3RA-08 submitted for L3R addressed Kennecott and MDNR concerns by avoiding crossings of the KEX Areas of Interest, while ensuring that NDPC and Enbridge's environmental and constructability concerns were met. This route alternative was never formally accepted by MPUC for L3R; in addition, the SPP Route Permit process was closed at the time of L3R submittal, and NDPC was not able to submit an equivalent route alternative for SPP.

NDPC has since made minor modifications to L3RA-08 to improve constructability and address landowner concerns, and is filing the L3RA-08 - Amended Route Alternative to replace L3RA-08. NDPC therefore submits an equivalent version of the L3RA-08 - Amended Route Alternative for SPP.

C. Analysis of Potential Impacts.

Table C-4 below compares the impacts of L3RA-08 - Amended Route Alternative to the corresponding segment of the SPP May 2016 Proposed Route. The Route Alternative is 2.1 miles longer than the SPP May 2016 Proposed Route. The Route Alternative contains 7.1 miles of greenfield crossing, while the SPP May 2016 Proposed Route contains 3.9 miles of greenfield crossing. No residences are within 50 feet or 500 feet of the Route Alternative. One residences is within 500 feet of the SPP May 2016 Proposed Route, and no residences are within 50 feet of the SPP May 2016 Proposed Route. The Route Alternative crosses fewer NWI-mapped wetlands than the SPP May 2016 Proposed Route, 1.1 miles versus 1.8 miles, respectively, and 15 versus 17 individual wetlands respectively. The Route Alternative crosses 1.0 mile more of prime farmland soils, and 0.1 mile fewer of highly wind erodible soils than the SPP May 2016 Proposed Route. Both routes cross the west branch of the Kettle River. The Route Alternative has 2 fewer crossings of snowmobile trails and crosses 0.6 mile more of forestry land managed by the MDNR as compared to the SPP May 2016 Proposed Route. The SPP May 2016 Proposed Route crosses seven active state mineral leases while the Route Alternative avoids active state mineral leases. The SPP May 2016 Proposed Route crosses one more road than the Route Alternative. Both routes avoid national forest, tribal land, state WMAs and AMAs, trout streams, bedrock outcrops, and railroads.

NDPC proposes to adopt the proposed L3RA-08 - Amended Route Alternative as part of its Proposed Route as it does not introduce any significant impacts to environmental features as outlined in Table C-4 and addresses private and state concerns with pipeline development across active state mineral leases, while maintaining NDPC's preference to avoid the Salo Marsh WMA. NDPC respectfully requests that MPUC accept the proposed L3RA-08 - Amended Route Alternative for further environmental analysis in the draft EIS.

Table C-4
Features Comparison of the L3RA-08 - Amended Route Alternative

Project Features	Unit	L3RA-08 - Amended Route Alternative	SPP May 2016 Proposed Route[a]
Route Description			
Length of Alternative for Comparison[b]	Miles	7.7	5.6
Adjacent to Existing ROW	Miles	0.6	1.7
Greenfield Route[c]	Miles	7.1	3.9
Socio-economic Constraints			
Residences within 50 Feet	Number	-	-
Residences within 500 Feet	Number	-	1
Construction Constraints having Environmental Impacts			
NWI-mapped Wetlands	Miles	1.1	1.8
NWI-mapped Wetlands	Number	15	17
Prime Farmland	Miles	1.6	0.6
Highly Wind Erodible Soils	Miles	1.2	1.3
Perennial Waterbodies	Number	1	1
State Trails	Number	1[d]	3[d]
Construction Constraints in Crossing Federal, State and County Resources/Jurisdictions			
National Forest Land	Miles	-	-
Tribal Land	Miles	-	-
State Forest Land	Miles	0.8[e]	0.2[e]
State WMA Land	Miles	-	-
State AMA Land	Miles	-	-
Technical Constraints Having Associated Environmental Impact			
Trout Streams	Number	-	-
Active State Mineral Leases	Number	-	7
Bedrock Outcrops	Miles	-	-
Railroads Crossed	Number	-	-
Roads Crossed	Number	2	3
Other Major Issues	Number	-	-

a The comparison analysis is based solely on publicly available desktop data.
b The comparison analysis begins at MP 562.8 in Aitkin County and ends at MP 568.3 in Carlton County.
c Greenfield locations are defined as any portion of the route that is greater than 250-feet from the centerline of a known utility or road.
d Snowmobile trails managed by the MDNR.
e Land managed by the MDNR Forestry Division outside of the jurisdictional boundaries of a state forest.

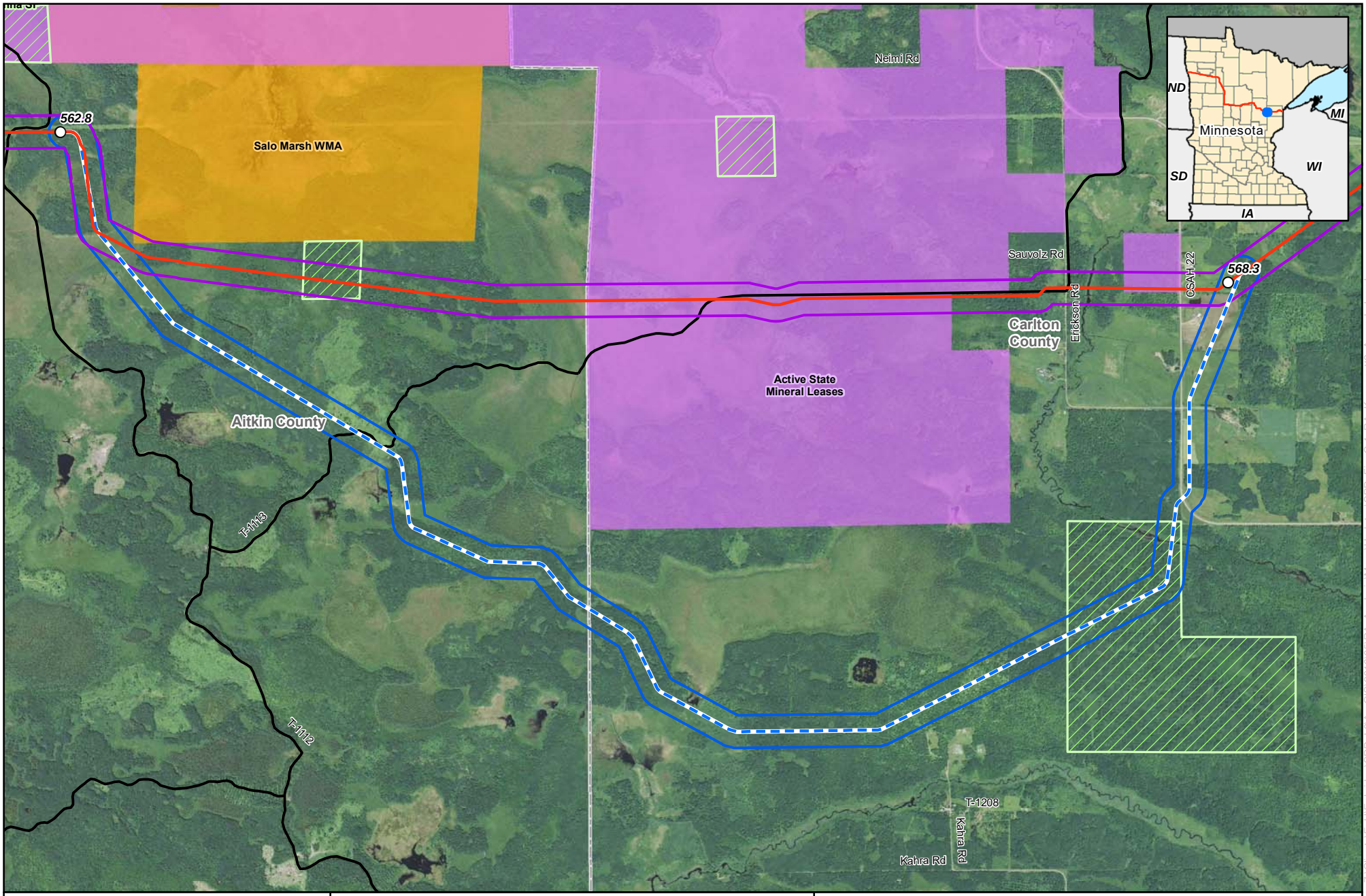

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Figure C-4
North Dakota Pipeline Company LLC
Sandpiper Pipeline Project
L3RA-08 - Amended Route Alternative

- Milepost
- SPP May 2016 Proposed Route (L3R EAW Proposed Route)
- L3RA-08 - Amended Route Alternative
- SPP May 2016 750-foot Route Width
- L3RA-08 - Amended Route Alternative 750-foot Route Width
- Snowmobile Trail
- State Forestry Land
- State Wildlife Management Area
- Active State Mineral Lease

Source: Z:\Clients\E_H\Enbridge\SPP_L3\ArcGIS\2016\05\RA_Analysis\Maps\Updates\SPP_Fig_C-4_RA_Kennecott2_Amended.mxd
Date: (5/23/2016)

Appendix D

Centerline Adjustments within the SPP May 2016 750-foot Route Width Due to Landowner and Constructability Reasons

Table D-1 Centerline Adjustments within the SPP May 2016 750-foot Proposed Route Width Due to Landowner Reasons			
Beginning Milepost	**Ending Milepost**	**Length (miles)**	**Justification**
382.5	382.6	0.1	Adjust crossing angle of Minn-Cann pipelines at Minn-Cann's request
388.5	388.6	0.1	Adjust crossing angle of Minn-Cann pipelines at Minn-Cann's request
399.8	399.9	0.1	Adjust crossing angle of Minn-Cann pipelines at Minn-Cann's request
401.2	401.3	0.1	Adjust crossing angle of Minn-Cann pipelines at Minn-Cann's request
409.2	409.4	0.2	Adjust crossing angle of Minn-Cann pipelines at Minn-Cann's request
410.2	410.3	<0.1	Adjust crossing angle of Minn-Cann pipelines at Minn-Cann's request
476.6	476.7	0.1	Move pipeline north to avoid cattle pond

Table D-2 Centerline Adjustments within the SPP May 2016 750-foot Proposed Route Width Due to Constructability Reasons			
Beginning Milepost	**Ending Milepost**	**Length (miles)**	**Justification**
378.7	379.6	0.8	Move south to accommodate L3R
418.8	418.9	0.1	Remove bend in wetland
419.0	419.0	<0.1	Straighten centerline from 40-foot offset from L3R
424.2	424.2	<0.1	Shift bend north
425.7	426.2	0.5	Adjust for better wetland and creek crossing
470.0	470.1	0.1	Move south for better wetland crossing
483.5	483.7	0.2	Adjust to accommodate L3R
488.7	489.2	0.5	Add 40-foot spacing between SPP and L3R for saturated wetlands
602.2	602.4	0.2	Adjust for better wetland crossing

Appendix E

Expanded Route Widths outside the SPP May 2016 750-foot Route Width to Accommodate Additional Temporary Workspace Areas

Table E-1 Expanded Route Widths outside the SPP May 2016 750-foot Proposed Route Width to Accommodate Additional Temporary Workspace Areas			
Milepost	**Request to Expand Route Width (Feet, Approximate)**	**Justification[a]**	**Figure Reference**
308.6	1500 x 200	Horizontal Directional Drill ("HDD") Pullstring	E-1
309.6	1000 x 200	HDD Pullstring	E-2
333.6	600 x 300	Hydrostatic Test Access	E-3
362.4	200 x 200	Hydrostatic Test Access	E-4
430.8	550 x 200	Hydrostatic Test Access	E-5
502.4	520 x 130	Hydrostatic Test Access	E-6
535.1	800 x 200	Hydrostatic Test Access	E-7
537.1	2000 x 200	HDD Pullstring	E-8
589.6	200 x 125	HDD Pullstring	E-9
597.6	1400 x 130	Hydrostatic Test Access	E-10
a The expanded route widths at hydrostatic test water appropriation sites extends an additional 50 feet into the waterbody to account for water appropriation equipment, including but not limited to water pumps and screened intake structures, that will be placed within the waterbody.			

ENBRIDGE

0 150 300 Feet

N

Figure E-1
North Dakota Pipeline Company LLC
Sandpiper Pipeline Project
Expanded Route Width - MP 308.6

- Milepost
- SPP May 2016 Proposed Route
- SPP May 2016 Proposed 750-foot Route Width
- Expanded Route Width

Source: Z:\Clients\E_H\Enbridge\SPP_L3\ArcGIS\20160505\RA_Analysis\Maps\Updates\SPP_Expanded_Route_Widths_1-4.mxd
Date: (5/23/2016)

ENBRIDGE

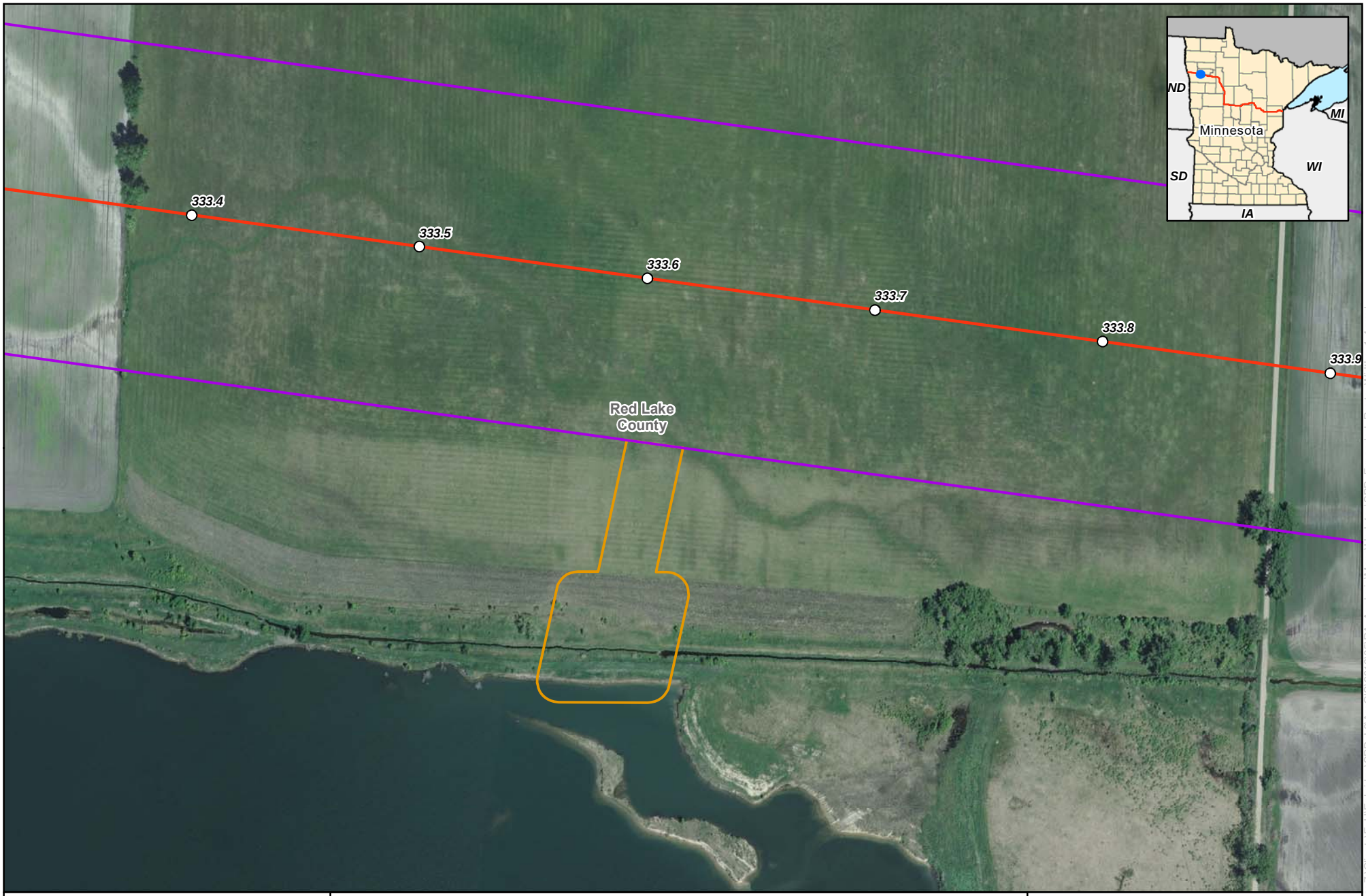
0 150 300 Feet

N

Figure E-2
North Dakota Pipeline Company LLC
Sandpiper Pipeline Project
Expanded Route Width - MP 309.6

- Milepost
- SPP May 2016 Proposed Route
- SPP May 2016 Proposed 750-foot Route Width
- Expanded Route Width

Source: Z:\Clients\E_H\Enbridge\SPP_L3\ArcGIS\20160505\RA_Analysis\Maps\Updates\SPP_Expanded_Route_Widths_1-4.mxd
Date: (5/23/2016)



ENBRIDGE

0 150 300 Feet

N

Figure E-3
North Dakota Pipeline Company LLC
Sandpiper Pipeline Project
Expanded Route Width - MP 333.6

- Milepost
- SPP May 2016 Proposed Route
- SPP May 2016 Proposed 750-foot Route Width
- Expanded Route Width

Source: Z:\Clients\E_H\Enbridge\SPP_L3\ArcGIS\20160505\RA_Analysis\Maps\Updates\SPP_Expanded_Route_Widths_1-4.mxd
Date: (5/23/2016)

ENBRIDGE

0 150 300 Feet

N

Figure E-4
North Dakota Pipeline Company LLC
Sandpiper Pipeline Project
Expanded Route Width - MP 362.4

- Milepost
- SPP May 2016 Proposed Route
- SPP May 2016 Proposed 750-foot Route Width
- Expanded Route Width

Source: Z:\Clients\E_H\Enbridge\SPP_L3\ArcGIS\20160505\RA_Analysis\Maps\Updates\SPP_Expanded_Route_Widths_1-4.mxd
Date: (5/23/2016)

ENBRIDGE

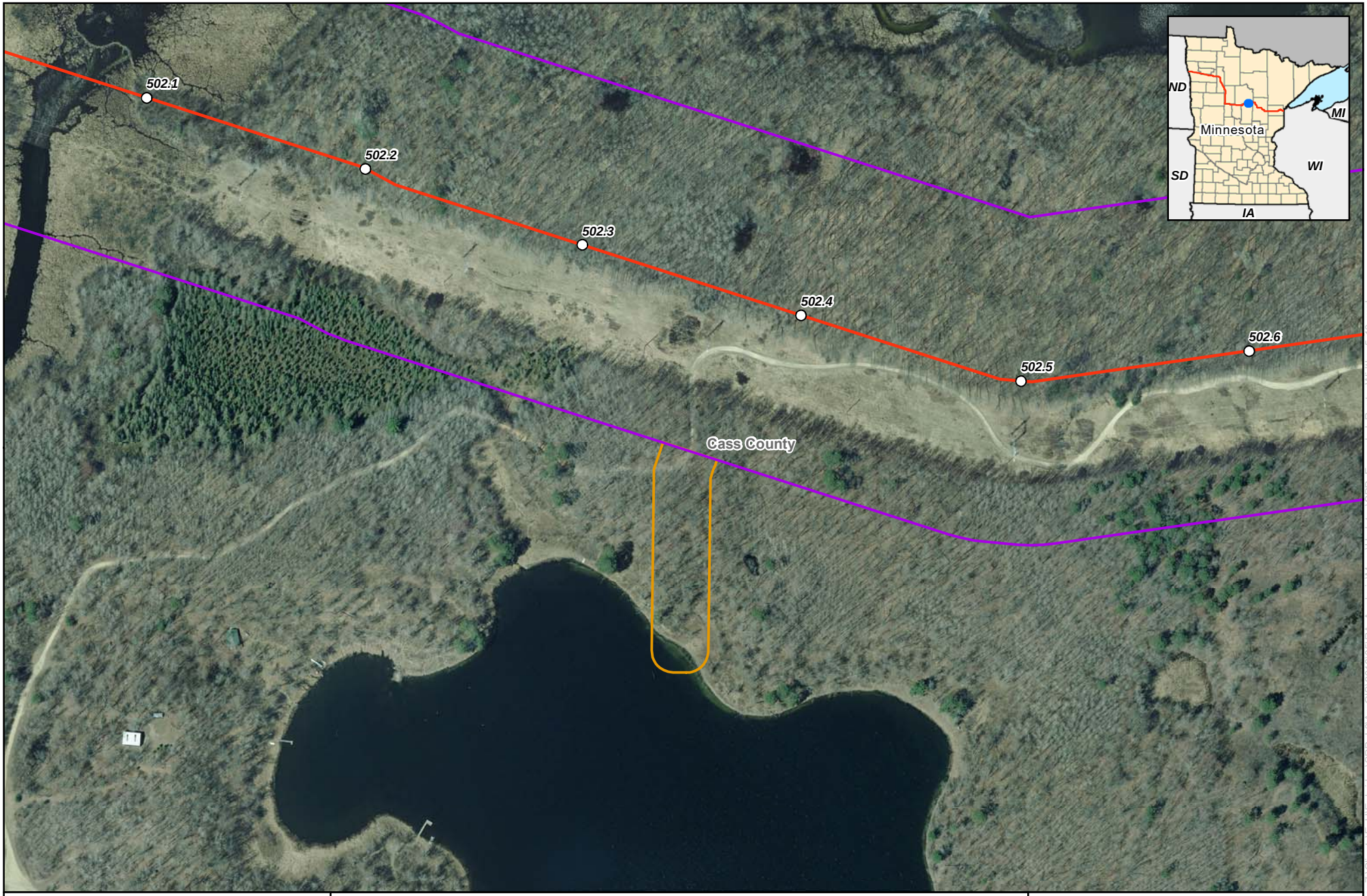
0 150 300 Feet

N

Figure E-5
North Dakota Pipeline Company LLC
Sandpiper Pipeline Project
Expanded Route Width - MP 430.8

- Milepost
- SPP May 2016 Proposed Route (L3R EAW Proposed Route)
- SPP May 2016 Proposed 750-foot Route Width
- Expanded Route Width

Source: Z:\Clients\E_H\Enbridge\SPP_L3\ArcGIS\20160505\RA_Analysis\Maps\Updates\SPP_Expanded_Route_Widths_5-10.mxd
Date: (5/23/2016)



ENBRIDGE

0 150 300 Feet

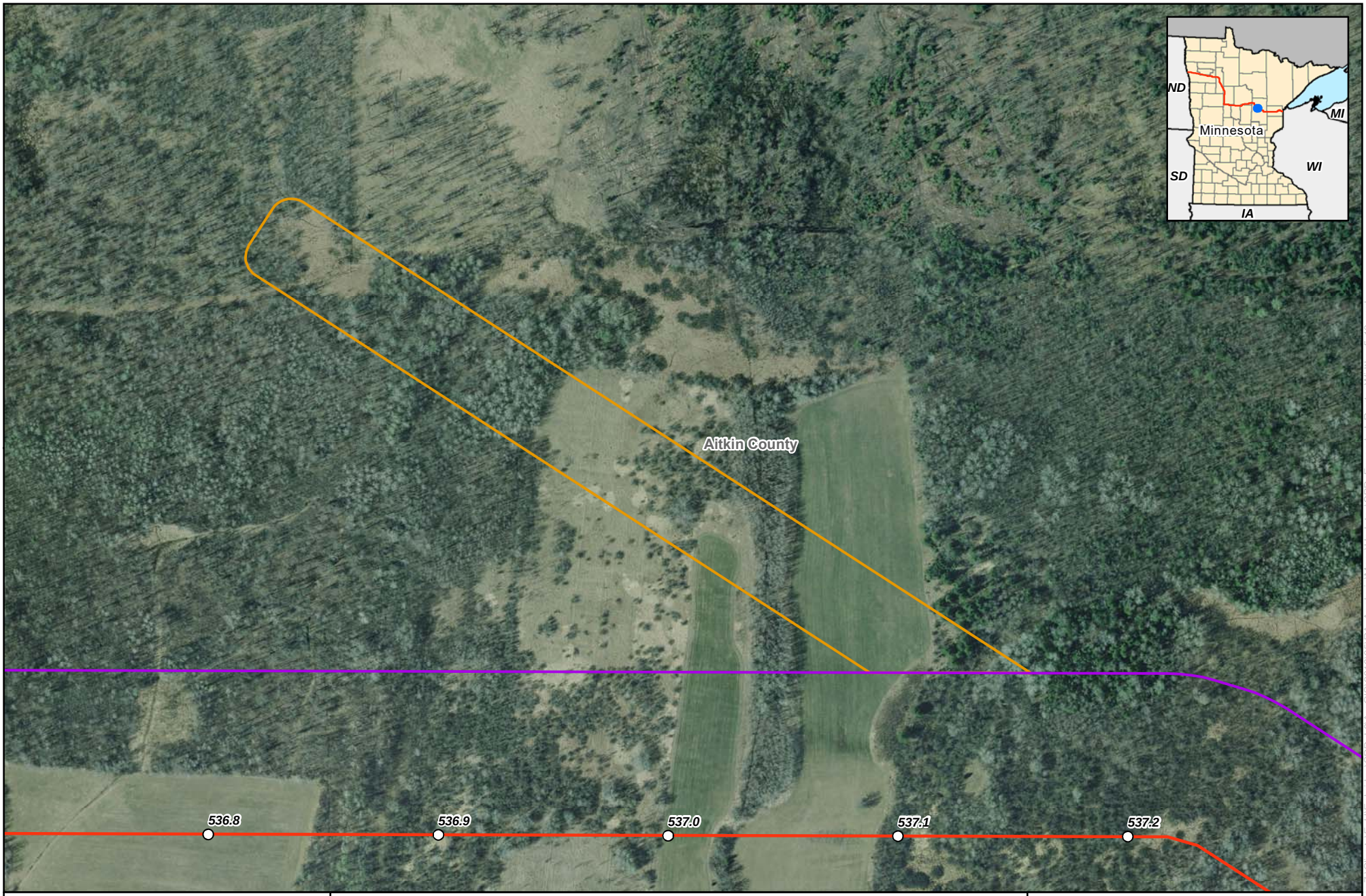
N

Figure E-6
North Dakota Pipeline Company LLC
Sandpiper Pipeline Project
Expanded Route Width - MP 502.4

- Milepost
- SPP May 2016 Proposed Route (L3R EAW Proposed Route)
- SPP May 2016 Proposed 750-foot Route Width
- Expanded Route Width

Source: Z:\Clients\E_H\Enbridge\SPP_L3\ArcGIS\20160505\RA_Analysis\Maps\Updates\SPP_Expanded_Route_Widths_5-10.mxd
Date: (5/23/2016)

Figure E-7
North Dakota Pipeline Company LLC
Sandpiper Pipeline Project
Expanded Route Width - MP 535.1



ENBRIDGE

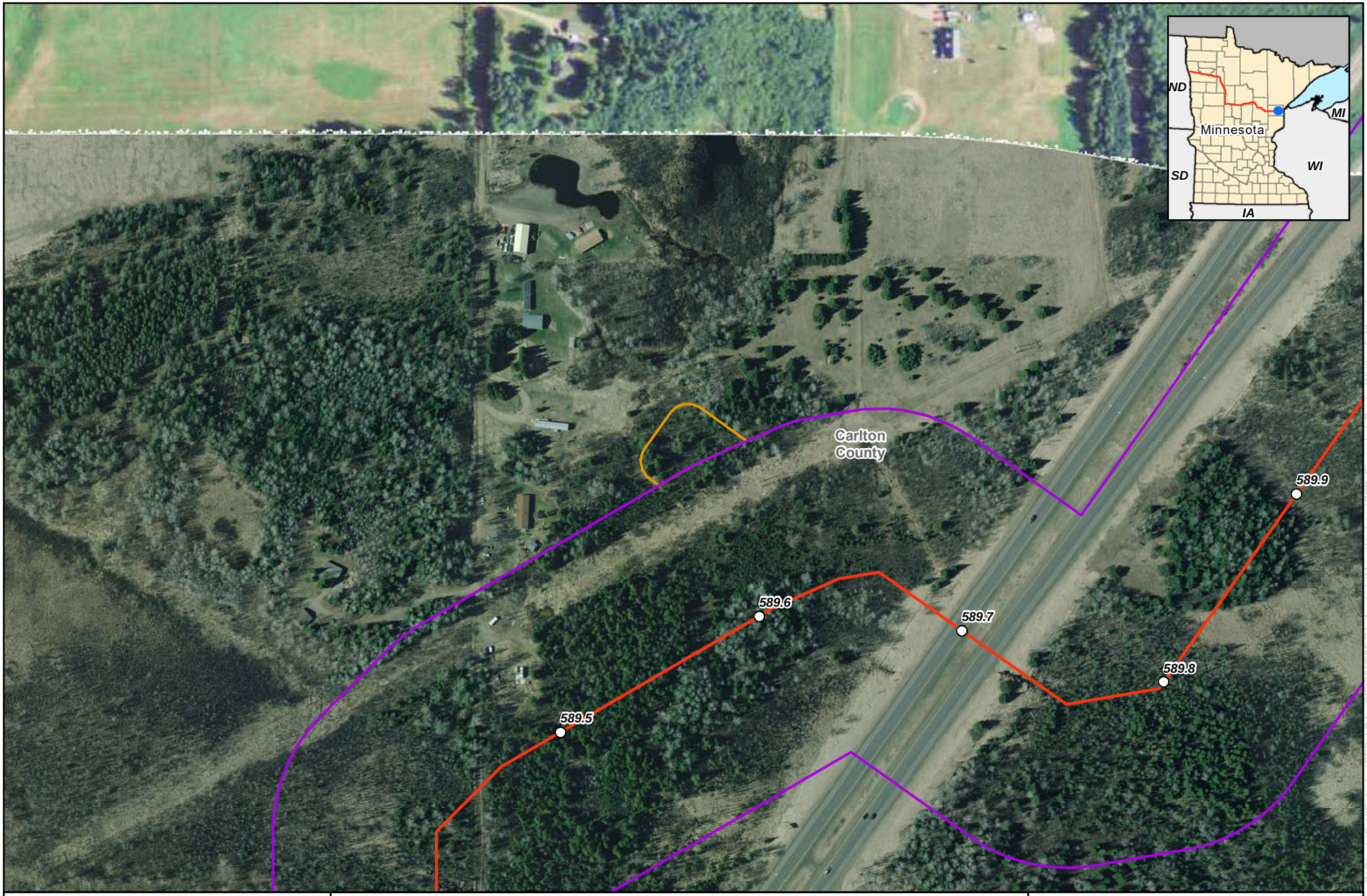
0 150 300 Feet

N

Figure E-8
North Dakota Pipeline Company LLC
Sandpiper Pipeline Project
Expanded Route Width - MP 537.1

- Milepost
- SPP May 2016 Proposed Route (L3R EAW Proposed Route)
- SPP May 2016 Proposed 750-foot Route Width
- Expanded Route Width

Source: Z:\Clients\E_H\Enbridge\SPP_L3\ArcGIS\20160505\RA_Analysis\Maps\Updates\SPP_Expanded_Route_Widths_5-10.mxd
Date: (5/23/2016)



ENBRIDGE

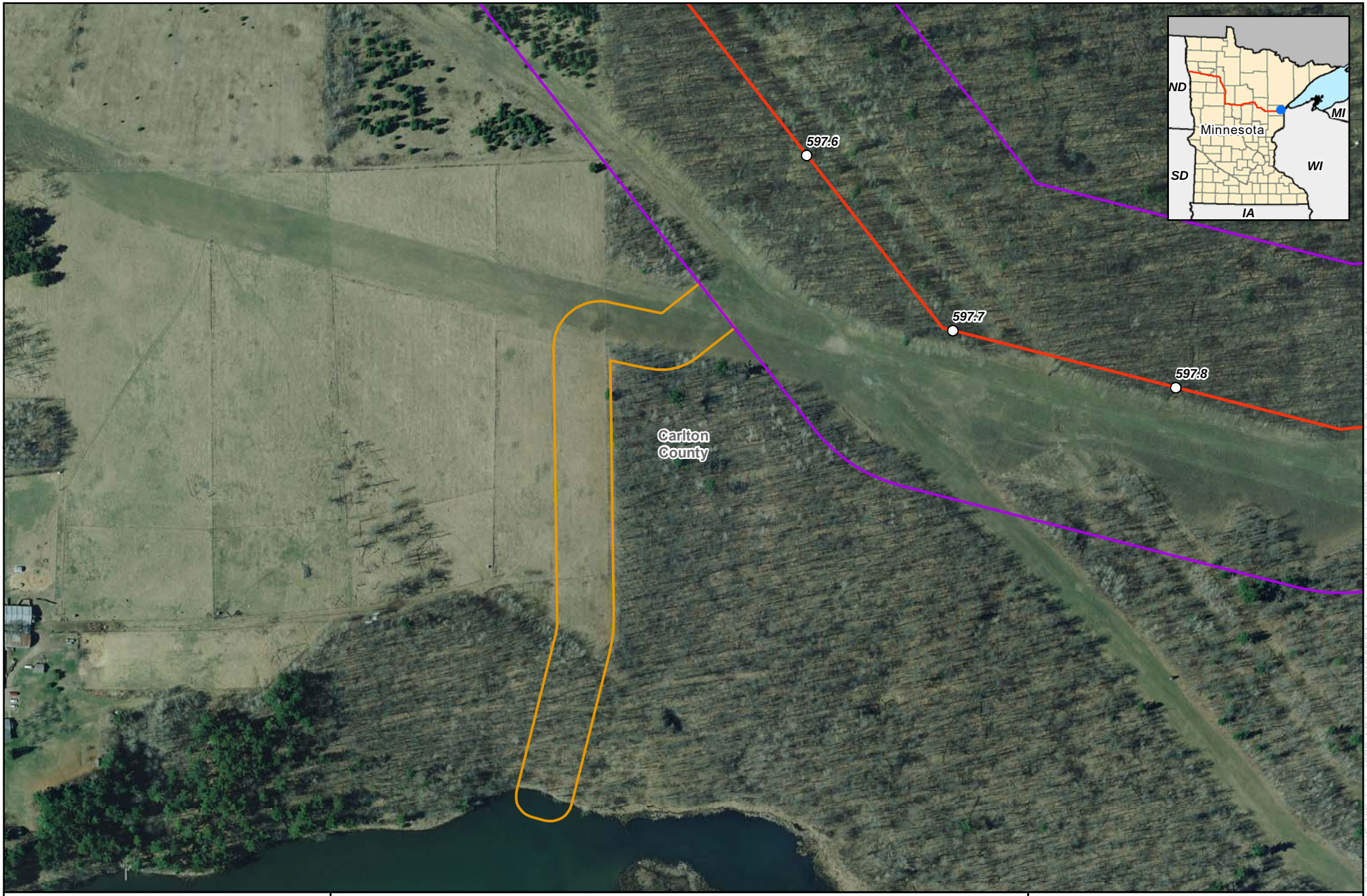
0 150 300 Feet

N

Figure E-9
North Dakota Pipeline Company LLC
Sandpiper Pipeline Project
Expanded Route Width - MP 589.6

- Milepost
- SPP May 2016 Proposed Route (L3R EAW Proposed Route)
- SPP May 2016 Proposed 750-foot Route Width
- Expanded Route Width

Source: Z:\Clients\E_H\Enbridge\SPP_L3\ArcGIS\20160505\RA_Analysis\Maps\Updates\SPP_Expanded_Route_Widths_5-10.mxd
Date: (5/23/2016)



ENBRIDGE

0 150 300 Feet

N

Figure E-10
North Dakota Pipeline Company LLC
Sandpiper Pipeline Project
Expanded Route Width - MP 597.6

- Milepost
- SPP May 2016 Proposed Route (L3R EAW Proposed Route)
- SPP May 2016 Proposed 750-foot Route Width
- Expanded Route Width

Source: Z:\Clients\E_H\Enbridge\SPP_L3\ArcGIS\20160505\RA_Analysis\Maps\Updates\SPP_Expanded_Route_Widths_5-10.mxd
Date: (5/23/2016)

Appendix F

DOC-EERA Attachment 1A

Attachment 1A. Resources to be Evaluated and Assessment Methods

Major Resource	Resource Feature	Datasets and Data Sources	Quantitative Unit of Comparison	Regional Analysis Area (distance beyond centerline or counties intersected by alignment) for Project Impacts	Alignment Analysis Area (will route width, ROW, and temp const. staging be compared?) for Project Impacts	Spill Impact Analysis	Regulatory Driver (law, statute, rule, guidance plan)
Human Settlement							
	Aesthetics and Visual Resources	For Federal land crossings, apply USFS Visual Resource (Aesthetic) Management System [example application: http://www.blm.gov/style/medialib/blm/nv/nepa/ruby_pipeline_project/rod/attachment_d/appendix_p.Par.59817.File.dat/Appendix%20P%20part%201%20.pdf]	# homes/parks/reststops; #federal lands for which stnds apply	USFS standard	yes	no	MEPA criteria for analysis (M.S. 116D); USFS Guidelines
	Housing	Aerial photography + applicant's EIR	# of residential structures	1000 feet (tentatively)	yes	yes	Pipeline routing (M.R. 7852.1900)
	Noise	State noise standards and guidelines for sensitive receptors	# of sensitive receptors	per state standards	yes	no	MEPA criteria for analysis (M.S. 116D); Noise Pollution Control (M.R. 7030)
	Property Value	Minnesota County datasets applied on a county basis	none - qualitative analysis	whole county intersected by an alignment	no	no	MEPA criteria for analysis (M.S. 116D)
	Zoning and Land Use Compatibility at the Local Level	County and incorporated area records	none - qualitative for identifying permits and approvals	whole county intersected by an alignment	no	no	MEPA criteria for analysis (M.S. 116D)
	Population	US Census data, 2010; MN DEED; American Community Survey	# of incorporated areas (broken out by size class)	5 miles	yes	yes	Pipeline routing (M.R. 7852.1900)
	Income		median income	whole county intersected by an alignment	no	no	Council of Environmental Quality Guidelines;MEPA criteria for analysis (M.S. 116D)
	Environmental Justice	US Census data, 2010; MN DEED	tabulation by race classes and population	whole county intersected by an alignment	no	no	E.O. 12198; Council of Environmental Quality Guidelines; MEPA criteria for analysis (M.S. 116D)
	Existing Contaminated Sites	USEPA facility registration service; MnDOT	# units of preexisting contaminated sites	5 miles	yes	yes	Hazardous waste generation (M.R. 7045); MEPA criteria for analysis (M.S. 116D)
Transportation and Public Services							
	Roadways	State highway and county highway system files; Roads MnDOT TIS	# of crossings	none	yes	no	M.R. 8810 Utility Permit
	Public Utilities	datasets for electric, gas utilities, generating facilities, water/sewer	# of utility features	area of analysis per regulations	yes	yes	Utility Permit (M.R. 8810); Minn. Stats. 84.415 and Minnesota Rules 6135 (crossing public lands and waters)
	Emergency Services	USGS national structures dataset; MnDOT	qualitative	none	no	yes	Hazardous materials incidence response (M.R. 7514)
	Airports	FAA national flight data center, MnDOT GIS data; NAVAIDS Airports, Runways	# of airports or landing strips	per airport regulations area of analysis	yes	no	Airport zoning stnds (M.R. 8800.24)
	Schools	Mn databases; USGS GNIS Schools	# units	1 mile	yes	no	Pipeline routing (M.R. 7852.1900
	Churches (incl. cemetary)	ESRI and other sources; USGS GNIS Churches and Cemeteries	# units	1 mile	yes	no	M.S. 138 (historic sites)
Economics							
	Agriculture	2011 USGS National Land Cover Database; NRCS prime and unique farmland; agricultural land; FSA CRP; MDA (ag water quality certified farms, on-farm research farms, organic production/certification farms); GAP landcover, NRCS SSURGO data by county; USDA CropScape; MN Agricultural Statistics Division	proportion of land cover	whole county intersected by an alignment	yes	no	Protection public facilities and agricultural land M.S. 216G.07); Agricultural Impact Mitigation Plan Permit (M.S. 216B.243, subd 7); Noxious Weed Management Plan (18G.04)
	Forestry	2011 USGS National Land Cover Database; MnDNR (forest resource types, forest stewardship plan locations), MnGeo GAP land cover	proportion of land cover	whole county intersected by an alignment	yes	no	Pipeline routing (M.R. 7852.1900)
	Mining	2011 USGS National Land Cover Database; MnGeo; MnDNR GAP land cover	# mineral leases/mine permits	whole county intersected by an alignment	yes	no	Pipeline routing (M.R. 7852.1900); Surface leases (M.R. 6125.07)
	Recreation and Tourism	2011 USGS National Land Cover Database;USACE recreation and publis use areas parks, sild and scenic rivers, etc); USDI federal lands; northern tallgrass prairie reserve; Mn Office of Tourism; GAP landcover; State Trails of MN	# of recreation/tourism designated land cover types	whole county intersected by an alignment	yes	no	Pipeline routing (M.R. 7852.1900); Wild, Scenic, and Recreational Rivers (M.R. 6105)
Cultural Resources							
	Archaeological Resources	Applicant data; MN SHPO, State Historic Site Network, Register of Historic Places (state/national)	# sites intersected	SHPO stnds	yes	no	M.S. 138 (historic and archaeological sites)
	Historic Resources	Applicant data; MN SHPO, State Historic Site Network, Register of Historic Places (state/national)	# sites intersected	SHPO stnds	yes	no	M.S. 138 (historic and archaeological sites)
	Cultural Values	TCP data sources	none - qualitative discussion	none	no	no	Pipeline routing (M.R. 7852.1900)
	Treaty Areas	TCP data sources	none - qualitative discussion	none	no	no	Pipeline routing (M.R. 7852.1900)
Natural Environment							
	Air Quality	Applicant data; attainment area datasets	existence/absence of a nonattainment area	whole county intersected by an alignment	no	no	MPCA: State Implementation Plan (CAA Title I section 1 attainment); Air Emission Inventory (M.S./M.R.; 116.091, 116.07/7019.3000); MPCA: Capped Emissions Permit (M.R. 7007.1140-7007.1148)
	Wetlands	datasets: NWI/NWI Mn update; Circular 39 Classification; special feature wetlands: MPCA wetland WQ monitoring sites; wetland bank sites; Calcareous fen sites; wild rice	# units of special feature wetlands; # cowardin type classes; acres by types	5 miles	yes	yes	Wetlands Conservation Act (M.S./M.R. -103G/8420); MEPA criteria for analysis (M.S. 116D); Pipeline routing (M.R. 7852.1900); Fen Management Plan (M.S. 103G.223); Rare Wetland Communities (M.R. 8420.0515, Subp. 3)
	Waterbodies	USGS National National hydrography Flowline and Waterbody Database, US National Atlas Water Feature Line dataset; EPA/MPCA Impaired Streams Database; PWI sitesMN Public Water Waters - Watercourses and Water Basins; ORVW sites; IBI statewide maps	# and proportion of total size	5 miles	yes	yes	Wild, Scenic, and Recreational Rivers (M.R. 6105); Outstanding Resource Value Waters (M.R. 7050.018); Public Waters (M.S. 103G.245); MEPA criteria for analysis (M.S. 116D); Pipeline routing (M.R. 7852.1900)
	Watersheds	Watershed TMDLs/Watershed Restoration and Protection Plan watersheds; MN WD and WMO jurisdictions	qualitative	5 miles	yes	yes	WRAPs/TMDLs (MPCA: CWA 103(d)); Watershed management (M.S. 103D/108/110B)
	Clean Water Funds sites	BWSR CWF study areas with defined map unit	# sites	county (BWSR database is by county)	yes	yes	Clean Water Legacy Act (M.S. 114D)
	Floodplains	FEMA maps	# sites or areas	FEMA stnds	yes	yes	Floodplain Management (M.S. 104)

Major Resource	Resource Feature	Datasets and Data Sources	Quantitative Unit of Comparison	Regional Analysis Area (distance beyond centerline or counties intersected by alignment) for Project Impacts	Alignment Analysis Area (will route width, ROW, and temp const. staging be compared?) for Project Impacts	Spill Impact Analysis	Regulatory Driver (law, statute, rule, guidance plan)
	Groundwater	MDH well and source protection areas; applicant (storage tanks per pump station or other facility projected for each alignment); Karst Features - Inventory Points; Ground Water Contamination Susceptibility in Minnesota	# sites or areas	5 miles	yes	yes	Groundwater Protection (M.S. 103H); Appropriation Permit (M.S. 103G.271)
	Soil Resources	NRCS MLRA database; STATSGO2	qualitative	none	no	yes	MPCA: NPDES/SDS Permit (M.S./M.R. - 115-116/7001, 7090)
	Natural Communities and Habitat						
	Native Flora	DNR ECS subsection (land type phase where available); DNR mapped prairie conservation easements or other mapped vegetation (excluding rare/unique); DNR ECS; MCBS Railroad Prairies; GAP landcover; DNR Calcareous Fens	# sites of mapped native flora	5 miles	yes	yes	MEPA criteria for analysis (M.S. 116D); Pipeline routing (M.R. 7852.1900); Native Prairie Bank (M.S. 84.96)
	Invasive species	MDA or County mapped areas of noxious weed infestations' MNDNR mapped invasive species areas (zebra mussels, etc)	qualitative	none	no	no	Noxious Weed Management Plan (18G.04)
	Designated Habitat	DNR State Wildlife Management Areas; WPAs; BWSR State Funded Conservation Easements; state easements; other mapped game animal special use areas; USFWS migratory bird datasets; trout streams	# of sites	5 miles	yes	yes	MEPA criteria for analysis (M.S. 116D); Wildlife Management (M.R. 6230)
Rare and Unique Resources							
	State and Federally Listed	USFWS general listed species regions and critical habitat areas; NHIS database; Critical Habitat poly; NHIS polygon and point data	# units of NHIS polygons/points; # federal habitat areas	county	yes	yes	MNDNR: Takings Permit (for Endangered or Threatened Species)(M.S./M.R. - 84.0895/6134, 6212.1800 - 6212.2300); Endangered Species Act (Section 7)
	State Natural Heritage and Other Significant Sites	NHIS database non species data (aggregation areas, etc) NHIS polygon and point data	# units	county	yes	yes	MEPA criteria for analysis (M.S. 116D); Critical Habitat (M.S./M.R. - 84.033/6136)
	Species in Greatest Conservation Need	GAP land cover/DNR SWAP datasets (2015/2016 update); Native Plant Communities; MBS Sites of Biodiversity Significance; MN Prarie Conservation Plan and Glacial Lake Agassiz features	# units	5 miles	yes	yes	Tomorrow's Habitat for the Wild and Rare; MEPA criteria for analysis (M.S. 116D)
	Scientific and Natural Areas	DNR datasets for SNAs	# units	county	yes	yes	Scientific and Natural Areas and Critical Habitat (M.S./M.R. - 84.033/6136); MEPA criteria for analysis (M.S. 116D)
High Consequence Areas							
	Populated Areas	PHMSA national pipeline mapping system	# sites and size	no	no	yes	USDOT PHMSA regulations
	Drinking Water Sources	Enbridge Energy (data restricted source)	# sites and size	no	no	yes	USDOT PHMSA regulations
	Unusually Sensitive Ecological Areas	Enbridge Energy (data restricted source)	# sites and size	no	no	yes	USDOT PHMSA regulations
	Natural disaster hazard zones	PHMSA national pipeline mapping system	# sites and size	no	no	yes	USDOT PHMSA regulations