



January 23, 2015

The Honorable Eric Lipman
Minnesota Office of Administrative Hearings
600 North Robert Street
P.O. Box 64620
St. Paul, MN 55164-0620

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. PL6668/CN-13-473
OAH Docket No. 8-2500-31260

Dear Judge Lipman:

The Minnesota Pollution Control Agency (MPCA) submits the following comments for consideration by the Administrative Law Judge (Judge) in making recommendations to the Public Utilities Commission (Commission) in this matter. The MPCA's comments provide information addressing several of the criteria set forth in Minn. Rule 7853.0130 for making a determination on a certificate of need for the Sandpiper Pipeline Project (SA-Applicant) proposed by North Dakota Pipeline Company ("NDPC" or "Applicant"). The MPCA respectfully requests that if a determination of need is reached in this proceeding, the certificate of need be conditionally granted contingent upon suitable modification of SA-Applicant to protect and avoid high quality natural and environmental resources, and the inclusion in the Route Proceeding, Docket No. CN-13-474, of SA-03 and any other System Alternative that meets the identified need, pursuant to the Commission's authority under Minn. Rule 7853.0800. The MPCA will gladly provide additional information or comments that the Judge may find helpful in the course of this proceeding.

A. The MPCA's comments address four of the criteria required under Minn. Rule 7853.0130 for a determination on a certificate of need.

Minn. Rule 7853.0100 requires evaluation of all applicable and pertinent factors listed under each of the criteria set forth in Rule 7853.0130 and a specific written finding with respect to each of the criteria. Minn. Rule 7853.0130 states that a certificate of need shall be granted if all the listed determinations can be made. However, if one or more of those determinations cannot be met, a certificate of need may be denied, or conditionally granted subject to modification, under Minn. Rule 7853.0800.

The MPCA is providing comments that address the determinations required under Rule 7853.0130.B (2); 7835.0130.B (3); 7853.0130.C (2); and 7853.0130.C (3), which state:

- 7853.0130.B. a more reasonable and prudent alternative to the proposed facility has not been demonstrated by a preponderance of the evidence on the record by parties or persons other than the applicant, considering: . . .
 - (2) the cost of the proposed facility and the cost of energy to be supplied by the proposed facility compared to the costs of reasonable alternatives and the cost of energy that would be supplied by reasonable alternatives;
 - (3) the effect of the proposed facility upon the natural and socioeconomic environments compared to the effects of reasonable alternatives; and . . .
- 7853.0130.C. the consequences to society of granting the certificate of need are more favorable than the consequences of denying the certificate, considering: . . .
 - (2) the effects of the proposed facility, or a suitable modification of it, upon the natural and socioeconomic environments compared to the effect of not building the facility;
 - (3) the effects of the proposed facility or a suitable modification of it, in inducing future development.

The MPCA comments will address each of the criteria mentioned above and associated listed factors.

B. SA-03 is a reasonable and prudent alternative to the Applicant's facility (SA-Applicant), since the respective costs of SA-Applicant and SA-03 and of oil to be supplied by SA-Applicant and by SA-03 are not significantly different. Minn. Rule 7853.0130.B(2).

Financial impacts and comparative costs are among the factors to be evaluated in determining whether the criteria in Minn. Rule 7853.0130.B are met. Since MPCA submitted its comments dated August 21, 2014 to the Public Utilities Commission,¹ additional relevant testimony have been submitted in this docket. This included the direct testimony of economist Adam Heinen of the Department of Commerce (Doc. ID 201411-104761-03 ("Heinen Direct")). Mr. Heinen stated his expert opinion that System Alternative SA-03, as proposed by the MPCA, would meet the need of the project if as also proposed by MPCA, the Clearbrook terminal location was moved westward to the Crookston area or another location closer to the North Dakota border. (Heinen Direct, p. 75,) Mr. Heinen also indicated that moving the terminal location could increase the cost of constructing the pipeline, and discussed Applicant's estimate of the cost increase. (Heinen Direct, 75-76). Mr. Heinen then stated in his opinion that any apparent higher costs of SA-03 based on Applicant's analysis were insignificant and unlikely to impact retail prices and that the Applicant had not shown that SA-03 was an unreasonable alternative to meet the need of the proposed project. (Heinen Direct, pp. 77-78)

¹ See PUC Docket Filing [_20148-102458-02](#) and [20148-102458-04](#)

Mr. Heinen reinforced his direct testimony when he filed rebuttal testimony addressing SA-03. Mr. Heinen affirmed that SA-03 appeared to be a reasonable alternative to meet the need for this project. (Heinen Rebuttal, p. 7) (Doc. No. 20151-105968-01). This testimony supports the finding that under Minn. Rule 7853.0130.B(2), based on comparative cost, SA-03 is at least a reasonable and prudent alternative. However, comparative effects on natural environments, i.e., potential environmental and natural resource impacts as discussed in the following sections, appear to make SA-03 "a more reasonable and prudent alternative" under Minn. Rule 7853.0130.B(3).

In addition to direct costs of construction and operation, the costs considered under Rule 7853.0130.B(2) should include an evaluation of whether a system alternative such as SA-03 is a more reasonable alternative to SA-Applicant because of a reduced risk of a costly spill to a sensitive environmental area. An Alternative that avoids or impacts fewer sensitive ecosystems and water bodies than SA-Applicant will have a smaller likelihood of incurring significant response costs. As documented by the U.S. Environmental Agency (USEPA), it costs considerably more to restore or rehabilitate water quality than to protect it.² The areas of the state traversed by the SA-Applicant have waters and watersheds that are currently subject to protection in the state's "Watershed Restoration and Protection Strategy" program,³ financed through the Clean Water Fund and aided by significant volunteer participation of Minnesota citizens. By keeping these waters as clean as possible before they become impaired, extensive costs of restoring waters to state standards can be avoided. Location of oil pipelines in these areas place their pristine waters at risk, and also place potentially millions of dollars in state and federal funds allocated for protection of these areas at risk.

When evaluating spill response costs, the following factors would make one corridor a better choice than another in minimizing the potential for costly spills or accidental discharges: fewer crossings of flowing water; fewer adjacent water bodies; quality of those waters; presence of especially sensitive areas or habitats or species or uses; better access to downstream oiled areas; tighter soils; and closer and more equipped and prepared responders. The MPCA applies these factors in comparing SA-Applicant with SA-03 and other alternatives in the next section of our comments.

- C. SA-Applicant presents significantly greater risks of potential environmental impacts and encroaches on higher quality natural resources than SA- 03 and several other system alternatives. Minn. Rule 7853.0130.B(3). The effects of SA-Applicant on the natural environment support a determination in favor of other alternatives. Minn. Rule 7853.0130.C(2) and C(3).**

² See http://water.epa.gov/polwaste/nps/watershed/upload/economic_benefits_factsheet3.pdf (incorporated by reference).

³ See (<http://www.pca.state.mn.us/index.php/water/water-types-and-programs/surface-water/watershed-approach/index.html>)

Environmental risks are posed by all aspects of pipeline construction and operation, including post-spill recovery and restoration activities. The primary and most significant risks are associated with the long-term effects upon environmental and natural features that will be permanently altered, eliminated, or otherwise impacted by the presence of a pipeline, as well as the potential impacts of the release of crude oil as the result of a spill event during the potential 40 years or more that the pipeline will be operational. Those risks include environmental damages such as loss of wildlife, contamination of drinking water, destruction of fisheries, loss of habitat, and alteration of ecological systems. (For a discussion of the behavior and cleanup of oil spilled to surface water, soil, and groundwater, see Appendix A to the MPCA's comments.)

During these proceedings, the MPCA has commented extensively on the environmental concerns regarding the route proposed by Applicant in comparison to alternative routes and system alternatives. MPCA's prior comments can be found in Document Nos. 20146-100780-01, 20148-102458-02 and 20148-102458-04, each incorporated by reference. These prior comments have addressed such specific items as access to potential release sites in surface waters, potential to impact ground water, wild rice, the state's highest-quality surface water systems, wildlife habitat, low income populations, watersheds currently being assessed for restoration and protection strategies, fisheries, economies, and numerous other parameters.

In these comments, the MPCA concluded that with respect to protection of the highest-quality natural resources in the state, the SA-Applicant route presents significantly greater risks of potential impacts to environment and natural resources than several of the system alternatives, including SA-03. Although all proposed routes and system alternatives have the potential to impact some natural resources, the Applicant's proposed route encroaches on higher quality resources, superior wildlife habitat, more vulnerable ground water, and more resources unique to the state of Minnesota than do many of the proposed system alternatives. Several examples of the greater potential for harmful environmental impacts of SA-Applicant compared to other alternatives are highlighted in the following pages.

The relevance of other system alternatives depends upon whether the need for the project is determined based upon a narrower and more localized view or upon a larger regional view. While SA-03 has been identified as a reasonable and prudent project alternative as a general matter, it serves as such an alternative from both a localized and regional view. However, if need is determined based on a larger regional view of need, several other system alternatives may also be reasonable and prudent alternatives to meet that regional need. Consequently, the MPCA also addresses the comparative impacts of other System Alternatives and SA-Applicant to inform a determination of need from a regional perspective.

The broader objective of the proposed project is transporting oil to markets in the Midwest and along the eastern and gulf coasts, not to transport oil through the state of Minnesota

with termination in Superior Wisconsin.⁴ Oil that is to be transported to Superior, Wisconsin through the proposed pipeline will continue through Wisconsin to Chicago (or Wisconsin and Michigan if routed to Sarnia, Ontario). Oil that would be transported via one of the southern system alternatives, such as SA-04, and on to the Chicago area would have to be transported through Iowa before reaching Illinois. In either case, Chicago appears to be a common destination for most if not all of the oil that is proposed to be moved through Minnesota.

Information regarding the existence of contractual agreements obtained when Applicant held an “open season” has been offered as the underlying basis for a determination of need.⁵ The Applicant has suggested that the facility as proposed (SA-Applicant) is necessary in order to assure those contractual agreements are filled and that alternatives such as SA-03 would negatively affect the cost of fulfilling those agreements. This proceeding will determine whether the Applicant’s open season agreements establish the need for siting a pipeline through Northern Minnesota instead of along a southern alternate route. If the underlying actual and predominate need of the project is to get Bakken oil to Midwest regional markets in Wisconsin, Michigan, or Illinois, that need can be achieved by several of the system alternatives. The foregoing is generally and specifically supported by the direct and rebuttal testimony of Applicant’s witness Neil Earnest (Document ID Nos. 20148-102134-03, Earnest Direct Testimony, and 20151-105934-01, Earnest Rebuttal Testimony). See Figure 1, which is an overview of Applicant’s regional infrastructure and corresponding destinations.

⁴ Applicant testimony acknowledges that the project’s intended destination is not Superior, Wisconsin but refineries in the Midwest. Applicant witness Earnest, in rebuttal, indicates that oil from this project is not only competing with alternative modes of transportation to refineries in Chicago, Patoka, and Cushing. The oil is also competing with all of the other crude oil choices available to the refineries in the Midwest. Enbridge rebuttal at pp 5-6. “Accordingly, all else equal, higher Sandpiper transportation costs to the Midwestern markets acts to decrease the volume of Bakken crude oil that can be expected to be processed in the Midwest, and to lower the utilization of the pipeline.” (Earnest Rebuttal, 6) 20151-105934-01

⁵ Heinen Direct, pp. 6-7. The nature and content of these open season transportation service agreements are confidential. The MPCA has not examined the nature or substance of these agreements or their duration. Mr. Heinen also indicates in his testimony that he does not know the ultimate destination of that oil.



Comparative Evaluation of Environmental Effects

The comparative long term environmental and eco-system impacts and the potential impact of spills must be carefully evaluated for each system alternative in determining the need for a pipeline project. Permanent harm to sensitive eco-systems, habitats, and species may occur following construction of a new pipeline. In addition, long-term impacts from a spill can be much more damaging in areas containing features such as environmentally sensitive areas and those with limited access. As discussed below, these long-term environmental and eco-system impacts should be accorded great weight in the determination of need for a pipeline project. Further, in associated routing proceedings, these impacts must be subjected to even more rigorous and detailed environmental review when evaluating alternative routes. It is not sufficient under Rule 7853.0130 to determine that the location for the proposed project is suitable or reasonable. Rather, the location should be one that best minimizes the risk to human populations and environmental and natural resources.

1. Adverse Impacts to High Quality Surface waters are Greater under SA-Applicant.

SA-Applicant traverses a greater number of high quality water bodies than does SA-03 and presents higher risk of environmental impacts from a spill or release of crude oil along its route corridor. Based on watershed health scores as determined by the Minnesota Department of Natural Resources in its Watershed Health Assessment Framework, MPCA documented that the adverse impacts to overall water quality from construction and operation, as well as spill cleanup and response, of Applicant's Alternative were more harmful than alternatives including SA-03, SA-04, and SA-05. See MPCA Comment letter dated August 21, 2014, Document ID Nos. 20148-102458-02 and 20148-102458-04 (20148-04, page 5).

The MPCA provides these additional comments to assist in proper interpretation of the information on surface waters in the Department of Commerce environmental analysis "Comparison of Environmental Effects of Reasonable Alternatives" (DOC study) submitted on December 19, 2014, (ID 201412-105567-01) and in evaluating the criteria and factors based on that information. For example, on its face, the DOC study may be misinterpreted as indicating that SA-03 is a worse alternative than SA-Applicant in affecting impaired waters. The DOC study concluded that there were 50 impaired waters crossed by the Sandpiper route, and 98 impaired waters crossed by SA-03 (DOC Study, 72, 90). Under the Clean Water Act ("CWA"), an impaired water is any water body (e.g., lakes, rivers, streams, wetlands) that is too polluted or otherwise degraded to meet the applicable water quality standards set by states, territories, or authorized tribes. Water quality and water quality standards will vary throughout the state depending on the region of the state in which the waters reside. "Impaired" waters are not the same across the state. For a water body to be deemed impaired in southern or western Minnesota (western corn belt plains or Red River valley ecoregions), it typically will have a greater degree of contamination or degradation than would be required for a water body in the central

hardwood forest ecoregion of Minnesota traversed by the applicant's preferred route (Sandpiper) to be deemed impaired. Thus, waters that are listed as impaired along the SA-Applicant route are likely to be higher quality (having a lower contamination level) than a water listed as impaired in the southern part of the state, and might not be listed as impaired at all along the SA-03 route. Waters in northern Minnesota are generally of better water quality or more pristine.

2. Significant Environmental Damage Would Occur From a Release at or near a Water Crossing Extending up to at least a Distance of 10 Miles from the Point of Release. SA-Applicant Has Many Areas of Limited Access, Increasing the Risk of Extended Impact to Surface Waters.

The most significant potential impact to a surface water from a crude oil pipeline crossing is the environmental destruction that would occur in the event of a release at or near the water crossing. According to a third party risk assessment document developed as part of the Keystone XL EIS⁶, Exponent states: "A distance of at least 10 miles downstream from the proposed centerline of the pipeline should be used for the identification of sensitive areas and for identifying CPSs (contributory pipeline segments) during the final design phase of the Project." The 10 mile estimate is fair, given the potential for flowing water to carry a release of oil, especially in remote areas such as those found throughout the proposed Sandpiper route. Considering that the 2010 Enbridge spill into Talmadge Creek and the Kalamazoo River caused significant damage approximately 35 miles from the spill site, a ten mile estimate of damages is conservative and reasonable. See Stolen testimony, Document ID 201411-104748-02, page 24.

Damage to aquatic systems from an oil release can occur either as a result of physical effects such as smothering of organisms, or toxic contamination due to the chemical compositions of the oil. An oil spill in an aquatic ecosystem could cause, among numerous other impacts, death of waterfowl, other bird species, amphibians, reptiles, aquatic mammals, microorganisms, plankton, fish, pets and livestock living adjacent to waters, stunted growth of surviving species, loss of vegetation, destruction of soils, long-term reduction of dissolved oxygen, human health damage, damage to air quality, property value loss, and destruction of drinking water resources. This does not include damages that would occur during the cleanup process, especially in areas with limited, restricted or no access.

3. Potential Damages During Pipeline Construction and Testing Are Greater for SA-Applicant than other Alternatives.

Damages to surface waters as a result of construction activities can and do occur. Flowing water can also carry these effects a long distance from their origin, as noted above. MPCA has observed and documented significant sediment discharges to surface water on pipeline

⁶ See <http://keystonepipeline-xl.state.gov/documents/organization/221278.pdf>, page XV, "Recommendations",

projects as a result of failing to install sufficient sediment and erosion controls on hillsides adjacent to surface waters. The failure to account for spring time subsidence of soils as a result of winter construction is common; frozen soils that are dug up and replaced into trenches thaw and subside in warmer spring temperatures, causing the soils to sink over the pipeline and form a ditch. These ditches act as conduits for melt water or rain water, and as they do not have sediment controls installed, tend to erode significantly as water runs through them. It is common for these subsidence ditches to terminate in water bodies, causing sedimentation and habitat damage (MPCA Comment Letter dated April 4, 2014, -Document ID 20144-98170-01, page 8).

Damage to surface water resources during hydrostatic testing discharges has occurred recently in the state. During these tests, segments of pipeline are filled with a significant volume of pressurized water, often millions of gallons, to test the integrity of the pipe. The water is then released in a manner that should minimize environmental impact. During the Alberta Clipper/Southern lights diluent project, Enbridge exceeded agreed-upon maximum discharge rates on 15 of its hydrostatic testing discharge operations. At two of these sites (adjacent to the Mississippi River and adjacent to the Clearwater River), the exceedances were enough to cause significant erosion and sediment discharge to surface waters. These cases were referred to the U.S. Environmental Protection Agency and eventually settled by the U.S. Department of Justice in 2013 with Enbridge paying a \$425,000 penalty. During these hydrostatic testing operations, as much as 4,000 gallons of water per minute can be discharged from valves. This water is general required to be discharged to an upland area or a dewatering device, but when discharged rates are exceeded, or sometimes even when they are not, the pressurized water can erode soils and carry those eroded soils to surface waters, causing turbidity or smothering of aquatic habitat.

The placement of the new terminal construction west of the proposed Clearbrook location as suggested by MPCA in SA-03 will assure that future pipelines are located west and south of these pristine areas, thus avoiding the resources that the state is spending millions of dollars to protect. Meanwhile, the continued expansion of the Clearbrook facility that will coincide with construction in the SA-Applicant location will mean continued impact and potential impact to the highest value (pristine) waters in our state as a result of future pipeline construction.

4. Threats to Groundwater and Potential Drinking Water Supplies from SA-Applicant are Difficult to Assess, but Appear to Pose More Significant Risks than the System Alternatives, including SA-03.

Highly detailed topographical data for the state of Minnesota (called "LIDAR" data)) illustrates that the Sandpiper route (SA-Applicant) traverses territory with greater topographical contrast than does the SA-03 route. Much of the topography along the SA-Applicant route in Minnesota is the result of the deposit of glacial till from thousands of years ago. The composition of this till is often dependent on how the till was deposited. A

term used to describe these soils is “moraine,” or a mass of rocks and sediment carried down and deposited by a glacier, typically as ridges at its edges or extremity.

What is most important to understand about the soils along the SA-Applicant route is that the complexity of moraines in the area creates a significant degree of localized changes in groundwater movement that are very difficult to predict, as opposed to some of the flatter lands to the west and south, such as those traversed by SA-03, SA-04, or SA-05. Typically, ground water through this till along the SA-Applicant route will move laterally and toward a water body, so it is important that significantly more data is gathered from this route before the possible movement of oil in the event of a release can be predicted and response plans developed. It would be very difficult, if not impossible, to accurately assess the potential for ground water contamination based solely on the examination of GIS layers. However, it can be predicted that the damage to groundwater, potentially used as a source of drinking water, as well as the connected soils could take decades to repair, if the damage could be repaired at all. Additional impacts could include damage to agricultural areas (inability to grow crops) and damage to surface waters, wildlife and habitat from oil carried through underground conduits to those areas.

The LIDAR data strongly suggests an increased potential for impacts to drinking water from SA-Applicant than from SA-03 and some other system alternatives. However, more in-depth study will need to be done in the routing phase in order to make an informed comparison and either confirm or negate what the LIDAR data suggests as a factual conclusion.

5. SA-Applicant Threatens a Greater Percentage of Wild Rice and Native Forests than any of the Proposed Alternatives, including SA-03.

Wild rice, in addition to being an important economic consideration in Minnesota, is also an extremely important cultural resource, as well as an essential food source for humans and wildlife. It requires very specific conditions and good water quality, both of which are provided by north central Minnesota lakes. The Sandpiper pipeline would encroach on some of the richest wild rice territory in the state of Minnesota. Further, MPCA staff has identified 10 wild rice locations along the Sandpiper route for which there is no access from pipeline to the location of the wild rice. By comparison, SA-03 has two such areas. As shown in Figure 2, SA-Applicant (in green) would threaten significantly more of the state wild rice crop than any system alternative.



Minnesota Pollution Control Agency

520 Lafayette Road North | St. Paul, Minnesota 55155-4194 | 651-296-6300

800-657-3864 | 651-282-5332 TTY | www.pca.state.mn.us | Equal Opportunity Employer

April 4, 2014

Mr. Larry B. Hartman
Environmental Manager
Minnesota Department of Commerce
85 7th Place East, Suite 500
St. Paul, MN 55101-2198

RE: Enbridge Sandpiper Pipeline Project - North Dakota Pipeline Company LLC
Pipeline Routing Permit Application, MPUC Docket No. PL-6668/PPL-13-474

Dear Mr. Hartman:

Thank you for the opportunity to review and comment on the Pipeline Routing Permit Application (Application) for the proposed Sandpiper Pipeline Project (the Project), prepared by Enbridge, doing business as Enbridge Pipelines (North Dakota) LLC (EPND). The Minnesota Pollution Control Agency (MPCA) has significant concerns regarding the lack of information for the proposed Project route. The supporting documentation for the preferred route does not adequately demonstrate avoidance and minimization of environmental impacts in areas where the existing conditions or resources may be vulnerable to disturbance and degradation (e.g., high quality waters and impaired waters, wetland crossings with limited access, slopes greater than five percent, areas of erodible soils and accessibility). We do note that the route avoids a calcareous fen present in the northern route; however, other sensitive areas including habitats, drinking water intakes and well head protection areas have not been identified. Additional information is needed to adequately consider alternative routes and the potential environmental effects associated with the preferred route.

Concerns also arise based on MPCA's experience with regard to pipeline construction, spills and remediation efforts, as well as Enbridge's apparent disregard of much of the information needed during the review and approval of the Alberta Clipper Crude Oil and Southern Lights Diluent Pipeline project in 2009-2010 (Alberta Clipper). The MPCA expects to receive the same level of information about this Project to enable the analysis of potential environmental impacts and the development of protective conditions in any issued permits. Due to the lack of detail provided regarding existing environmental conditions along the preferred route, MPCA cannot conclude or support the presumption that EPND has chosen the least environmentally impacting route or that the proposed actions are adequate to minimize environmental impacts that will result from the project.

MPCA's initial concerns and comments on the Application and Project include the following topics: future access to potential release sites; construction and operation of the break-out tanks; cumulative impacts from construction of additional pipelines and infrastructure in the area; emergency responsiveness and spill prevention; inspections and monitoring conducted during construction; proposed water body crossing methods and time frames; wastewater issues; and water quality, watershed and wetland issues.

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ACCESS TO THE PROJECT

Obtaining access to a remote area of the Project in the event of a release to the environment is of significant concern. Numerous segments of the proposed Project route extend through large expanses of bog or open water wetland that have limited or no access under seasonal conditions. When vehicles cannot access a potential leak location under seasonal conditions, the risk of large-scale environmental damage and costly clean-up increases.

The LaSalle Creek crossing is a good example of an area in which it would be extremely difficult, if not impossible, to access downstream impacts and deploy equipment necessary to contain and clean up a spill. Large expanses of bog and some forest are located between the proposed crossing of La Salle Creek and Big La Salle Lake; consequently, there are no existing locations to access the water that could potentially be carrying leaked oil until after it has entered Big La Salle Lake. The environmental damage that would occur as a result of a leak at this location could be massive, and the obstacles to containing the leak or performing clean-up activities could be insurmountable. The MPCA strongly recommends that alternate routes around the LaSalle Creek and LaSalle Lake areas be considered. A suggested route could include constructing the Project parallel to Highway 108 located west of LaSalle Lake, extending southward along Highway 200 until Highway 200 intersects with 400th Street. At 400th Street, the Project would extend eastward until it rejoins with the proposed route.

BREAK-OUT TANKS

As you aware, the MPCA is a potential responsible governmental unit for the environmental review of projects involving the construction of hazardous material storage capacity (ref. Minn. R. 4410.4300, subp. 10(B)). Further, it is understood that the break-out tanks proposed to be constructed in Clearbrook will be addressed in the Comparative Environmental Analysis (CEA) prepared by the Department of Commerce. The assessment of impacts related to the tanks should, therefore, be evaluated to ensure adequate prevention and containment measures are incorporated into the Project design and operations, in order to prevent future releases and remediation. A secondary permeability assessment should be included in the CEA and construction and operation of the Project and break-out tanks should be completed in compliance with the Minnesota Office of Pipeline Safety and in accordance with Minnesota secondary containment standards.

CUMULATIVE IMPACTS

In addition to the Project proposal, a second effort has been proposed to upgrade Enbridge's Line 3 from Neche, North Dakota, to Superior, Wisconsin. The Great Northern Transmission power line, which will transport energy from Manitoba to Grand Rapids, is also in the planning process. These three projects, and any additional future energy infrastructure in the area, will have the potential to fragment and impact ecosystems. Under these circumstances, serious consideration should be given to an evaluation of the potential cumulative effects of past, present and future projects with respect to the disruption of the habitat and the continuity of natural, relatively undisturbed landscapes that remain in Minnesota. This could include planning of common corridors, considering risk assessment, access and the minimization of impacts while meeting the needs of electrical, natural gas and oil transmission. Past pipeline routes have followed corridors that were created when a power transmission line was put in place. While there are benefits to following an existing corridor, power lines and pipelines are different types of projects that present different potential impacts. There are points on the Project route, such as the LaSalle Creek area, where a power line crossing has a relatively low risk of harming natural resources in the event of an accident. However, a pipeline accident, such as a large drilling mud release (frac-out) or an oil leak in the same location would be devastating to the pristine natural areas downstream from the crossing site.

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EMERGENCY RESPONSE/SPILL PREVENTION/REMEDIATION

The CEA should identify the locations of the shut off valves for the Project's new line and describe how these will be installed strategically to prevent and/or minimize flow or backflow of the line contents into sensitive areas in the event of a line break. Procedures and time frames for activating shut off valves should be described. The CEA should also identify the worst-case discharge for the response zones of the Project per Section 194.105 of the Department of Transportation Pipeline and Hazardous Materials Safety Administration regulations, including the worst-case volume, maximum release time in hours, shutdown response time and line drainage volume.

If EPND's contractor generates a hazardous waste from materials brought on-site (e.g., paint clean-up solvents, waste paints, etc.), then the contractor is responsible for proper waste collection, storage and disposal in accordance with all applicable regulations. Any release of the hazardous waste as a result of the improper handling, storage or disposal by the contractor in this instance is the responsibility of the contractor to rectify to the satisfaction of EPND and all applicable regulatory agencies. The CEA should address how EPND will ensure that proper responsibility is taken for hazardous waste generated.

Additionally, EPND's contractor is to report spills to the Minnesota State Duty Officer and appropriate federal, state and local agencies as soon as possible. A listing of federal, state and local agencies including reporting thresholds and timeframes is provided in Appendix G of the Application. The contractor, in coordination with EPND and the appropriate federal, state and local agencies will ensure that additional parties or agencies are properly notified and that all cleanup activities are satisfactorily completed and documented. Again, the CEA should address how EPND will ensure that this occurs.

INSPECTION AND MONITORING

EPND must ensure that workings are well-inspected for compliance and should describe how this will occur. Eventually, EPND must provide assurances that inspections will occur. The MPCA believes that construction should not take place without a third-party inspector present and on-site, and that a minimum of one third-party inspector will be required for every "spread" of construction (the spread distance will be determined in the Clean Water Act Section 401 Certification for the U.S. Army Corps of Engineers Permit). Additional spreads must be authorized in advance with additional third-party inspectors. The MPCA seeks a significant commitment to third-party inspectors from EPND and with MPCA oversight to ensure compliance with all permit conditions.

Some hydrostatic test discharges associated with Enbridge's Alberta Clipper project exceeded permitted discharge rates and caused damage to the environment, MPCA will be requiring additional, concrete assurances that discharge rates are complied with, including round-the-clock inspectors to monitor the discharges and/or additional Best Management Practices (BMPs). This may be addressed in MPCA permits for the Project which will be in development during the environmental review of the Project.

PROPOSED WATER BODY CROSSING METHODS AND TIME FRAMES

All waters of the state that may be impacted by the proposed Project need to be identified in relevant plans, as was required during construction of the Alberta Clipper project. The Application and related documents prepared for this Project (e.g., the Environmental Protection Plan dated October 13, 2013) do not contain this information, and will need to be revised accordingly.

Further, EPND is proposing to use an "open cut" method for installing the pipeline in the majority of streams and water bodies. This method was determined to be unacceptable for the previous project.

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Consequently, the CEA should clearly identify that water bodies with stable banks in mineral soil and with any noticeable flow at the time of construction will be crossed using a Dry Crossing Construction method, including horizontal directional drilling (HDD), guided bore, dam and pump, or flume. Only water bodies that are dry during construction and selected water bodies, such as ditches in peat lands with no banks or impoundments, can be allowed to be crossed using an open cut and/or push pull methods.

In addition to the identification of waters (both impaired and unimpaired) that are being crossed by the proposed Project, waters downstream (and upstream in lentic waters) of the crossing points must also be identified. Identification includes the name and type of the water body, its impairment status, and the distance from the crossing point. It is imperative to MPCA's review and permitting that these features are clearly identified on maps to ensure adequate mitigation measures are in place to protect water bodies during the construction of the Project. Map features required for MPCA's review are included in Appendix A.

Many of the crossing points of the proposed Project are upstream from very high quality surface waters which must be protected or impaired waters which must be improved in order to meet water quality standards. Examples of this include the La Salle Creek crossing (less than 1,000 yards upstream of Big LaSalle Lake and also upstream from the La Salle Lake Aquatic Management Area), or Jail Lake in Crow Wing County, a lake impaired by excess nutrients. The potential impacts from an oil leak may go far beyond the water body being crossed. In many cases the proposed route threatens not only one but several lakes or rivers downstream from the proposed route.

The Twin Lakes, east of a line between Park Rapids and Hubbard, are listed as impaired by excess nutrients and mercury in fish tissue. The Twin Lakes contain significant wild rice beds and both basins are identified as wild rice lakes by the Department of Natural Resources (DNR). In addition to this, the area between the lakes and the proposed Project crossing is inaccessible by any type of equipment that would be needed for clean-up efforts and is buffered by hundreds of acres of several types of wetlands. To further compound the environmental risk of this location, the Twin Lakes empty to the Shell River, a tributary of the Crow Wing River. The MPCA strongly recommends that alternate routes around the Twin Lakes area be considered. A suggested route could include constructing the Project eastward along Highway 14 (located west of Hubbard); Highway 14 then junctions with Highway 87. Before Highway 87 junctions with Highway 6, there is a transmission line easement that runs southward, somewhat parallel to Highway 87/6. The Project could be constructed along the transmission line southward where it intersects Arbor Road, heading eastward to where it intersects Highway 6. Here, the Project could parallel Highway 6 south until it intersects the current proposed route.

In any instance where pipelines cross sensitive aquatic environments, such as those described above, an assessment of the risk of doing so, relative to other available routes, needs to be provided. Such an assessment is needed in order to understand potential impacts that may result from a leak, including costly and environmentally destructive cleanups. The connectivity of water bodies, soil types, access to potential spill sites and the potential of destruction of other critical habitat downstream of a crossing location must be the subject of more risk assessment prior to approving a proposed route. Cost or time factors to the proposer should be subordinate to the prevention of environmental destruction and the proper assessment of the risks to humans and the natural environment.

WASTEWATER, STORMWATER AND HYDROSTATIC TESTING

The CEA should clearly address the management methods and BMP's needed to ensure compliance by EPND's contractors and employees as these relate to: hydrostatic testing (especially allowable discharge exceedance/dispersal methods/discharge rates); erosion control; sediment transportation control; and, scouring control at sites/results from hydrostatic/trench dewatering discharges activities.

For handling erosion and sediment, stabilization of a spread should be conducted within two days. Additionally, the CEA should clearly describe the roles for EPND and its contractors so that it is clearly understood who has the responsibility for what permit requirements out in the field.

Hydrostatic testing needs to be conducted after the pipeline is moved and in place in the trench. It may be necessary to construct temporary sediment basins to reduce flows prior to discharging hydrostatic test water into wetlands or lakes. During the Alberta Clipper project, flows directed overland near steep slopes, even when the straw bale dewatering device was in use, occasionally caused serious erosion, particularly when the sites had steep slopes nearby or significant disturbed soils.

The appropriation of large amounts of water from under the ice of smaller lakes can be dangerous. Appropriation of several million gallons of water from a small lake can drop water levels below the ice by an inch or more, thus creating conditions that may be unsafe for human activity. Hydrostatic testing of pipes, when appropriating from smaller lakes, should be done in ice-out conditions if possible.

WATER QUALITY, WETLANDS, AND WATERSHEDS

Controlling potential environmental issues in or near wetlands and in water bodies is another important area. Additional precautions may need to be taken in these areas. The Project will need various water permits from the MPCA. Impacts authorized under a U.S. Army Corps of Engineers Section 404 permit will need a Section 401 Certification from the MPCA. An Individual NPDES Construction Stormwater (CSW) permit will also be needed. To facilitate the MPCA's review and development of these certifications and permits, the CEA will need to provide certain information as described below.

Frac-Out Consideration, Discharges and Spill Control

Areas where soils covering pipelines are largely peat or silt are much more likely to experience frac-outs during HDD activities, or allow oil discharges from leaks to reach the surface and spread. If an oil release were to occur, clean-up would be extremely challenging (if not impossible). This may result in "in situ" burning, as was conducted near Cohasset, Minnesota in 2002. Burning, of course, may entail significant environmental impacts of its own.

The CEA should provide any available information about soil types and the history of past frac-outs along the route, as frac-outs are likely to re-occur. This information will allow the MPCA to determine if there are areas along the route that are of high concern for frac-outs, requiring the certification to restrict or eliminate the use of drilling mud additives where frac-out contamination of the water body is more likely.

The CEA should describe how initial containment of frac-outs will be conducted, for instance, by having containment booms on site that are easily accessible and located in close proximity to water bodies. In addition, it should describe the actions to be taken to safely navigate the water in difficult locations, such as a peat bog, where access to parts of the water body is not available.

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On past pipeline projects, workers have endangered themselves attempting to wade out into peat bogs or very silty wetlands to isolate frac-outs in the water body. Effective and safe ways of traversing the system, such as a barge, need to be in place.

It should also be described in the CEA how EPND plans to minimize the potential for frac-outs discharging drilling mud into sensitive resource areas, such as water bodies crossed via the HDD construction methods, and areas immediately adjacent to wetlands and water bodies. In past projects, specific conditions to prevent these discharges have included:

- A Drilling Mud Containment, Response and Notification Plan. EPND should describe the site-specific locations relative to the water bodies that will be crossed, where all equipment and supplies (e.g., silt/turbidity curtains, boats, etc.) will be stored and ready for immediate deployment prior to commencing any HDD activities. At a minimum, the plan must contain: 1) maps showing the specific locations with sufficient access to each water body; 2) supporting text detailing how EPND will transport equipment, supplies and adequate staff to each location prior to starting the HDD crossing; and, 3) a Flocculent Use Contingency Plan, which identifies specific products and the methodology to be used, if necessary, to contain a drilling mud release.
- Requirements that if containment and cleanup equipment is deployed, sediment and/or bentonite collected by the silt/turbidity curtains shall be carefully removed and disposed of in an upland disposal location in compliance with all applicable rules and regulations.
- Each spread team is trained in spill response, containment and clean-up, and the required response equipment will be available at the location of the HDD with the spread team on-site.
- Other requirements for containment and recovery measures include adjusting drill pressures, pump volume rates and drill profiles to minimize the release, and suspending drilling operations if containment measures do not effectively control the release.

Certain specific conditions will likely need to be developed for spills that occur near or into a wetland or water body. EPND needs to provide information as to how they can ensure that wetlands and water bodies are protected in the case of spill. Example conditions include:

- If a spill occurs during refueling operations, the operation needs to be stopped until the spill can be controlled and the situation corrected.
- Use of sorbent booms and pads to contain and recover released materials in standing water.
- If necessary, for large spills in water bodies, the use of an Emergency Response Contractor to further contain and clean up the spill will be required.
- Excavation of contaminated soils in wetlands may be necessary, depending on the severity of the release. Excavated soils will need to be placed temporarily on plastic sheeting in a bermed area and covered with plastic sheeting, and secured. This should be conducted a minimum distance of 100 feet away from the wetland.

It should be explained in the CEA how EPND should meet these conditions or other effective procedures that would be used in these situations. Procedures for evaluating and consulting on options for wetland and water body spill response should be described.

Concrete wash water, grindings and slurry, must not be discharged to wetlands, water bodies, and storm sewer systems or allowed to drain onto adjacent properties. Methods should be described by which EPND will ensure that there is no discharge of these materials.

This could include limiting disposal to a defined area of the site within a lined containment area sufficient to contain the wash water and residual cement, and ensuring that contractors hired to provide concrete products will provide equipment capable of reclaiming wash water during wash out. Concrete slurry must be contained in a lined pit, washout container or other device.

Stabilization and Erosion Control

The CEA should also discuss the measures that will be taken to protect soil and soil erosion, including how EPND will prevent unforeseen weather events from possibly causing significant erosion and potential discharges to water bodies. This could include performing the authorized work in spreads, and limiting the amount of excavated open trench within a spread to no more than two days of anticipated welding production. EPND will also need to describe how each spread will be restored (backfilled and BMPs in place) as the leading edge of the spread is opened and the work progresses.

Other measures to protect soil and soil erosion that should be discussed in the CEA include how EPND will segregate topsoil from subsoil in a manner that will prevent mixing when:

- constructing the Project in cropland, hay fields, pasture, residential areas and other areas as requested by the landowner where soil productivity is an important consideration;
- to the extent practicable in forested areas, standing water wetlands, and non-agricultural open areas with steep slopes adjacent to wetlands and water bodies; and,
- in wetland areas without standing water.

The CEA should also address how the soil and reserved topsoil will be replaced to the trench during backfilling.

The CEA also needs to describe how EPND will address areas of unusually steep slopes along the Project's proposed construction route that are adjacent to waters of the state, and measures that will be used to prevent topsoil erosion and loss after construction. Measures should include those taken when cutting into parent material (as defined in Figures 1, 2, 3 in the Environmental Protection Plan) for trenching, construction of the level work area or any other such cutting on the hillsides, and during backfilling. Options include removing the topsoil and storing it separately from the underlying subsoil and then replacing it in the trench in the opposite order removed. Measures should also be included for areas where there is not sufficient top soil separation for vegetation to be re-established, such as supplying suitable topsoil to ensure rapid re-vegetation and slope stabilization occurs in these sensitive areas.

The CEA should describe how EPND will implement and ensure compliance with intended requirements in the Individual NPDES CSW permit. This would include, but not be limited to:

- As a general rule, use of straw bales for sediment control should only be used in mucky, wetland soils. When used in upland situations, straw bales are as likely to increase soil erosion and transport, by increasing flow velocities in gaps between or outside of the bales as they are to decrease it.
- Remedying sediment-buried silt fences; removal of sediment from silt fences will not suffice. Once the silt fence has been plugged with excess sediment, it will no longer function properly and should be replaced with a new layer of silt fence.
- Stabilization procedures within 24 hours of ceasing construction in an area if the earth moving activity is expected to cease for at least 14 days. On a pipeline project, this should be easy to predict and stabilization procedures should begin almost immediately after the pipeline trench has been backfilled.

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- On steep slopes, or slopes draining to surface waters (ditches, wetlands, streams, lakes), ditch checks should be installed over backfilled pipe trenches that were opened and closed during frozen soil conditions, as subsidence of thawing soils (frozen soils backfill in chunks) will create stormwater and snowmelt conveyances that could impact surface waters. Preparation for this phenomenon would include treating those backfilled trenches as ditches before they become ditches.
- Mulch or other erosion control will be required on all exposed upland soils, regardless of slope. Seeding in and of itself is not considered stabilization. Hydromulch with liquid tackifier or hydraulic soil stabilizers are preferred to standard mulch on steeper slopes or prior to snowfall, as mulch will not be effective throughout the winter in most conditions.
- Straw bales should not be used as slope breakers or as sediment control on upland slopes. Straw mulch should be applied at a minimum rate of two tons per acre, but ground coverage for straw mulch to be effective should be at least 90 percent, not 75 percent. Stabilized earthen berms have worked well in the past, although biologs or wattles may be effective in some areas. Gaps between spoil piles must be stabilized with blankets or other effective erosion control.
- Additional information is required as to the composition and manufacturer's recommendation on the foam pillows.
- Clean construction mats that are used by heavy equipment to enter streams are unlikely to remain clean for long. If mats or temporary bridges are used, it will be necessary to install some type of sediment control, such as triangular silt dikes, along each edge of the bridge or mat to ensure that sediment stays on the bridge or mat until the work is complete. At that time, the sediment may be removed by whatever means are necessary to keep it out of the receiving waters.
- Vegetation used to restore stream banks should be similar in species composition to the vegetation growing on the site prior to disturbance.

Subsidence of Soils Due to Winter Construction

A considerable amount of the excavation work that EPND will perform will occur during frozen soil conditions. When these frozen chunks of soil are excavated and then replaced over the trench, large gaps of air are included with the soils. During spring thaw, the ice in these soils melt and "subsidence" occurs; the soils sink over the trench area, often forming what is essentially a ditch. On slopes that drain to surface water, these ditches act as conveyances which accelerate movement of water and sediment transport toward the water bodies. To prevent this, all trenches that are excavated during frozen soil conditions, and that drain toward surface waters (wetlands, streams, lakes, ditches), must have ditch checks installed as the trenches are buried. These can be in the form of triangular silt dikes, biorolls, silt fence, rock checks, or subterranean rocks, but some type of ditch checks must be installed, with spacing dependent on the degree of slope, in anticipation of subsidence in the spring.

Wetland Mitigation

The CEA should describe the compensatory mitigation that EPND will provide for the permanent loss of waters and wetlands.

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CONCLUSION

The MPCA is aware that Enbridge has not fully complied with applicable water quality rules and regulations when constructing or expanding pipelines. The Alberta Clipper project brought about enforcement action to settle federal allegations that the project resulted in fifteen instances of illegal discharges into Minnesota wetlands and rivers while testing two of the newly constructed pipelines. The discharge of test water from a 36-inch pipeline at a site just north of Bemidji eroded a hillside and created a gully 50 to 60 feet long, 15 feet wide and 10 feet deep, leaving up to a foot of sediment in a wetland and sending rust-colored water into the Mississippi River. In view of this history, it will be necessary to provide additional assurances to the MPCA concerning the additional efforts and resources which will be employed to ensure this Project will not result in similar non-compliance.

We anticipate additional comments as the development of future project-related documents, such as the Draft CEA, unfolds. Comments provided in this letter are intended to be addressed and incorporated into the Draft CEA.

We look forward to assisting the Department of Commerce, as desired, during the preparation of the CEA for this project and its subsequent review upon its release. Through this process, the MPCA seeks to obtain further additional information to facilitate the MPCA staff review of the Project, well in advance of the time a favorable determination on the required MPCA authorizations is needed to commence construction. Ultimately, it is the responsibility of EPND to secure any required permits and to comply with any requisite permit conditions. If you have any questions, please contact me at 651-757-2465.

Sincerely,



Patrice Jensen
Planner Principal
Environmental Review

PJ:ld

cc: Jamie Schrenzel, DNR
 Desiree Morningstar, U.S. Army Corps of Engineers
 Reed Larson, MPCA
 Bill Sierks, MPCA
 Steve Lee, MPCA
 Catherine Neuschler, MPCA
 Craig Affeldt, MPCA

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APPENDIX A
MAP REQUIREMENTS

Enbridge Sandpiper Pipeline Project - North Dakota Pipeline Company LLC
Pipeline Routing Permit Application, MPUC Docket No. PL-6668/PPL-13-474

MPCA is requesting that an aerial map book of the Project in Minnesota be prepared that contains the following features:

- locations of all water bodies (including wetlands) proposed to be crossed by the Project
- identification of all delineated wetland types and locations at or near the Project route
- precise mile post locations of all water body crossings by the Project
- Department of Natural Resources public water status of water bodies crossed by the Project
- proposed crossing methods of all water bodies, with alternative proposed crossing methods by the Project
- date restrictions when construction will not allowed
- depiction and identification of environmentally sensitive areas crossed by the Project
- depiction of all existing access roads and proposed to be constructed access roads in the Project area
- width and bank height of streams or rivers being crossed by the Project
- water bodies within 1 mile downstream of the proposed stream/river/wetland crossings of the Project and the distances to these waters
- impairment status of water bodies downstream of the Project crossings
- Special Waters (ORVW) within 1 mile downstream of the Project crossings
- soil erodibility along the Project route weighted by slope



Minnesota Pollution Control Agency

520 Lafayette Road North | St. Paul, Minnesota 55155-4194 | 651-296-6300

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May 12, 2015

Mr. Scott Ek
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101-2147

Re: In the Matter of the Application of Enbridge Energy, Limited Partnership for a
Certificate of Need and a Pipeline Routing Permit for the Line 3 Pipeline Replacement
Project in Minnesota
PUC Docket No. PL-9/CN-14-916 (Certificate of Need)
PL-9/PPL-15-137 (Pipeline Routing Permit)

Dear Mr. Ek:

The Minnesota Pollution Control Agency (MPCA) offers these comments on the Certificate of Need (CON) application and the Pipeline Routing Permit application filed by the Enbridge Energy, Limited Partnership (Enbridge) in these dockets ("Line 3 Replacement" project).

The Minnesota Public Utilities Commission (PUC) has requested comments on three topics concerning the completeness of the Enbridge Line 3 Replacement applications:

1. Does the CON application contain the information required under Minn. R. 7853.0220 to 7853.0260 and Minn. R. 7853.0500 to 7853.0640?
2. Does the pipeline route permit application contain the information required under Minn. R. 7852.2100 to 7852.3100?
3. Are there any contested issues of fact with respect to the representations made in the applications?

The MPCA understands that Enbridge's preferred route is proposed to co-locate the Line 3 Replacement on the same route as its proposed Sandpiper pipeline project. Although the MPCA's environmental concerns with the Sandpiper project are known, it must be noted here that the discussion of alternatives in the Line 3 Replacement applications does not address those concerns or consider any system or route alternatives that were brought forward in the Sandpiper proceedings. Nor do the applications appear to provide adequate basis for selection of a southern route alternative over a northern route alternative, such as rebuilding of the Line 3 Replacement in its current location.

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The MPCA contests both the adequacy of the environmental analysis and the lack of consideration of reasonable alternatives in the applications.¹

Failure to address alternatives and evaluate environmental impacts. Enbridge intends to locate the Line 3 Replacement pipeline adjacent to the Sandpiper pipeline between Clearbrook and Superior. The MPCA has filed comments raising environmental concerns with this route in the Sandpiper dockets (see Dockets 13-473 and 13-474). Since the Line 3 Replacement project follows the same proposed route, it raises substantially the same concerns that the MPCA expressed in Sandpiper, but the applications do not address those concerns.

It does not appear that Enbridge evaluated any system alternatives or route alternatives that have been included in the Sandpiper docket. Sandpiper System Alternative 3 and System Alternative 3 Modified (a route alternative included by the Commission in the Sandpiper route proceeding) are given minimal to no consideration.² Despite Enbridge's awareness of the significant environmental concerns expressed by state agencies and interested parties in the Sandpiper proceedings, and the alternatives offered in those dockets, the Line 3 Replacement applications do not address these alternatives.

The applications discuss three options, the preferred route and two alternatives involving replacement along or parallel to the existing Line 3, i.e., rebuilding Line 3 in place. However, the applications do not adequately discuss the alternatives for rebuilding Line 3 in place or the resulting impacts to environmental values of all three options. The applications also do not provide sufficient information for comparison and informed consideration of the options.

Need for comprehensive environmental analysis of cumulative environmental effects. The proposal to place Line 3 next to Sandpiper increases the potential to impact some of Minnesota's most pristine natural resources. The Commission has authority and responsibility under the Minnesota Environmental Policy Act, Minn. Stat. ch. 116D, to make a detailed evaluation of the potentially significant environmental effects, including cumulative potential effects, alternatives, and measures that would avoid or mitigate the potential environmental harm from this project. The possibility of simultaneous construction is not addressed, nor is the effect of continuous construction of two pipelines over extended construction seasons.

¹ The MPCA comments are generally directed to: the adequacy of Enbridge's CON application under Minn. R. 7853.0250.A (relating to the socially beneficial uses of the output of the project, including "its uses to protect or enhance environmental quality"); Rule 7853.0540 Alternatives; Rule 7853.0600 Information Required (environmental data); Rule 7853.0630, subp. 3 and 4 (safeguards); Rule 7852.2600, (route alternatives and description of environment); Rule 7852.2700 (environmental impact of preferred route); Rule 7852.3100 (consideration of alternative routes); and the sufficiency of the application for purposes of a detailed evaluation of the potentially significant environmental effects under the Minnesota Environmental Policy Act, Minn. Stat. Ch. 116D.

² The MPCA and MDNR have provided extensive environmental information on SA-3M as an alternative to the Applicant's route. (See MPCA's Oct. 29, 2014 comment identifying a specific route for SA-3M, and MDNR's Jan. 23, 2014 comment letter).

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Section 7.1.3 of the route application (Impact Calculations) states that calculations are based on an assumption that the Sandpiper pipeline will be constructed first. Timing of the construction of both projects is important. Construction of both lines could begin in 2016, yet the possibility and consequences of simultaneous construction are not addressed. Construction of the two projects in the same corridor may well result in greater impacts to surrounding terrain and water bodies than would occur if one project were built after another, because staging, spoils placement, and work space could not fully use the corridor. The discussion of project impacts should address the potential of concurrent construction impacts and the effects of extended construction of two projects in the same corridor on human, natural and environmental resources. The absence of that analysis in this section contributes to an inadequate analysis of likely site conditions and of the anticipated construction activity sequence.

Response on spill analysis. The applications do not have a sufficiently detailed analysis of the effects of a potentially catastrophic failure. In the introduction to section 7.0 of the route application, addressing the environmental impact of the preferred route, Enbridge makes the following statement:

The Minnesota Pollution Control Agency (MPCA) and Minnesota Department of Natural Resources (MNDNR) have expressed concern with regard to the potential impacts of a catastrophic oil spill from the Project on environmental resources. An overall incident frequency was developed for the Keystone XL Project³, which is also designed of x70 steel pipe. Based on these statistics, it is highly unlikely that a spill or leak will occur along any given small section of the pipeline. Therefore potential impacts from a theoretical oil release are not identified in Section 7.0 due to the extremely low frequency and many assumptions that would first be necessary to adequately quantify how a leak would affect the environment. Enbridge will continue to work with the applicable agencies regarding leak prevention measures and emergency response.

While the MPCA agrees that it may be unlikely for a spill to occur at “any given small section of the pipeline,” the applications do not adequately discuss potential environmental impacts such as what would occur to surface water, drinking water, human health, terrestrial wildlife, aquatic wildlife, vegetation, soils, and other resources in the event of a spill, as required by Rule 7852.2700. It is reasonable to anticipate that a leak or spill will occur at some point during the operational life of the pipeline. The applications should address the potential impacts that a significant spill would have on the various types of terrain and aquatic resources along the project route.

To summarize, the MPCA believes that information minimally necessary for any meaningful assessment and comparison of potential environmental impacts under the criteria of PUC rules and MEPA are missing from Enbridge’s current applications.

³ The MPCA notes that the Executive Summary of the Final Supplemental Environmental Impact Statement for the Keystone XL project (Page 30), states that the risk of spills and leaks represents the “greatest potential threat to water and aquatic resources.”

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Thank you for consideration of these comments.

Sincerely,

A handwritten signature in blue ink, reading "William Sierks". The signature is fluid and cursive, with the first name "William" and last name "Sierks" clearly legible.

William Sierks, Manager
Environment & Energy Section
Resource Management & Assistance Division

WS:bt



Minnesota Pollution Control Agency

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June 24, 2014

Mr. Larry B. Hartman
Environmental Manager
Minnesota Department of Commerce
85 7th Place East, Suite 500
St. Paul, MN 55101-2198

RE: Enbridge Sandpiper Pipeline Project - North Dakota Pipeline Company LLC
Pipeline Routing Permit Application, MPUC Docket No. PL-6668/PPL-13-474
Replacement May 30, 2014 Letter with Maps

Dear Mr. Hartman:

On April 14, 2014, the Minnesota Public Utilities Commission (PUC) extended the comment period in the matter of the Application of North Dakota Pipeline Company LLC for a Pipeline Routing Permit for the Sandpiper Pipeline Project (Sandpiper) in Minnesota. This letter appends the Minnesota Pollution Control Agency (MPCA) letter on this subject, which was submitted to you on April 4, 2014.

We understand the topics open for comment include alternate routes, human and environmental impacts to be studied in the Comparative Environmental Analysis (CEA), and whether any specific methods or mitigation exist to address these impacts that should be studied in the CEA. MPCA's additional comments on these topics include:

- Inspection and monitoring
- Additional items for evaluation in the CEA
- Watershed Restoration and Protection Strategy
- Carbon footprint
- Environmental justice
- Alternate route analysis
- Cumulative impacts

Inspection and Monitoring

On April 16, 2014, Enbridge, doing business as North Dakota Pipeline Company LLC, submitted a proposal to the MPCA regarding independent/third-party environmental monitors for the proposed Sandpiper project. MPCA does not agree that Enbridge should be hiring and directing these inspectors/monitors, but rather that they report directly to a state agency with jurisdiction over the project. The MPCA requests that the PUC require that another agency directly hire independent inspection and monitoring contractors and/or temporary staff to conduct this work under MPCA oversight to be funded by Enbridge.

The structure, work plan, and cost of a monitoring and inspection plan should be determined while the CEA is being prepared. The MPCA and Minnesota Department of Natural Resources (MDNR) staff, who have been working collaboratively on the Sandpiper project, are willing to participate with Enbridge and

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participating agencies to develop the appropriate information and mechanism. The mechanisms for this would be worked out among the parties. The payment of the state's reasonable costs should be a provision of the PUC's route permit issued to Enbridge.

Additional Items for Evaluation in the CEA

The MPCA requests that Enbridge complete a Phase I Environmental Assessment (Phase I) of the selected pipeline construction corridor in accordance with the All Appropriate Inquiry (AAI) standard as per the National Environmental Policy Act (NEPA), Title 40, Code of Federal Regulations Part 312. The Phase I is conducted to research and review potential locations of existing/historic dumps, hazardous waste sites, and other environmental concerns. If areas of environmental concern are identified in association with construction of the pipeline, Enbridge should be required to prepare work plans to describe how solid/hazardous waste/contaminated soil and groundwater will be investigated prior to construction, and how impacted areas will be dealt with in accordance with state and local regulations.

MPCA requests that the CEA include a detailed risk assessment regarding the potential for leaks to occur, how much oil might be released, and how this could affect groundwater, surface water, aquatic life, and others. The hydrogeology of the pipeline corridor area should be studied to determine potential fate and transport of a release, and potential vapor intrusion issues if a release occurs in close proximity to human habitation.

Watershed Restoration and Protection Strategy

In 2006, the Minnesota Legislature passed the Clean Water Legacy Act, which required the MPCA to develop an approach to comprehensively monitor and assess the waters of the state every 10 years, and provided one-time funding for that effort. In order to provide long term, consistent funding for Minnesota's clean water efforts, on November 4, 2008, Minnesota's voters passed the Clean Water Land and Legacy Amendment (Legacy Amendment) to the Minnesota Constitution to, in part, protect and restore lakes, rivers, streams, and groundwater. The Amendment imposed three-eighths of one percent sales tax to fund the effort for 25 years. Subsequently, in 2013, the Clean Water Accountability Act was passed by the Minnesota Legislature. This new law requires the MPCA to develop watershed restoration and protection strategies (WRAPS) for each of the state's 81 major watershed units, which correspond to the 8-digit hydrologic unit codes (HUCs). WRAPS include the monitoring and assessment information, as well as land use-based models that demonstrate the source of the highest contributors of pollutants in each watershed. This information is then used to develop strategies to either protect waters that meet water quality standards or restore waters that do not meet standards.

The WRAPS is a collaborative effort that involves the MPCA, the MDNR, the Board of Water and Soil Resources, the Department of Health, the Department of Agriculture, local soil and water conservation districts, watershed districts, the University of Minnesota, industry and business organizations, and the private citizens of Minnesota. WRAPS components are: monitoring and assessment of hydrology and the chemical and biological constituents of water quality, a stressor identification process, total maximum daily loads (TMDLs) and restoration plans for impaired waters, protection strategies for waters that currently meet standards, and a civic engagement process to assist stakeholders with implementing protection and restoration strategies.

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While not yet completed, WRAPS are in process in the following major watersheds that the Sandpiper proposal will cross, also identified by the corresponding eight-digit HUCs:

· Grand Marais Creek	HUC 09020306
· Red Lake River	HUC 09020303
· Clearwater River	HUC 09020305
· Mississippi – Headwaters	HUC 07010101
· Crow Wing River	HUC 07010106
· Pine River	HUC 07010105
· Mississippi – Grand Rapids	HUC 07010103
· Kettle River	HUC 07030003
· St. Louis River	HUC 04010201
· Nemadji River	HUC 04010301

One of the first tenets of any protection strategy is to avoid impacts where possible. The Sandpiper proposal is not consistent with the protection strategies that are currently in development for these WRAPS, due to the large number of high quality surface waters that lie along the path of the proposed route. Enbridge should participate in stakeholder groups for these WRAPS. Stakeholder groups provide a forum for engaged citizens and interested groups to develop implementation strategies to restore and protect each watershed. The CEA should review and consider how to integrate the strategies into the proposal, or find alternate routes that have less potential for impacting surface and groundwater.

Carbon Footprint – Greenhouse Gas Emissions

The MPCA is concerned about the carbon footprint of a project. The Minnesota Legislature established greenhouse gas (GHG) reduction goals in the Next Generation Energy Act (Minn. Stat. 216H.02). The goals of the Next Generation Energy Act are to reduce greenhouse gas emissions by 15 percent below 2005 levels by 2015, and 80 percent by 2050. Greenhouse gases, upon release to the atmosphere, warm the atmosphere and surface of the planet, and lead to alterations in the earth's climate. The GHG emissions measured and reported in Minnesota include carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄), sulfur hexafluoride (SF₆), and two classes of compounds known collectively as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs). These GHG emissions result from fuel combustion, the calcination of limestone, the degradation of organic (peats) and mineral soils, permanent land clearing and forest harvesting, and a variety of other sources. Pertaining to this project, source types include stationary and mobile source combustion from construction equipment, emissions from venting, and wetland and forest disruptions.

To track progress with the Next Generation Energy Act reduction goals, the CEA should evaluate the GHG emissions from the project and the impact these emissions may have on the attainment of the state's GHG reduction goals. Alternatives and options to reduce GHG emissions or to offset/mitigate GHG emissions should also be identified in the CEA. In addition, the CEA should evaluate the GHG impacts if this project is not built – specifically, if oil is transported by rail or truck instead of by pipeline.

Environmental Justice

The MPCA works to incorporate environmental justice principles into its projects. Environmental Justice (EJ) involves assuring the fair treatment and meaningful involvement of all persons, regardless of race or income when making environmental decisions. Fair treatment means that no group of people should

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bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental and commercial operations or policies. Meaningful involvement means: people have an opportunity to participate in decisions about activities that may affect their health and the environment in which they live; the public's contribution can influence the regulatory agency's decision; their concerns will be considered in the decision making process; and, decision makers seek out and facilitate the involvement of those potentially affected.

The proposed route of the Sandpiper Pipeline and other alternate routes may directly affect low income and minority populations. If a pipeline leak or break occurs, adverse impacts could occur in both surface and subsurface drinking water supplies, areas with stands of wild rice important to local Tribes and tribal members, cropland areas, impaired waters, and wildlife management areas among other types of environmental, social and economic impacts. If the Northern route or other alternate routes are chosen, the Sandpiper Pipeline may affect tribal lands.

The CEA should include consideration of EJ issues. The CEA should look at how pipeline construction and operation, and potential problems during each of these phases, may cause disproportionate impacts on low-income or minority populations. In addition, local, state, and federal agencies should engage residents to assure that they are aware of opportunities to participate in the process and understand how their comments and concerns are incorporated into the final draft CEA.

Alternate Route Analysis

The MPCA staff's analysis of the proposed Sandpiper route shows many water body crossings for which there would be very difficult or no access downstream of the crossing to clean up spills in the event of a crude oil release. The lack of possible access to these areas by people and equipment necessary to clean up spills increases the likelihood that an incident could result in significant long-term environmental damage. A failure to account for these possibilities is considered to be a substantial flaw with the currently proposed Sandpiper route.

There are many variables that could be examined when considering the potential for environmental damage in the event of a release. These include: soil types, wetland types, sensitive or endangered species, proximity to aquifers, hydrology, forest types, state park boundaries, proximity to human populations, proximity to areas with stands of wild rice, connectivity of surface waters, and others. However, for purposes of providing a simpler and effective comparison between alternative route proposals that is both visual and quantifiable (within certain limitations that will be discussed in this letter), MPCA staff has elected to compare the routes based on access to potential leak sites for purposes of containment of spills and possible clean up.

To minimize variables and subjectivity for this analysis, MPCA staff opted to identify, using ArcGIS technology, water body crossings that had neither road or traversable upland features within 250 feet of flowages of water (heavily forested areas are not considered for this purpose to be traversable, as trees would have to be removed before equipment could be brought in), or portions of larger wetland complexes that fell within a 2,000 foot buffer of the point where the proposed pipeline route was to cross a stream, lake, or wetland. The 250-foot distance from access point to flowage is somewhat arbitrary. MPCA staff conferred with contractors and engineers who specialize in road construction, and most felt that in a best-case scenario, with aggregate and equipment available, a 250-foot road into a bog or wetland would be constructed within 24 hours. Thus, for purposes of this analysis, MPCA staff

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assumed that it is possible to build an access road to reach areas where containment of a spill might be accomplished before the spilled product covers an area large enough that cleanup would be highly destructive to a sensitive environment, or impossible. Similarly, there is no regulatory basis for choosing the 2,000 foot buffer distance, other than it is a significant distance for oil impacts to occur over any surface water and easy to apply consistently statewide. It is a distance that for most people would be easy to visualize, yet small enough to create a fair comparison between routes. These numbers provide a basis for comparisons between routes and have little significance beyond that. However, if these criteria are used consistently for all proposed routes, it does provide a basis to compare the potential for each route to cause considerable environmental damage in the event of a release.

There are some factors to consider that fall beyond the scope of this comparison. For example, the water crossings proposed for the Sandpiper route are frequently streams or flowages with connectivity to other water bodies downstream. By contrast, water body crossings on the Northern route frequently involve very large wetland complexes rather than smaller, faster moving flowages. The area needed to access might be much greater, but the oil may move more slowly in such areas. Counting becomes a bit more difficult here as well, because it is difficult to establish criteria for counting "crossings" that is comparable to the different features observed in the Sandpiper route. In most cases, MDNR catchment flow lines were used to distinguish one crossing point from another.

In any case, the method used as a basis for comparison by MPCA staff does provide quantifiable data to analyze the proposed routes from a meaningful perspective: Which route proposals pose the greatest risk to create destructive and expensive containment and cleanup operations in the event of a spill?

MPCA staff compared four proposed routes in their entirety (see Figure A below). The four proposed routes that were compared were (1) The currently proposed Sandpiper route; (2) The "Northern" route, used by Enbridge for previous projects and which has been suggested as an alternative by other entities; (3) The "Alternative 3" route which was identified as a possible alternative by MPCA staff; and (4) The southern "Alternative 4" route which exits the state at the Iowa border and would be required to tie into the Enbridge infrastructure either in another state, or to circle around outside of Minnesota to end at the Superior Terminal. The fourth route was suggested as an alternative by a citizen group.

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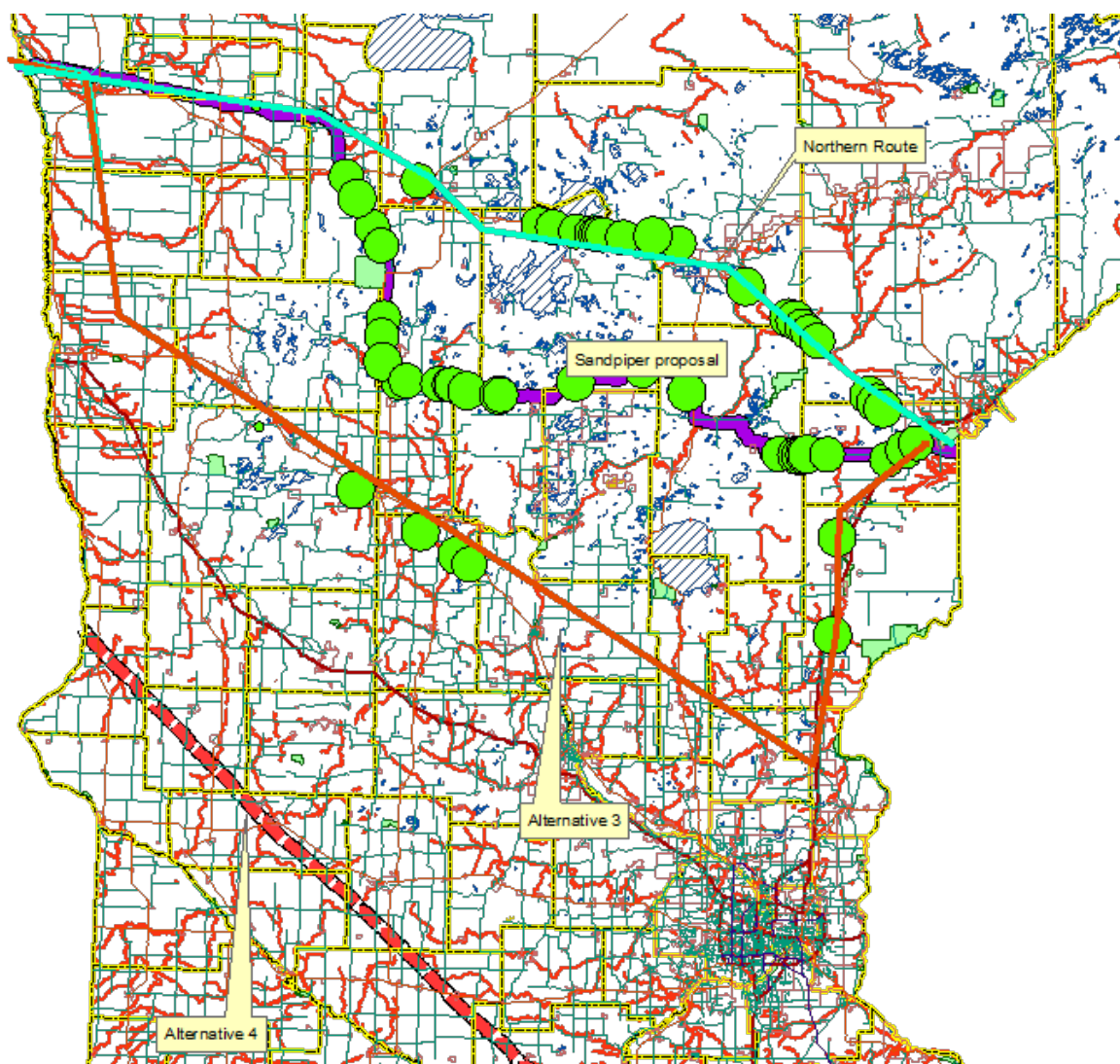


Figure A-The green circles mark points where MPCA staff have identified access concerns. Approximate locations of the four primarily examined proposals are also identified.

Any water body crossing, especially streams, rivers, or flowages of any kind that can carry oil downstream, pose the risk of creating large scale environmental damage in the event of a release. If possible, it is best to avoid crossing surface waters altogether with oil pipelines in order to minimize this risk. However, if a water body, bog or otherwise sensitive area is to be crossed, then serious consideration should be given to whether the site can be accessed quickly in the event of a release to contain the product, minimize migration of product into surface waters, soils and groundwater, and perform clean-up operations. In situations where roads have to be constructed to access a spill, the act of constructing the road, excavating and clearing vegetation can all exacerbate the damage that the spill itself created. Additionally, placement of flow control valves in strategic locations along/near sensitive areas may help to minimize backflow of product out of a fractured line into those areas.

A difficulty with aerial photograph analysis as opposed to field surveying of water crossings is that it is difficult to determine whether a stream or wetland is permanently, seasonally, or intermittently flooded. MPCA staff relied on National Wetland Inventory maps to identify wetland types, which will to

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some extent help to determine the likelihood of the wetland having open water at the time of a leak, which would allow transport of released oil to occur more quickly, or merely be in a state of saturated soil, which would result in easier and faster containment and cleanup of a spill. The results of the MPCA staff analysis are as follows:

Sandpiper Route

The proposed Sandpiper route crosses 28 water bodies for which there is no access for possible containment within 2,000 linear feet downstream of the proposed pipe crossing. Of these 28 water body crossings, one is a stream to lake system, 12 are wetland complexes, 10 are streams that flow to wetland systems, and five are streams that flow to areas with stands of wild rice. Below is a list of the water body crossings for this route option, followed by example Figures B and C:

NAME of ROUTE	TOWNSHIP NAME	LOCATION (TWP/RNG/SEC)	LOCATION of AREA
Sandpiper Route	Mahtowa	T47 R18W S8	Moose Horn River
Sandpiper Route	Salo	T47 R22W S1	Headwaters Sandy River
Sandpiper Route	Salo	T47 R22W S2	Headwaters Sandy River
Sandpiper Route	Automba	T47 R21W S6	West Branch River
Sandpiper Route	Salo	T47 R22W S6	Headwaters Sandy River
Sandpiper Route	Automba	T47 R21W S6	West Branch River
Sandpiper Route	Automba	T47 R21W S1	Heikkila Creek-Kettle River
Sandpiper Route	Atkinson	T48 R18W S36	Blackhoof River
Sandpiper Route	Copley	T147 R37W S34	Walker Brook
Sandpiper Route	Moose Creek	T146 R36W S29	Upper Rice Lake-Wild Rice River
Sandpiper Route	Bull Moose	T138 R31W S12	Headwaters South Fork Pine River
Sandpiper Route	Bull Moose	T138 R31W S11	Headwaters South Fork Pine River
Sandpiper Route	Bull Moose	T138 R31W S11	Headwaters South Fork Pine River
Sandpiper Route	Arago	T141 R35W S17	Hay Creek
Sandpiper Route	Northwest Aitkin	T50 R26W S22	White Elk Creek
Sandpiper Route	McKinley	T138 R32W S3	Goose Lake-Big Swamp Creek
Sandpiper Route	McKinley	T138 R32W S4	Goose Lake-Big Swamp Creek
Sandpiper Route	Crow Wing Lake	T139 R33W S36	Burgen Lake
Sandpiper Route	Crow Wing Lake	T139 R33W S36	Burgen Lake
Sandpiper Route	Crow Wing Lake	T139 R33W S33	Town of Huntersville-Crow Wing River
Sandpiper Route	Straight River	T139 R35W S36	Blueberry Lake-Shell River
Sandpiper Route	Blind Lake	T139 R28W S26	Arrowhead Lake
Sandpiper Route	Hubbard	T139 R34W S31	Shell River
Sandpiper Route	Beulah	T139 R25W S9	Moose River
Sandpiper Route	Straight River	T139 R35W S6	Straight River
Sandpiper Route	Bear Creek	T145 R36W S35	Gill Lake-Mississippi River
Sandpiper Route	Todd	T140 R35W S6	Fishhook Lake
Sandpiper Route	Lake Hattie	T144 R35W S19	LaSalle Lake-Mississippi River

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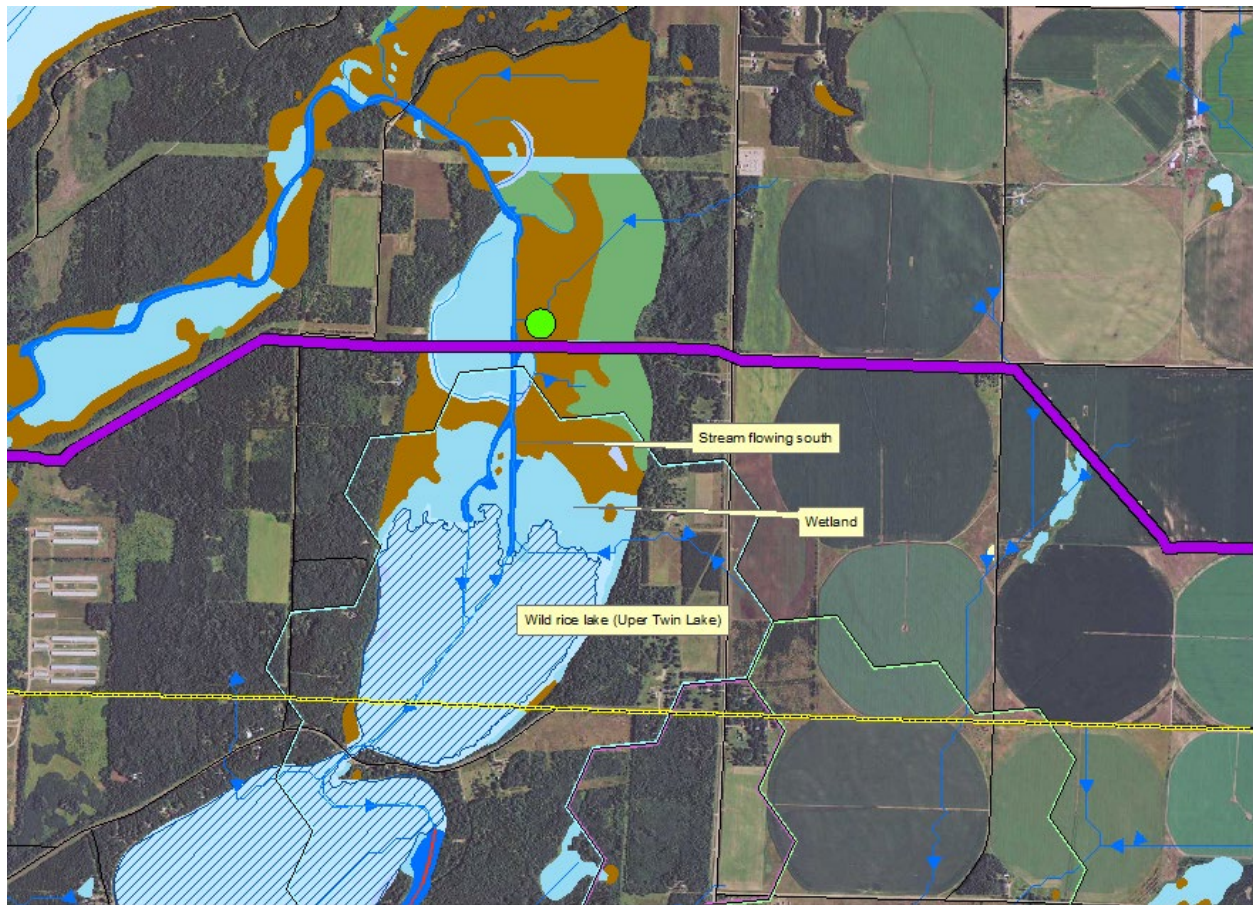


Figure B - This shows an example of a proposed crossing point over surface water that flows south (see arrows on dark blue flowage line) through a wetland complex and into a wild rice lake (the Twin Lakes near Menahga and Park Rapids, MN). However, to determine accessibility, the wetland identification layer must be turned off so that land features can be examined as in Figure C below. The purple line is the proposed Sandpiper route. (Scale 1:24,001)

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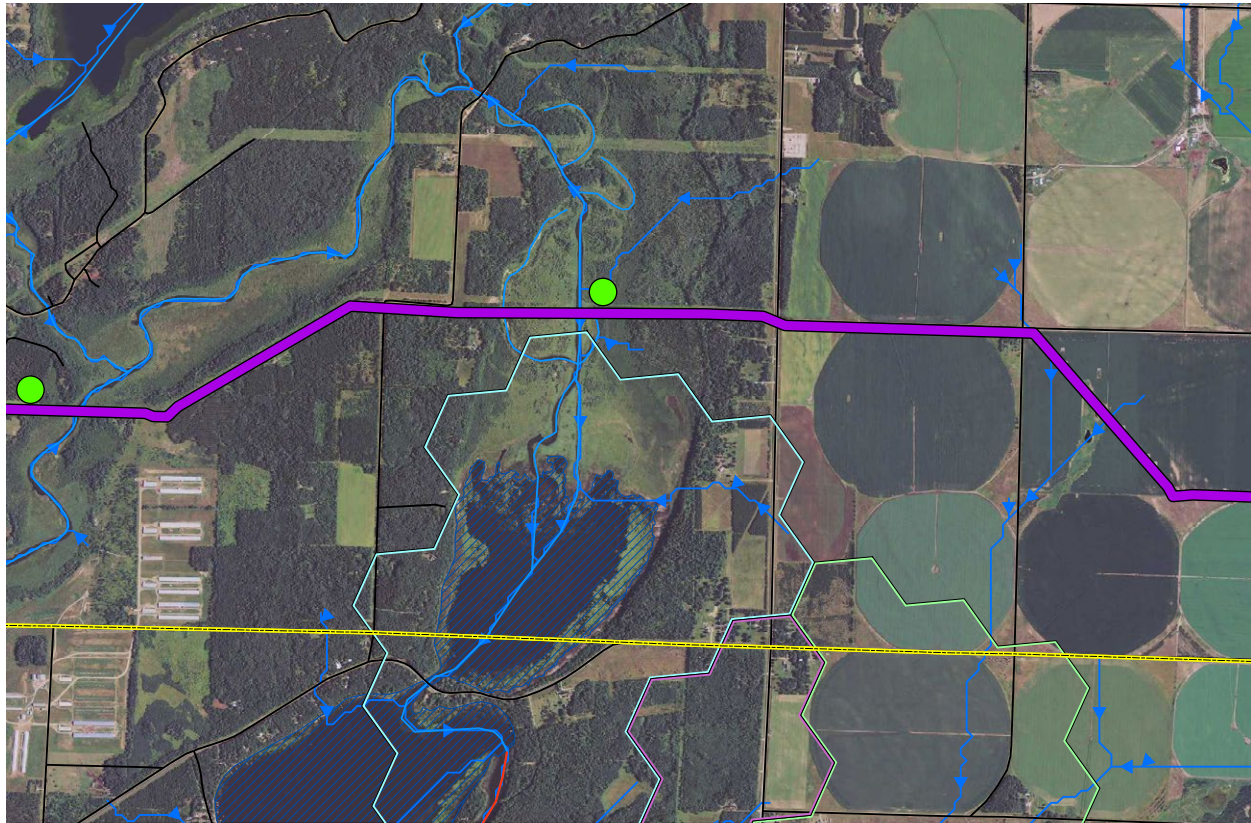


Figure C-Here, the wetland layer is turned off so that the landscape can be examined for accessibility. In this instance, there are no roads or open farmland to bring containment or clean-up equipment within 1,500 feet of the flowage that would potentially deliver leaked crude oil into the upper most of the Twin Lakes. The curvy black line between the lakes is a road, and the first good point of access. This road is 6,700 feet from the pipeline crossing, although it is possible that boats or barges could access the lake from the farm fields to the right (east) or the road (black line) to the left and contain a spill within the lake. (Scale 1:24,001)

Hill Route

The “Hill route alternative,” suggested by the MDNR as a way to avoid features of concern, would not differ from the proposed Sandpiper route based on the criteria discussed here.

Northern Route

The Northern route, which parallels the path of the Alberta Clipper project, crosses 20 water bodies for which there is no access within 2,000 feet downstream of the location where crossings would occur if the route were followed. Along the Northern route, water bodies without access to potential leak sites within 2,000 feet include one stream that flows to a lake, 14 wetland complexes, five stream/wetland systems, and two streams or wetlands that flow to areas with stands of wild rice or wetlands. Below is a list of the water body crossings for this route option, followed by example Figures D and E:

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NAME of ROUTE	TOWNSHIP NAME	LOCATION (TWP/RNG/SEC)	LOCATION of AREA
Northern Route	Pot Shot Lake	T52 R21W S8	Floodwood River
Northern Route	Northeast Aitkin	T52 R22W S1	West Branch Floodwood River
Northern Route	Wawina	T53 R22W S27	West Branch Floodwood River
Northern Route	Deer Lake	T56 R26W S29	Mississippi River
Northern Route	Bowstring Lake	T144 R26W S3	Little Winnibigoshish Lake-Miss. River
Northern Route	Morse	T145 R25W S35	White Oak Lake-Mississippi River
Northern Route	North Cass	T145 R27W S35	Sixmile Brook
Northern Route	North Cass	T145 R27W S34	Sixmile Brook
Northern Route	North Cass	T145 R27W S34	Sixmile Brook
Northern Route	North Cass	T145 R27W S33	Sixmile Brook
Northern Route	North Cass	T145 R28W S26	Sixmile Brook
Northern Route	Wawina	T53 R22W S28	West Branch Floodwood River
Northern Route	Blackberry	T54 R24W S13	Blueberry Lake-Mississippi River
Northern Route	North Cass	T145 R29W S24	Portage Creek
Northern Route	North Cass	T145 R29W S20	Portage Creek
Northern Route	Wilton	T147 R34W S34	Grant Creek
Northern Route	Pot Shot Lake	T52 R21W S22	Floodwood River
Northern Route	Perch Lake	T49 R18W S7	Perch Lake
Northern Route	North Carlton	T49 R19W S1	Stoney Brook
Northern Route	Arrowhead	T50 R19W S27	Bog Lake

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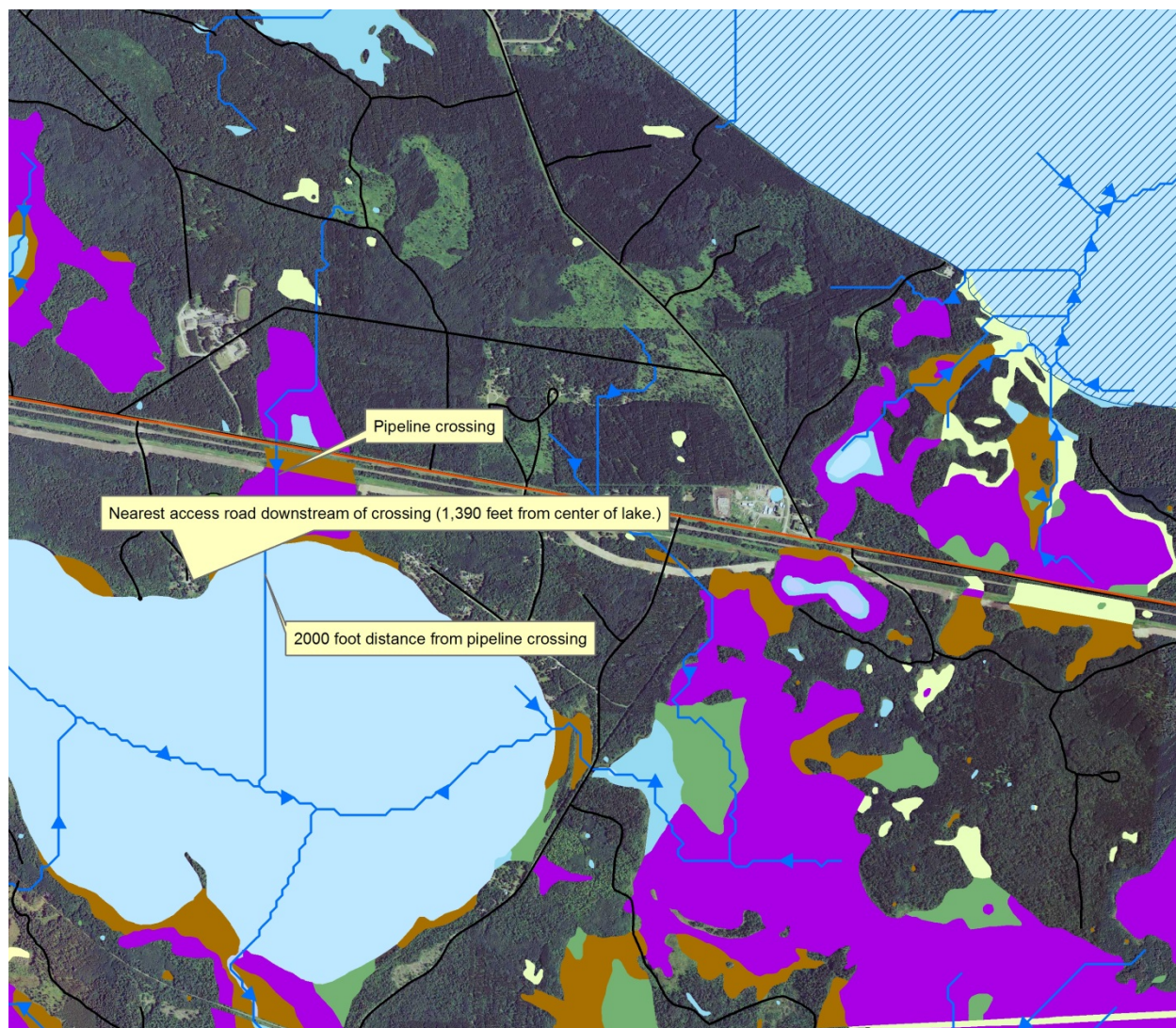


Figure D-With NWI wetland layer turned on, one can see wetland extending well beyond the 2,000 foot buffer at this crossing along the "Northern" route. The purple is bog, the green is forested wetland. In Figure E below the wetland layer is turned off so that accessibility to a potential leak here can be determined. (Scale 1:24,001)

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Figure E- With the wetland identifying layers turned off, one can see that there are no roads or upland areas from which to access potential leak sites at this crossing. There is a possible access point identified to the southwest of the pipeline crossing, but containment equipment would have to be strung across over 3,000 feet of wetland as it flows into the lake to contain all of a release as it flows to the south. (Scale 1:24,001)

Alternative 3 Route

The Alternative 3 route corridor, which was referenced earlier in the letter, begins at the same western point that both the Sandpiper and Northern routes do; however, roughly 20 miles west of the North Dakota border it veers south and follows an existing (possibly abandoned) pipeline south and then southwest to roughly five miles west of North Branch, Minnesota, where it then follows another corridor in a northerly direction, where it eventually intersects with the proposed Sandpiper route just west of Superior, Wisconsin. This route has 7 water body crossings with no access within 2,000 feet downstream of the pipe crossing; however, these water bodies are often smaller wetland complexes than are seen on either the Sandpiper route or the Northern route. These crossings without access within 2,000 feet

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include two wetland complexes, four stream/wetland systems, and one area with stands of wild rice. Below is a list of the water body crossings for this route option, followed by example Figures F and G:

NAME of ROUTE	TOWNSHIP NAME	LOCATION (TWP/RNG/SEC)	LOCATION of AREA
Alternate Route 3	Mission Creek	T40 R21W S12	Mission Creek
Alternate Route 3	Fawn Lake	T132 R32W S34	Lower Turtle Creek
Alternate Route 3	Fawn Lake	T132 R32W S19	Fish Trap Creek
Alternate Route 3	Kettle River	T44 R20W S8	City of Willow River-Kettle River
Alternate Route 3	Bartlett	T133 R34W S23	Moran Creek
Alternate Route 3	Compton	T134 R36W S5	Deer Creek-Leaf River
Alternate Route 3	Twin Lakes	T48 R17W S21	Blackhoof River

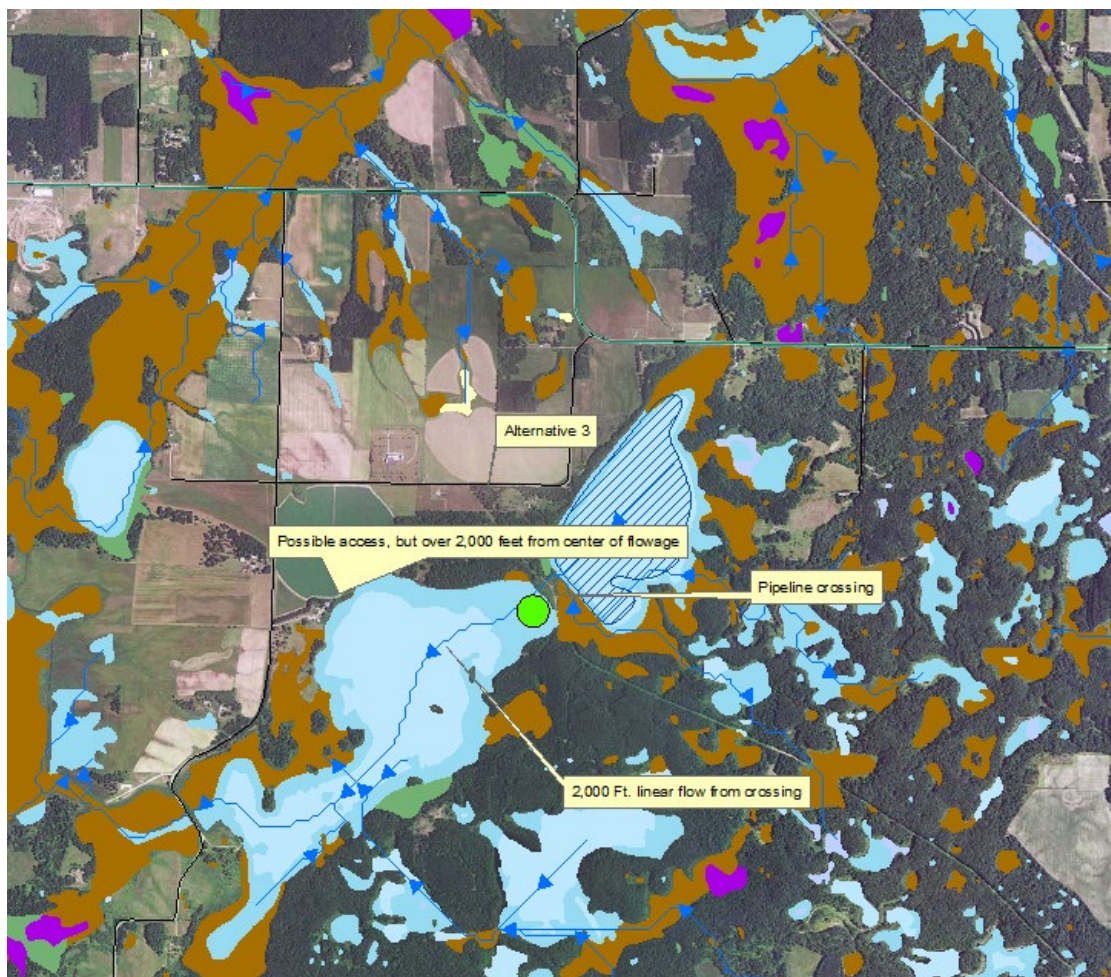


Figure F - Wetland layer identifies an open water wetland south of the pipe crossing that would likely receive oil from a leak. Wetland layer turned off in Figure G below. (Scale 1:24,001)

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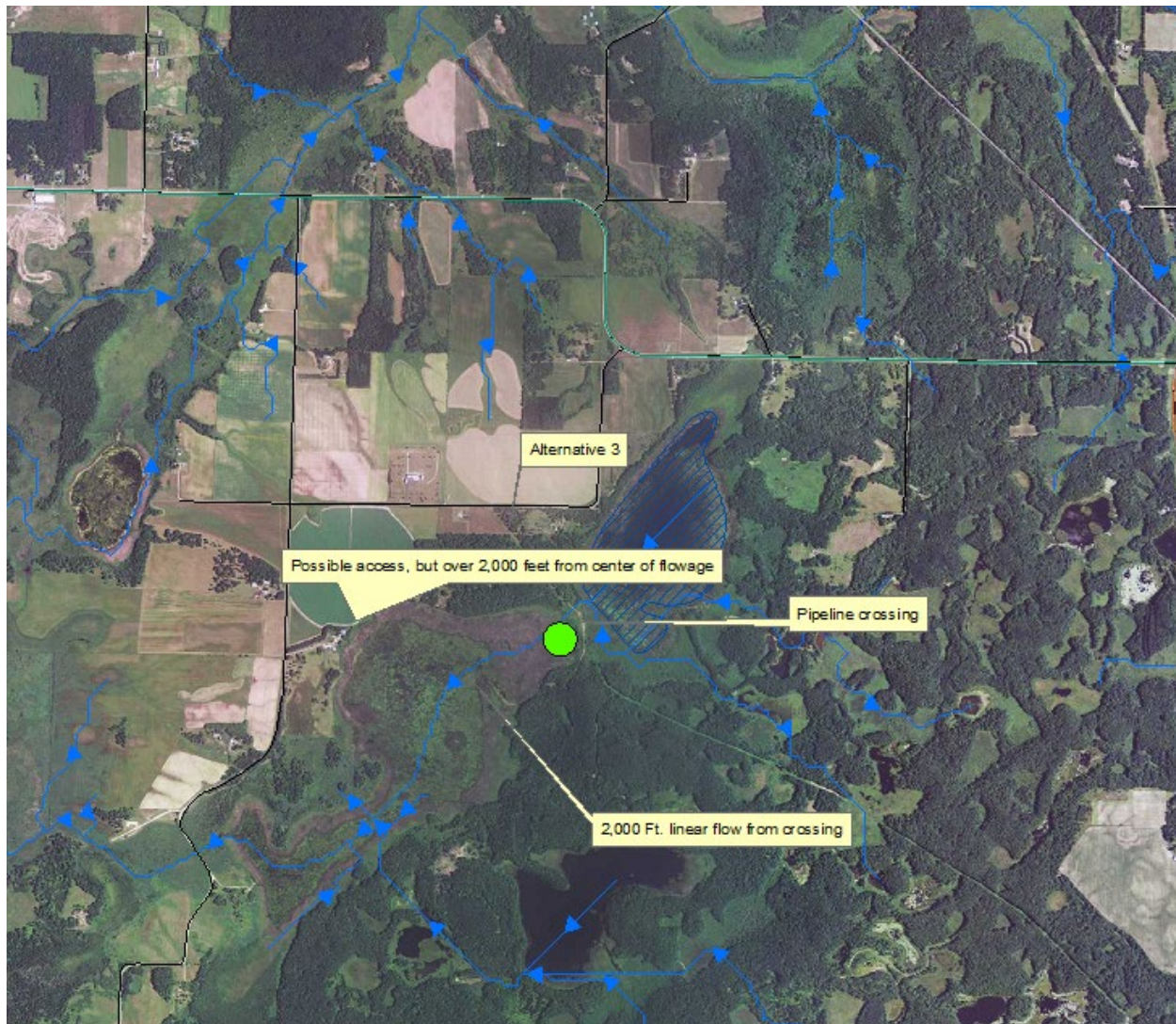


Figure G-With wetland layer turned off, one can see that the nearest access to the main stem of the flowage is roughly 2,000 feet to the west. If the wetland is traversable by boat or barge, which is possible given the wetland type (Type 3/5 shallow marsh and open water) then it is possible that access to material could be gained within the 2,000 foot buffer here. (Scale 1:24,001)

Alternative 4 Route

The Alternative 4 corridor enters the state in Traverse County just west of Wheaton, Minnesota, and runs to a southeast bearing until it exits the state south of Austin, Minnesota. A pipeline along this route would cross no water bodies lacking access within 2,000 feet of a potential leak site in surface water. There are very few water bodies crossed by this route in general over the proposed route.

National Hydrography Dataset

Even if access issues are taken out of the equation, the proposed Sandpiper route does not fare well in comparisons with alternative proposals based on examination of the National Hydrography Dataset

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(NHD) layer. Using the NHD layer, the proposed Sandpiper route would cross 20 water bodies, the Northern route would cross 10, the Alternative 3 route would cross 12, and the Alternative 4 route would cross 1 water body within the state of Minnesota. The NHD layer obviously does not identify all water bodies that are being crossed; however, it does identify water bodies that are part of a connected network of surface waters which may also be a good gauge of potential environmental impact if an incident were to occur.

Notably, the two routes in this analysis that crossed the fewest water bodies and put water resources at the lowest risk for environmental damage both aligned away from the Clearbrook terminal. Perhaps the most problematic aspect of the design of this proposed route is the continued expansion of terminal capacity at the Clearbrook location. Any pipelines that are built to transport material out of the Clearbrook terminal are forced to enter the largest concentration of lakes, streams, and open-water wetlands in the state. Any route proposed out of Clearbrook, either south or east will cross dense expanses of open waters. A northern to eastern route from Clearbrook would cross massive wetland complexes and areas with stands of wild rice. If future, new terminals, were to be constructed in western Polk (could collect from Canada or North Dakota), Kittson (could collect from Canada or North Dakota) or even Clay counties (North Dakota) the creation a route proposal that avoids the greatest concentration of surface waters becomes feasible.

Summary of Route Analysis

There are numerous pipeline corridors that currently exist in Minnesota. Of those, there are several that cross far fewer water bodies and have better potential for access in the event of a release than the current Sandpiper proposal. MPCA staff examined three existing corridors in addition to the proposed Sandpiper route. While performing risk assessment, the current use of the corridors in question should also be considered, as much of the proposed Sandpiper route follows a corridor in which three other oil pipelines currently exist. Thus, not just one pipeline would be crossing sensitive water bodies with limited access, but four. The likelihood of an incident in which crude oil product is released is thus greater than what a single pipeline would entail. This is also true of the Northern route, in which numerous pipelines carrying crude oil exist. What has happened in the past with regard to location of pipeline routes is from this perspective unfortunate; MPCA staff believes that past routes have crossed too many water bodies in inaccessible areas, and the risk of large-scale impact as a result of a release incident is significant and ongoing. As this analysis shows, options posing a lesser risk to surface waters may be available.

Of the four possible routes that MPCA staff has examined, the proposed Sandpiper route and the previously followed Northern route show a significantly higher potential for environmental damage than either the Alternative 3 or Alternative 4 routes. It is also possible that an as-yet unexplored route could also score well relative to the Sandpiper proposal. The analysis of the Alternative 4 route is incomplete in that possible impacts outside of the Minnesota state boundaries were not looked at, so the surface waters avoided or protected by this route are only located in Minnesota per this analysis. It is also acknowledged that the MPCA staff analysis focused on the potential water quality and natural resource aspects of the project and not on other types of resources or land uses.

Nevertheless, the criteria adopted for this analysis show a clear difference in potential risk to surface waters between the Sandpiper proposal and other possible routes, and that in the event of a significant

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oil release, the Sandpiper route proposal has a significantly greater potential for large-scale environmental damage than other route proposals.

It is important to note that the construction of accesses through sensitive “no access” areas as a preventative measure can also create environmental hazards and damages and cannot be assumed to be an acceptable remedy. Rather, route proposals put forth now and in the future should take these factors into consideration and avoid continuing to cross surface waters at these locations. The minimization of surface water crossings in any location should become a priority for consideration when planning a route to construct a pipeline.

Cumulative Impacts

The NEPA, Title 40, C.F.R. 1508.7, defines cumulative impact as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”

The cumulative impacts review in the CEA should include current and proposed transmission line corridors, highway construction, water delivery systems, landfills, railroads, power generations plants, feedlots, and mine and mineral extraction sites which have the potential to interact with the proposed project. The CEA should also review the potential for significant cumulative effects related to past, present and future projects in the Duluth/Superior area involving increased transmission, storage, processing or refining activities, including the expansion of the Calumet Superior Refining facility in Superior, Wisconsin, or transportation of oil, fuels or products refined or manufactured from oil. Areas in which such impacts could occur include air quality in Duluth and the surrounding area in Minnesota, water quality as related to new or increased discharges or shipping activities, and transportation whether by truck, rail or ships.

The CEA should identify the impacts of past incidents associated with pipeline construction and operation, past incidents involving two or more associated utility lines, accidents or emergencies which may arise due to an unforeseen chain of events during the operational life of the pipeline, and effects within the project limits, and local and regional effects. Cumulative impacts may occur to:

- Human activities, such as recreation, agriculture and loss of prime farmland
- Wildlife including migratory birds and aquatic species
- Habitat and alterations to terrestrial vegetation
- Endangered species
- Air quality, including dust (particulate matter) and visual impacts
- Land values
- Watersheds
- Local and state socioeconomics

According to data provided by the Pipeline and Hazardous Materials Safety Administration (PHMSA), to date, there are 2,408 miles of crude oil pipeline in the state of Minnesota. More are planned within the next few years. Much of this infrastructure exists in corridors shared by several other pipelines carrying liquefied petroleum gas, natural gas, diluent for tar sands oil, refined petroleum product and other

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hazardous materials. In total, there are 10,475 miles of pipeline through the state. According to PHMSA, over the last 20 years, there has been an average of 14 spills from pipelines per year in Minnesota, an average of 1,812 barrels of hazardous liquids spilled per year in Minnesota, an average of 1,093 net barrels lost per year in Minnesota, and an average of \$3,135,572 of property damage annually in Minnesota. Five lives have been lost as a result of pipeline incidents.

The MPCA has numerous concerns about the number of pipelines planned to use the same corridors. With each water body crossed by a pipeline carrying crude oil, the risk of a major incident increases. A cursory review of the PHMSA web site identifies apparent causes of pipeline failure to include: incorrect operation, equipment failure, internal and external corrosion, third party damage (excavation), construction damage, material failure (pipe, fitting, weld), weld leak, and other unknown causes. For example, at the site of the Enbridge pipeline release in Marshall, Michigan, the National Transportation Safety Board found “that deficiencies in Enbridge’s integrity management (IM) program contributed to the release of hazardous liquid...” (Federal Register, Volume 79, No. 87, Tuesday, May 6, 2014 (25990 – 25994). See also Enbridge Incorporated Hazardous Liquid Pipeline Rupture and Release, Marshall, Michigan, July 25, 2010 (NTSB/PAR-12/01, PB2012-916501). Ultimately, the perspective should not be if a pipeline fails, but how will a release be mitigated when a failure occurs and at any given location (and the environmental susceptibility of that area to a release).

As explained above, MPCA examination of the proposed Sandpiper route and the previously used Northern route (Alberta Clipper) shows that significantly more open water bodies are crossed by the pipelines in these corridors than alternative routes. Far more of these crossings have no available access within a 2,000 foot buffer, meaning that release incidents are more likely to impact surface waters within that 2,000 buffer. Both the Sandpiper and Alberta Clipper routes are corridors for numerous crude oil pipelines; consequently, these routes are more vulnerable and less able to properly mitigate damage to aquatic environments. Whereas oil does travel through soils and overland, it travels significantly farther in aquatic environments.

Pipeline construction will involve soil excavation, vegetation removal, the crossing of water bodies, and the alteration or loss of wildlife habitat. These activities and the creation of new corridors can result in forest fragmentation affecting numerous species of wildlife that require expanses of undisturbed forest. Wetland perches may be broken causing alteration of natural hydrology in wetland areas, and stream geomorphology can be altered by damaging banks or stirring up stream bottoms. Herbicides used to control vegetation in pipeline corridors may adversely affect pollinators, particularly honeybees, resulting in hidden impacts that are difficult to trace, but nonetheless exist.

The construction, operation, maintenance, incidents and repairs associated with crude oil pipelines have been accompanied by significant environmental impacts. With more proposals in the works, more cumulative impacts can be expected to occur. Therefore, concerted effort is needed to take a close look at and carefully analyze the creation of common routes and corridors for pipeline projects where the risks of impacts to the environmental and human health can be minimized. The routes that have been used in the past pose substantial risks as noted above. Continuing to open more corridors will increase these risks and impacts. The MPCA would support and participate in a joint effort by state agencies to begin examining the feasibility of such a corridor, both for the purpose of expediting approval of future proposals and minimizing the potential for environmental impacts. A fresh look at the routing of energy transportation projects from a larger and more comprehensive perspective has the potential to make a