



**Tip of the Mitt Watershed Council  
Comment Regarding the Draft Final Report  
Independent Risk Analysis for the Straits Pipelines  
A Multi-organizational Initiative Led by Michigan Technological University  
August 19, 2018**

Tip of the Mitt Watershed Council, on behalf of its 2,700 plus members, would like to thank you for the opportunity to provide comments on the Draft Final Report Risk Analysis for the Straits Pipelines (Draft Report), prepared by Michigan Technological University, released on July 16, 2018.

As a means of introduction, Tip of the Mitt Watershed Council, founded in 1979, is a nonprofit organization based in Petoskey, Michigan whose purpose is to protect, restore, and enhance water resources, including inland lakes, rivers, wetlands, groundwater, and the Great Lakes. We have staff appointed by Michigan's Governor to serve on the Michigan Pipeline Safety Advisory Board. We base all our programs on sound science and policy analysis, and have garnered respect for our work from local, state, and federal agencies, businesses, fellow environmental organizations, and citizens. Pursuant to our mission to safeguard our waters, we reviewed the Draft Report and offer the following comments.

**Overall**

We would like to commend Dr. Guy Meadows and his team of researchers for the hard work, time and effort that went into the completion of the draft report. Overall, the report is comprehensive and thorough and it was drafted in a timely manner. Completion of this report is essential to help guide decisions about the future of the Line 5.

We appreciate the approach taken with respect to the "worst case" scenario to attempt achieve the maximum possible loss level and using different worst case scenarios based upon the task being evaluated. The methodology used accurately captures the fact that Line 5 in the Straits of Mackinac are a low probability, high consequence scenario. However, we believe assumptions made resulted in conservative estimates. Oil spills are rarely detected immediately. In addition, the tiers of failure are based upon Enbridge Energy properly following operating procedures. History of oil spills, including Enbridge incidents in Michigan, has shown that human error comes into play more often than not and operating procedures are not always properly implemented in emergencies.

In addition, Enbridge transports synthetic crude derived from the oil sands in Western Canada through Line 5. We have little, if any at all, science on how this particular product behaves in a freshwater environment in the event of a spill. The National Academies released a report, “Spills of Diluted Bitumen from Pipelines: A Comparative Study of Environmental Fate, Effects, and Response,” that concludes that bitumen, if spilled, has unique properties that affect its behavior in the environment. What we do not know is if weathering of the synthetic crude would be similar to weathering of diluted bitumen and if it would also generate a residue similar to the initial bitumen that may be more likely to submerge. This unknown could dramatically impact both the fate and transport and ability to contain and cleanup an oil spill in the Straits.

In general, the report would be improved if many of the tables were formatted in a manner that was easier for readability and public consumption.

### **Specific Comments**

#### **Introduction**

- Correct the formal title of the owner and operator of Line 5. In legal documents with state and federal governments, including the 2016 Consent Decree and the November 2017 Agreement, the owner of Line 5 is referred to “Enbridge Energy, Limited Partnership,” as opposed to “Enbridge Energy Limited Partners.’ (p. 32)
- Acknowledge that the risk to the public trust waters of the Great Lakes does not solely come from the twin pipelines located on the State-owned bottomlands in the Straits of Mackinac. The text mentions that line 5 crosses navigable waters and is located near Great Lakes shorelines, but fails to state that a leak or rupture along this portion could still result in an oil spill in Lakes Michigan-Huron and the Straits of Mackinac. This is emphasized in Task X. U.S. Coast Guard (USCG) personnel and emergency managers both pointed to the stretch of the pipeline along U.S. Highway 2 near Lake Michigan’s northern shore as their worst-case scenario, citing a combination of less robust technology such as pipeline wall thickness and monitoring equipment, as well as higher vulnerability to an errant strike and potential access problems for containment and cleanup equipment, as well as difficult terrain and environment for cleanup activities. (p. 33)
- When making the comparison between the 2010 spill from Enbridge’s Line 6B into the Kalamazoo River and a spill in the Straits, it is important to highlight the difference between spills in a riverine ecosystem versus an open water system. Riverine environments by their nature often allow for easier and greater containment and recovery of oil than open water spills. Unlike in open water or the Straits of Mackinac, currents in a river are generally directed downstream. This greater predictability of river currents makes it easier to forecast which way the oil will move. (p. 33)

- The tasks and scenarios are listed in Table 1. but are not provided or noted prior in the text. Tasks need to be explained or laid out in the beginning of the introduction so the table is understandable. (p. 35)

**Task A: Identifying and analyzing the duration and magnitude of a “worst-case” spill or release of oil or other product from the Straits Pipelines into the environment**

- Coating gaps were confirmed at more than three locations. Three locations were identified as a result of the diver inspections conducted at anchor locations. However, the biota investigation, conducted as part of the Consent Decree, identified eight additional bare spots. These coating gaps need to be acknowledged in the report. (p. 46)
- The draft report acknowledges scenarios where loss of containment is not detected by Computational Pipeline Monitoring (CPM) or a detected leak is ignored due to human error, leading to a longer than expected detection time. However, the report fails to account for these plausible scenarios in identifying the worst-case release. The total expected decision and isolation times of 3.5 minutes, if the decision to shut down is made immediately, and 13.5 minutes, allowing for the full allotted decision-making time, should be modified to account for such feasible and likely situations. (p. 49)
- The automatic valves on either sides of the Straits will only close in the event of a rupture, where there is a drop in pressure significant enough to trigger the closure. The valve on the west line automatically closes if pressure levels fall below 65 psi and the valve on the east line automatically closes if pressure drops below 45 psi. A leak would not drop pressure below this threshold to trigger the automatic closure. (p. 49)
- Tiers 4 and 5 only account for the two hour response time for a manual valve closure. The initial detection time is not included, which would be 10 minutes **IF** Enbridge procedures were properly followed and not subject to human error. In addition, based upon history of Enbridge incidents as well as other oil pipeline spills, it is not necessarily reasonable to expect that a large spill would be isolated within a two-hour window. (p. 52)

**Task B: Analyzing the likely environmental fate and transport of oil or other products released from the Straits Pipeline under a worst-case scenario**

- Correct the formal title of the owner and operator of Line 5. In legal documents with state and federal governments, including the 2016 Consent Decree and the November 2017 Agreement, the owner of Line 5 is referred to “Enbridge Energy, Limited Partnership.” (p. 62)
- In the oil dispersal simulations, particles were released on the water surface owing to specific gravities that are less than that of water. However, we have little, if any at all, science on how this particular product behaves in a freshwater environment in the event of a spill. The National Academies released a report, “Spills of Diluted Bitumen from Pipelines: A Comparative Study of Environmental Fate, Effects, and Response,” that concludes that bitumen, if spilled, has unique properties that affect its behavior in the environment. What we do not know is if weathering of the

synthetic crude would be similar to weathering of diluted bitumen and if it would also generate a residue similar to the initial bitumen that may be more likely to submerge. (p. 67)

- The light synthetic commodities transported through Line 5 generally have a lower mass percentage of BTEX compounds than the other sweet or sour commodities. It would be more prudent to estimate the emissions of BTEX compounds based upon the other commodities to represent a true worst-case scenario. (p. 72)
- It is important to mention that once all the lighter compounds have evaporated, some oils can be close to the density of water. Additionally, when floating, semi submerged or dispersed oil comes into contact with suspended sediment, the sediment can bind to it causing the oil to sink. (p.82)

### **Task C: Analyzing how long it takes to contain and clean up the worst-case release**

- The Northern Michigan Area Contingency Plan was updated in 2017. The most recent version can be accessed at <https://homeport.uscg.mil/Lists/Content/Attachments/20682/NMACP.pdf>. (p. 89, 96)
- The report mentions that the throughput efficiency of the Current Buster equipment was high in calm seas, and is approximately 80% in chop up to 1 ft., when towed at lower speeds. It would also be helpful to include when the Current Buster is no longer efficient or cannot be operated. (p.91)
- In Table C2, in the category “Description and limitation,” “limitation” needs to be plural. (p. 94)
- Table C2 was meant to provide the description and limitations for equipment used for oil containment and recovery on shorelines. However, the table only includes a descriptions of the strategies. Limitations of the strategies were not included and should be. (p.94)
- Additional documents regarding emergency response in the Straits of Mackinac should be reviewed by the team. Enbridge’s Straits of Mackinac Tactical Response Plan and the Straits of Mackinac Emergency Response Self-Assessment would have more information specific to the Straits and could provide essential information pertinent to the analysis.
- Significant effort has gone into exploring the use of in-situ burn (ISB) technology to enhance preparedness for pollution incidents on the waters of Northern Michigan. ISB is the intentional burning of floating oil as a method to remove large amounts of oil from the water’s surface. The workgroup consisted of Area Committee members, including the U.S. Coast Guard, Environmental Protection Agency, National Oceanic and Atmospheric Administration, Michigan Department of Health and Human Services, U.S. Fish and Wildlife Service, Tribal sovereign nations, Michigan Department of Environmental Quality, and others. To establish a framework for the application of ISB on the Great Lakes, the workgroup reviewed hundreds of pieces of research publications and collaborated with research entities and academia including the Coast Guard Research and Development Center. The workgroup also studied information about ISB use in Alaska to gain best practices for utilization in severe cold weather

environments. The group's efforts culminated in a set of guidelines to request approval for use of ISB on the waters of the Great Lakes in Northern Michigan. In August 2017, U.S. Coast Guard, Sector Sault Sainte Marie, in partnership with member agencies from federal, state, local and tribal stakeholders, held a widely attended environmental workshop in Mackinaw City, Michigan, to determine the feasibility of using ISB as a response tactic in addition to mechanical recovery of an oil spill in the Straits of Mackinac. The Area Committee and Regional Response Team 5 (RRT 5) members discussed the risk versus reward of ISB, operational parameters necessary to conduct ISB, and public outreach. This workshop was the first of its kind in RRT 5 to evaluate the use of an alternative technology on the Great Lakes. (p. 97)

- Can the recovery rates provided by Enbridge Energy be verified by an independent third party? The rates provided seem extremely optimistic and unrealistic. (p.105/106)
- Unfortunately, not all incidents are discovered immediately and not all incidents are reported immediately. In fact, only certain incidents are reportable under current law. Therefore, not all entities, including Mackinac county emergency office, USCG Sector Sault Ste Marie and other state offices will be notified within minutes of an incident. (p.107)
- Were the Straits weather conditions taken into consideration for time estimates for deployment and staging of booms? Adverse weather conditions in the Straits region can hinder, if not prevent, deployment of boom. (p. 107)
- Two different recovery rates are provided for the response equipment available at the Straits, including the Current Buster II, Current Buster IV and Lamor bucket recovery system. One is estimated using the Genwest Estimated Recovery Systems Potential calculator and the other with no explanation (Ex. Current Buster II based on the Estimated Recovery Systems Potentials calculator is 1,551 US gallons/hr. or 36.9 bbl./hr. versus other is 3,780 gallons/hr. or 90 bbl./hr.) One recovery rate should be provided or provide an explanation to clarify the difference. (p.108)
- Note the time unit in Figures C6 and C7. (p.112/113)
- Include the original volume discharged in Table C6. (p. 113)

#### **Task D. Analyzing the short and long-term public health and safety impacts**

- There are federally recognized Indian Tribes that are not included in the populations at risk. Emmet County is home to the Little Traverse Bay Bands of Odawa Indians and Hannahville Indian Community is located in Menominee County. Based on the fate and transport simulations, both of these Tribes could be impacted by an oil spill in the Straits of Mackinac. (p. 126)
- McLaren Northern Michigan has a campus in Cheboygan, which is located directly in the affected region on the southern side of the Mackinac Bridge. (p. 128)
- Michigan Water Quality Criteria should be used rather than Oregon Water Quality Criteria or provide an explanation of why Michigan's criteria is not being used. (p. 131)
- Table D2. is missing the carcinogenic classification for both Carbon monoxide and Carbon dioxide. (p.132)

- It would be helpful to make Table D4 easier for public consumption. I would suggest color coding or some way to signify which ones are acceptable/negligible risks versus serious harm.
- Emmet County has only one “t.” (p. 157)
- Make clear that the use of dispersants or other oil emulsifiers is not pre-approved anywhere in the Great Lakes. (p. 161)

**Task E. Analyzing the short and long-term ecological impacts**

- Michigan’s Water Quality Standards should be used, if possible. If not, a justification should be provided explaining why not. (p. 183)
- According to the Great Lakes Coastal Wetland Consortium, Michigan has approximately 275,748 acres of coastal wetlands. This does not represent 73% of all coastal wetlands in the Great Lakes. (p. 194)
- In the listing of rare or endangered species located within the coastal dunes, the “t” in Lake Huron tansy and the “g” in Houghton’s goldenrod do not need to be capitalized. (p. 194)
- Third full sentence, there is a typo with the word “observed.” (p. 197)
- Dreissenids would include zebra and quagga mussels, not brown mussels. (p. 198)

**Task F: Analyzing potential measures to restore the affected resources and mitigate adverse impacts upon ecological and cultural resources**

- It would be helpful to explain the Natural Resource Damage Assessment (NDRA) process as part of the Introduction as well as defining “trustee” under NRDA. (p. 236)
- It should be noted that restoring wetlands does not produce the same functions and values as the original, natural wetland. Despite our best attempts, we cannot create nature better than nature itself. (p. 245)
- The approach for restoring wetlands is missing information regarding how to properly address threatened and endangered species. (p. 245)
- Under Macrobenthos, “straits” should be capitalized. (p. 253)

**Task G: Estimating the amount of natural resource and other economic damages, public and private, that would result from a worst-case release**

- It is unwise to rely on the Dynamic Risk Report. That report was highly criticized by all stakeholders because it was riddled with flawed methodologies and assumptions, had extensive data gaps, and ultimately failed to meet the scope and statement of work. (p. 310)
- According to the report “Economic Impacts of Maritime Shipping in the Great Lakes – St. Lawrence Region,” released July 2018, cargo moved on the Great Lakes-St. Lawrence Seaway System totaled 143.5 million metric tons (158.3 million short tons) valued at \$15.2 billion. This commerce supported 237,868 jobs and \$35 billion in economic activity. (p. 307)
- Line 5 is 645 miles and transports synthetic crude, in addition to light crude. (p 308)

- The team should review and amend the section Effects on Michigan’s Energy Supply, as appropriate, based upon a recent report “Assessment of alternative methods of supplying propane to Michigan in the absence of Line 5,” prepared by London Economics International LLC. (p. 308)

**Task H: Estimating the governmental costs that would be incurred as a result of a worst-case release**

- The Northern Michigan Area Contingency Plan was updated in 2017. The most recent version can be accessed at <https://homeport.uscg.mil/Lists/Content/Attachments/20682/NMACP.pdf>. (p. 335)
- This section needs a concluding summary, similar to the other Tasks. (p. 348)

**Summary of Costs**

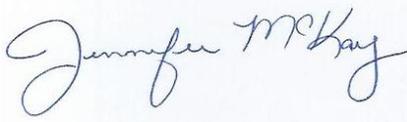
- A more detailed and comprehensive summary should be compiled. The summation should include the conclusions or results from each of Tasks providing the overall consequences of a worst-case scenario spill so the State of Michigan can establish the amount of the required financial assurance and to help guide decisions about the future of the Pipeline. (p.395)

**Conclusion**

We need a thorough, comprehensive and complete Risk Analysis to provide vital information to inform future decisions on Line 5. The Draft Report provides a solid foundation for this. The Watershed Council again thanks Michigan Technological University, notably Dr. Meadow and his team of researchers, for the time and expertise put forth in developing the Draft Risk Analysis Report. We urge you to give careful consideration to the comments provided and make the suggested changes to improve the final report.

Thank you for the opportunity to provide comments. If you have questions regarding these comments, please do not hesitate to contact me at 231-347-1181 or by email at [jenniferm@watershedcouncil.org](mailto:jenniferm@watershedcouncil.org).

Sincerely,



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