# Line 5 Straits of Mackinac Summary

When Michigan was granted statehood on January 26, 1837, Michigan also acquired ownership of the Great Lakes' bottomlands under the equal footing doctrine.[1] However before Michigan could become a state, the United States first had to acquire title from us (Ottawa and Chippewa bands) because Anglo-American law acknowledged that we owned legal title as the aboriginal occupants of the territory we occupied. But when we agreed to cede legal title to the United States in the March 28, 1836 Treaty of Washington ("1836 Treaty", 7 Stat. 491), we reserved fishing, hunting and gathering rights. Therefore, Michigan's ownership of both the lands and Great Lakes waters within the cession area of the 1836 Treaty was burdened with preexisting trust obligations with respect to our treaty-reserved resources.

First, the public trust doctrine imposes a duty (trust responsibility) upon Michigan to protect the public trust in the resources dependent upon the quality of the Great Lakes water.[2] In addition, Art. IV, § 52 of Michigan's Constitution says "conservation…of the natural resources of the state are hereby declared to be of paramount public concern…" and then mandates the legislature to "provide for the protection of the air, water and other natural resources from pollution, impairment and destruction."[3]

---

[1] The State of Michigan acquired title to these bottomlands in its sovereign capacity upon admission to the Union and holds them in trust for the benefit of the people of Michigan. *Illinois Central Railroad Co. v. Illinois*, 146 U.S. 387, 434-35 (1892); *Nedtweg v. Wallace*, 237 Mich. 14 (1927).

[2] *See* http://flowforwater.org/public-trust-solutions/what-is-public-trust/ and http://www.michigan.gov/deq/0,1607,7-135-3313_3677_3702-10865--,00.html

[3] *See* Michigan Environmental Protection Act (MEPA), MCL 324.1701, *et seq.*

Second, the "treaty rights"[4] reserved by the tribal signatories to the 1836 Treaty impose a separate duty (trust responsibility) upon the state, its agencies, officers and employees to protect the fishery resources and habitat in the portions of Lakes Huron, Michigan and Superior within the 1836 Treaty cession. The Straits of Mackinac is both historically significant[5] and also the most productive modern-day commercial fishing location for "treaty fishers."[6]

The stretch of the Line 5 pipeline extending through the Straits of Mackinac is the most dangerous pipeline in America. It is not possible to contain an underwater oil spill within the Straits of Mackinac.[7] A "worse case" scenario would deprive the 1836 Treaty Tribes of their treaty-reserved fishing rights for decades into the future. In addition to immediately destroying the Tribes' property rights in the fishery resources,[8] a cultural way of life would be impeded.

Because there is an imminent risk of harm[9] to the Tribes' treaty-reserved fishing rights, Michigan is duty-bound to exercise authority under state law to protect the fishery resources that would be impacted by a Line 5 catastrophe. But if the State of Michigan fails to protect our treaty rights, then once again we will seek recourse from the courts.

---

[4] Off-reservation fishing rights in the Great Lakes including the Straits of Mackinac reserved by the Tribes in the 1836 Treaty were confirmed by the federal courts in the *United States v. Michigan* litigation, *see* 471 F. Supp. 192 (W.D. Mich. 1979), *aff'd.* 653 F.2d 277 (6th Cir. 1981), *cert. denied*, 454 U.S. 1124 (1981). The 1836 Treaty Tribes also reserved usufructuary fishing, hunting, trapping and gathering rights in inland portions of the cession that were confirmed by the November 2, 2007 Consent Decree (Dkt. 1799 in W.D. Mich. Case No. 2:73-CV-26).

[5] *See* Attachment A, "references to Straits in Fox decision's findings of facts."

[6] *See* Attachment B, "Declaration of Mark P. Ebener" (ITFAP).

[7] *See* Attachment C, (contingency plan shortcomings).

[8] The 1836 Treaty Tribes' treaty-reserved fishing rights in the Great Lakes' fishery resources (including Straits of Mackinac) "are property rights protected by the United States Constitution." *Grand Traverse Band of Ottawa and Chippewa Indians v. Director, Michigan Department of Natural Resources*, 971 F. Supp. 282, 288 (W. D. Mich. 1995), *aff'd.* 141 F.3d 635 (6th Cir. 1998), *cert. denied*, 525 U.S.1040 (1998).

[9] *See* Attachment D, "Statement of Stanley (“Skip”) Pruss" (former Chief Energy Officer for the State of Michigan, former director of the Michigan Department of Energy, Labor and Economic Growth, former deputy director of the Michigan Department of Environmental Quality, and former Michigan Assistant Attorney General).

# Attachment A

**references to Straits in Fox decision's findings of facts — 471 F. Supp. 192, at**

p. 220: The Ottawas too advanced westward and settled in the lower peninsula of Michigan with concentrations near the Straits of Mackinac. (Tr. 94.)

p. 221: Indians were traders, of course, even before European contact. (Tr. 106.) As previously stated, the word "Ottawa" means "trader." One of the principal trade centers in the treaty area was at the Straits of Mackinac. (Tr. 106.)

p. 222: Throughout the period from first contact to the 1830's, missionaries, explorers, traders, and military and governmental officials wrote of the Indian gill net fishery in the Great Lakes and of its importance to the Indian inhabitants. For example, the Frenchman Joutel wrote this detailed description of Indian gill netting at the Straits of Mackinac in 1687 (Tr. 784-85):

They are very skillful at fishing and the fishing is very good in those parts. There are fish of various kinds which they catch with nets, made with a very good mesh; and, although they only make them of ordinary sewing thread, they will nevertheless stop fish weighing over ten pounds. They go as far as a league out into the lake to spread their nets, and to enable them to find them again, they leave marks, namely, certain pieces of cedar wood which they call "aquantiquants," which serve the same purpose as buoys or anchors. They have nets as long as 200 fathoms and about 2 feet deep. At the lower part of those nets they fasten stones to make them go to the bottom, and on the upper part they put pieces of cedar wood which the French people who were then at this place called floats. Such nets are spread in the water, like snares among crops, the fish being caught as they pass, like partridge and quails in snares. The nets are sometimes spread in a depth of more than 30 fathoms, and when bad weather comes, they are in danger of being lost.

p. 224: Subsistence fishing continued to be tremendously important to the Indians of the treaty area in the 1830's. The introduction of the market economy, the fur trade and the dependence of the Indians on trade goods did not alter the subsistence dependence of the Indians on the fishery; to the contrary, as Fitting reported in his "Patterns of Acculturation at the Straits of Mackinac," those factors actually Increased and amplified the importance of fishing. (Tr. 766-67.)

p.231: In Articles Second and Third of the Treaty of 1836 fourteen reservations in common were retained in the following locations: Little Traverse Bay, Grand Traverse Bay, on or north of the Pere Marquette River, on the Cheboygan River, on Thunder Bay, on the north shore of Lake Michigan between Point-au-Barbe and the Mille Coquin River, the Beaver Islands, Round Island in the Straits of Mackinac, the Les Cheneaux Islands and land in the Upper Peninsula adjacent thereto, Sugar Island, at the Little Rapids of the St. Mary's River, a large tract on Whitefish Bay of Lake Superior and westward in the Upper Peninsula, Grand Island and at the head of Bay Noc.

p. 233: Two of the nine tracts of land reserved by the Indians in Article Third explicitly include fishing grounds and small islands adjacent thereto the reserve on Whitefish Bay and two tracts of land between Point-au-Barbe and the Mille Coquin River on the north shore of Lake Michigan near the Straits of Mackinac. Dr. Tanner testified that this explicit reference to fishing grounds underscored the importance of these fishing areas to the Indians. (Tr. 237.)

# Attachment B

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN

| | |
|---|---|
| NATIONAL WILDLIFE FEDERATION,<br><br>Plaintiff,<br><br>v.<br><br>ADMINISTRATOR OF THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION,<br><br>Defendant. | Case No. 2:16-cv-11727<br><br>Hon. Mark A. Goldsmith, District Judge<br><br>Hon. R. Steven Whalen, Magistrate Judge |

**Declaration of Mark P. Ebener**

Mark P. Ebener, being duly sworn, states that he is competent to testify to the matters stated and that the following statements are made on personal knowledge regarding facts that would be admissible in evidence:

1. Declarant states that he is employed as the Fishery Assessment Biologist for the Inter-Tribal Fisheries and Assessment Program ("ITFAP") of the Chippewa Ottawa Resource Authority ("CORA"); that he has a bachelor of science (1977) and masters degree (1980) in Fisheries Management from the University of Wisconsin-Stevens Point; and that he has been employed by Native American Inter-Tribal Natural Resource Agencies as a Great Lakes Fishery Biologist for 35 years. (The details are on the attached document which is incorporated by reference.)

2. Attached to this notarized document is a document also titled "Declaration of Mark P. Ebener". Declarant attests that all of the statements in the attached document are true, that they are based on his personal knowledge, and that he is competent to testify to those stated facts and conclusions.

3. Also attached to this notarized document is another document titled "Fish harvest reported by CORA commercial fishers, summarized by grid, 2005-2015." This was prepared by ITFAP based on records maintained by ITFAP and CORA; Declarant attests that the harvest information depicted is accurate based on records maintained by ITFAP and CORA.

Mark P. Ebener

STATE OF MICHIGAN

COUNTY OF Chippewa

Signed and sworn before me in Chippewa County on July 14, 2016 by Mark P. Ebener.

, Notary Public

Chippewa County, Michigan

Commission Expires: Sep. 26, 2021

Acting in Chippewa County, Michigan

MATTHEW KAGARISE
NOTARY PUBLIC, STATE OF MI
COUNTY OF CHIPPEWA
MY COMMISSION EXPIRES Sep 26, 2021
ACTING IN COUNTY OF Chippewa

**Declaration of Mark P. Ebener**

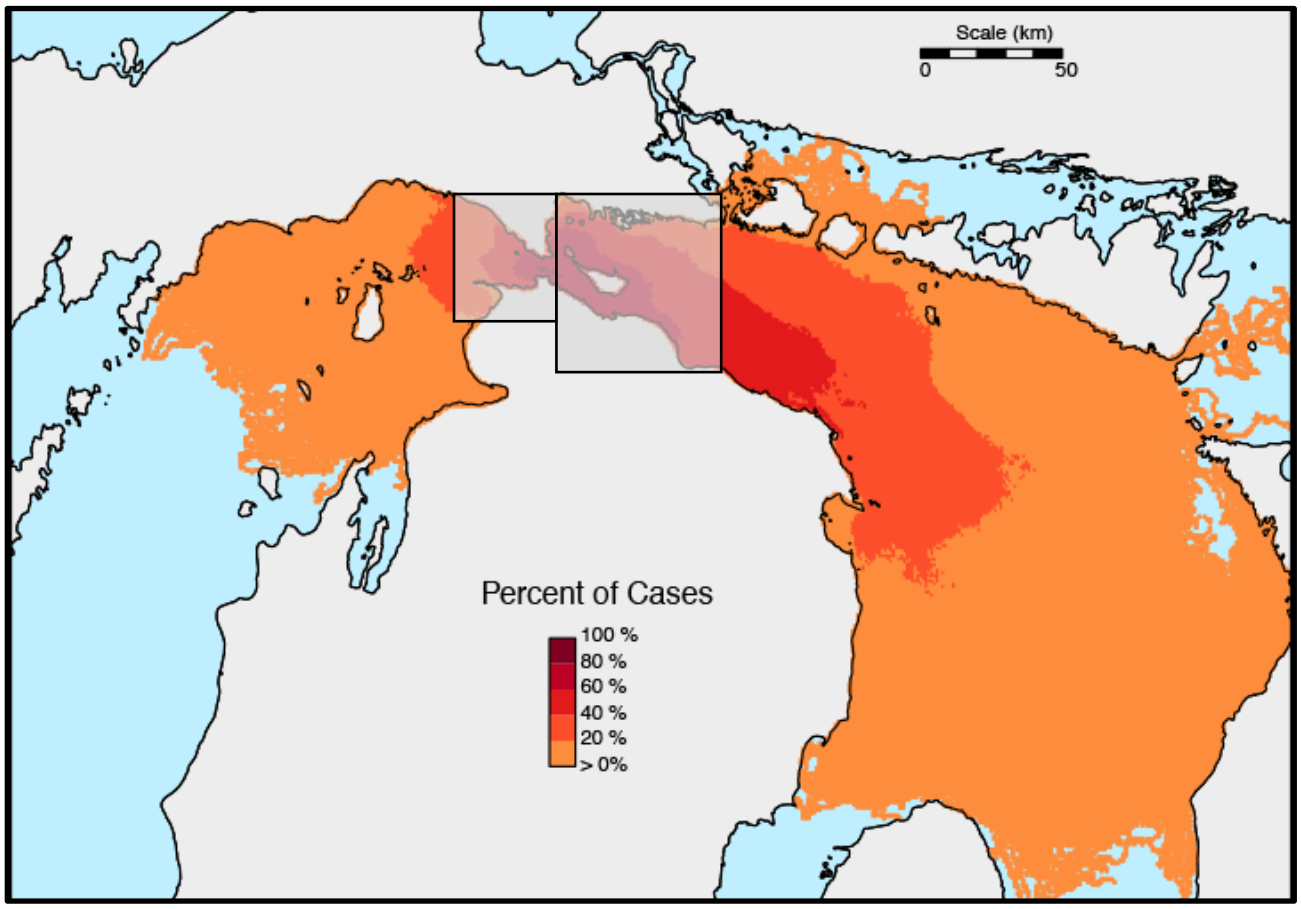
I am employed as the Fishery Assessment Biologist for the Inter-Tribal Fisheries and Assessment Program (ITFAP) of the Chippewa Ottawa Resource Authority, but since the Sault Ste. Marie Tribe of Chippewa Indians handles the financial contract for my organization, I am technically an employee of the Sault Ste. Marie Tribe of Chippewa Indians. I have a Bachelor of Science (1977) and Master's degree (1980) in Fisheries Management from the University of Wisconsin-Stevens Point. I was employed as Assessment Biologist for the Inter-Tribal Fisheries Program from 1981 to 1984, then from part of 1984 to 1990 I was employed as Great Lakes Biologist for the Great Lakes Indian Fish and Wildlife Commission in Odanah, Wisconsin. I returned to my current position as Assessment Biologist in November 1990. Thus, I have been employed by Native American Inter-Tribal Natural Resource Agencies as a Great Lakes Fishery Biologist for 35 years.

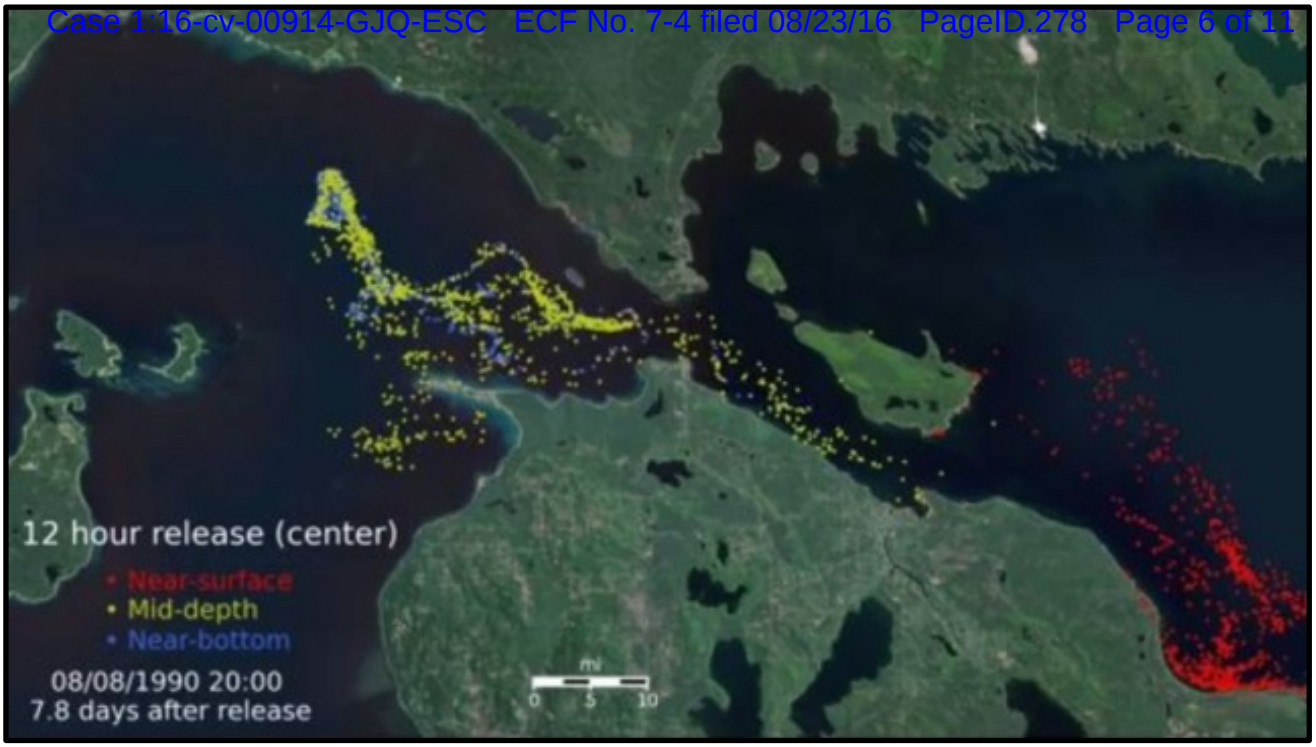
I have conducted numerous research and assessment projects on Great Lakes fishes during my 35 years as a professional fishery biologist both independently for the Chippewa Ottawa Resource Authority and cooperatively with researchers from other state, federal, university, and tribal organizations. The vast majority of my work has focused on lake whitefish and lake trout, but I have also studied Great Lakes walleye, cisco, yellow perch, and Chinook salmon. I have authored or co-authored over 25 scientific papers based on data our staff has collected, or as part of collaborative studies with other researchers.

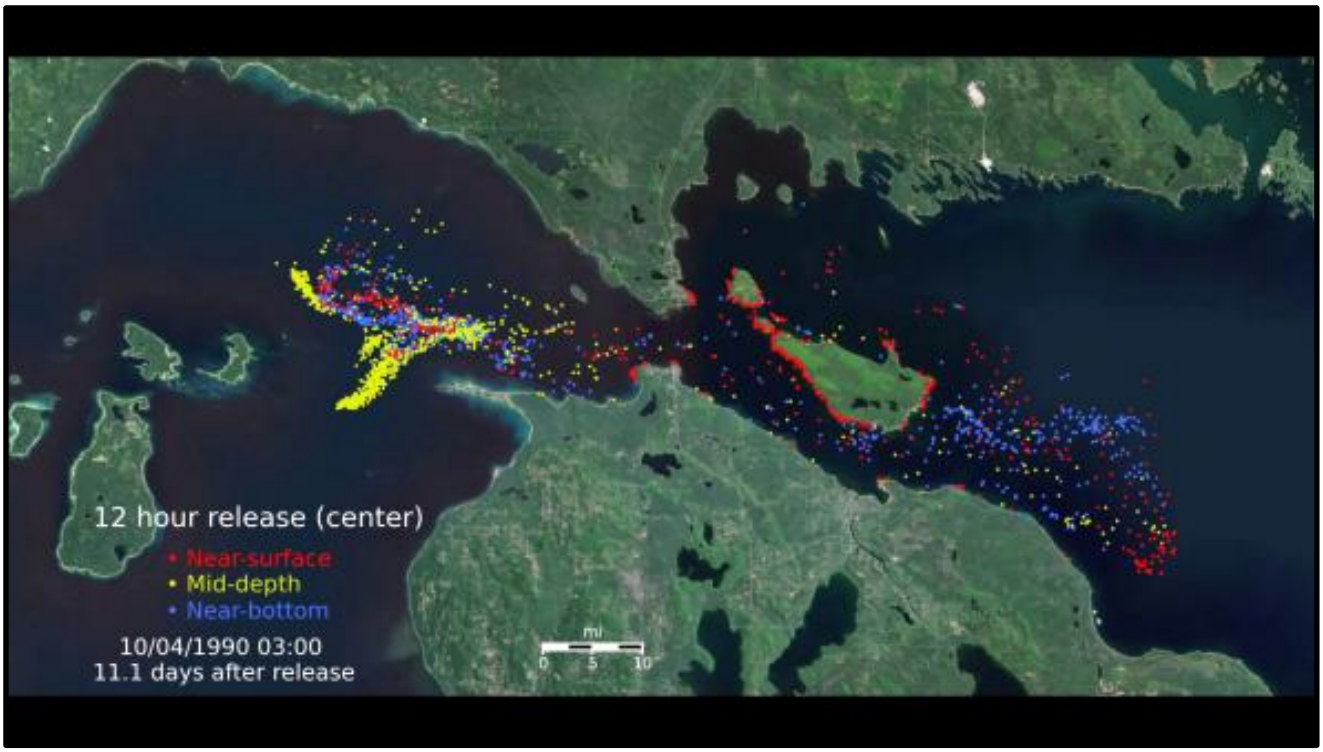
My primary responsibility at ITFAP is to coordinate collection of information to describe the status of fish species important to the CORA fishery. I also serve on the Modeling Subcommittee for the 1836 Ceded waters, whose primary responsibility is to estimate safe harvest limits of whitefish and lake trout in each of the management units in the ceded waters. I also serve on two international technical committees whose responsibilities are to coordinate research and assessment on fish populations and their habitat, and to advise state, federal, and tribal governments on management of fish and their habitat in Lakes Superior, Huron, and Michigan. I was chairman of the Lake Superior Technical Committee for 14 years and chairman of the Lake Huron Technical Committee for five years. I also served on the Lake Michigan Technical Committee.

This is my assessment of the potential effects of an oil spill from Line 5 on the fishery resources in the 1836 Treaty-ceded waters. Before I get into specifics, I will point out that the commercial fisheries and some fish populations in the Prince William Sound area of Alaska have not recovered from the oil spill of the Exxon Valdez in 1989. I did a simple Google search and found at least five articles of how all the oil from the Exxon Valdez has not been cleaned up in Prince William Sound as of 2014 and these articles document how some fisheries and the local economy have also not recovered from the spill. I suspect we would see the same effect here in the 1836 Treaty-ceded waters of Lakes Huron and Michigan as a consequence of a leak from Line 5. It would be naïve to believe otherwise.

My evaluation of the effects on fish populations and their habitat because of an oil spill from Line 5 is based on my experience as a fishery biologist working for Native American Tribes in the upper Great Lakes of North America; specifically lakes Superior, Huron, and Michigan. My evaluation is also based on some of the results from University of Michigan computer simulations that estimated the spatial and bathymetric extent of an oil spill from Line 5 into northern lakes Michigan and Huron. These simulations were based on a water flow model and current patterns in the Straits of Mackinac for a release of oil from Line 5 that lasted for 8 to 12 hours. Based on these simulations, I am defining the affected areas as all waters of northern Lake Michigan east of a line drawn south from Epoufette, Michigan to Ile aux Galet and all waters of northern Lake Huron west of a line drawn south from Detour, Michigan to Forty Mile Point. I am defining these areas as Northern Lake Michigan and Northern Lake Huron.





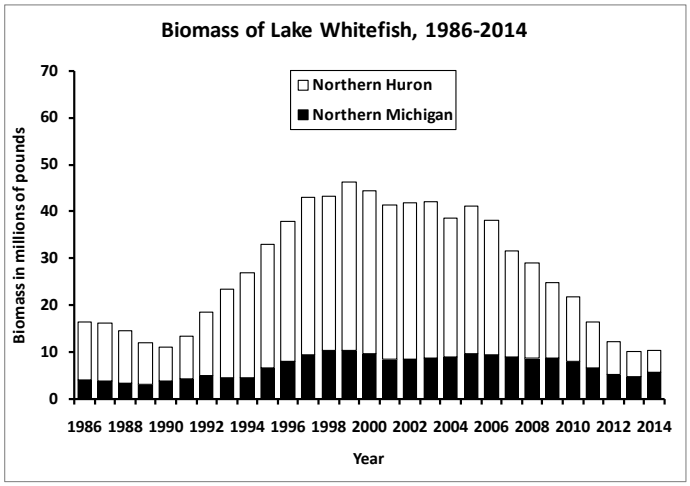




Lake whitefish (*Coregonus clupeaformis*) is the primary target of the CORA commercial fishery and the species made up 79% by weight of the total commercial harvest from the 1836 ceded waters during 2006-2015 based on CORA commercial fishery statistics summarized by our staff. Lake whitefish sustain themselves solely through natural reproduction, but spawning does not take place throughout Northern Lake Michigan and Northern Lake Huron. Rather lake whitefish spawning is concentrated in shallow rock and gravel areas adjacent to the shorelines. As such, lake whitefish spawning sites would be highly vulnerable to an oil spill. In the

Northern Lake Michigan area specific spawning locations include the areas around Green Island, Pt. aux Chenes, and Epoufette along the southern shore of the Upper Peninsula of Michigan and along the shoreline of the northern Lower Peninsula of Michigan from Cecil Bay and Big Stone Bay west to Waugoshance Point and then south through Sturgeon Bay. In Northern Lake Huron lake whitefish spawn along nearly the entire southern Upper Peninsula shoreline from Detour west to just north of St. Ignace wherever there are small rocky and gravel areas. Lake whitefish also spawn in large aggregations from Cheboygan, Michigan southeast along the northeastern portion of the Lower Peninsula of Michigan to 40 Mile Point; again wherever rocky and gravel areas are found along the shoreline.

Nearly the entire area of Northern Lake Michigan and Northern Lake Huron is lake whitefish habitat that is used by all life stages. Lake whitefish eggs are laid on shallow rocky/gravel areas in water less than 10 ft. deep typically from late October through early December where they incubate throughout the winter. Young lake whitefish hatch just after ice out from mid to late April through mid to late May. These young lake whitefish occupy very shallow sandy areas less than 5 ft. deep adjacent to the spawning shoals through roughly early July. Thereafter, the young lake whitefish move to deeper water. Juvenile and adult lake whitefish live throughout Northern Michigan and Northern Huron occupying waters of typically 30 to 200 ft. deep.

Northern Lake Michigan and Northern Lake Huron are very productive areas for lake whitefish with biomass levels typically exceeding 10 million pounds annually. Statistical-catch-at age estimates of the total biomass of lake whitefish age-4 and older in Northern Lake Michigan and Northern Lake Huron ranged from 10 to 47 million pounds annually and averaged 28 million pounds during 1986-2014. The annual CORA commercial harvest from Northern Lake Michigan and Northern Lake Huron ranged from 1 to 4 million pounds and averaged 3 million pounds during 1986-2014. Lake whitefish harvests from Northern Lake Michigan and Northern Lake Huron made up 37% to 76% of the total annual CORA commercial lake whitefish harvest from the 1836 ceded waters and averaged 58% during 1986-2014. Thus, Northern Lake Michigan and Northern Lake Huron are very important fishing grounds for the CORA fishery and the habitat in these areas produces more than ten millions of pounds of lake whitefish annually for harvest by the tribes.




I believe declines in biomass of lake whitefish due to an oil spill will have a huge negative effect on the CORA commercial fishery for over a decade. Egg incubation and larval abundance in nearshore habitat will be most affected by an oil spill and these habitats will be

rendered basically useless for many years. Juvenile and adult lake whitefish may be less directly affected by an oil spill than eggs and larvae, but their food resources will be affected, thus I suspect that growth of these fish will be negatively affected by the spill. Juvenile and adult lake whitefish consume a broad array of indigenous food items such as zooplankton, clams, snails, darters, larval and adult mayflies, caddis flies, and midges, Mysis, Diporeia, and ostracods. Juvenile and adult lake whitefish also consume invasive species such as dreissenid mussels, Bythotrephes, and small rainbow smelt and alewife. Most of the indigenous prey of lake whitefish live on the lake bottom (they are benthic) and as such will be negatively affected by an oil spill. Reductions in abundance of benthic prey will most certainly reduce food consumption by juvenile and adult lake whitefish and will reduce their growth rates and possibly their body condition. Large reductions in body condition were observed on lake whitefish from Northern Lake Michigan and Northern Lake Huron during the late 1990s and early 2000s after arrival of dreissenid mussels to the Great Lakes, and this reduction in body condition reduced marketability of lake whitefish by the CORA commercial fishery. I expect a repeat of this process if an oil spill occurs.

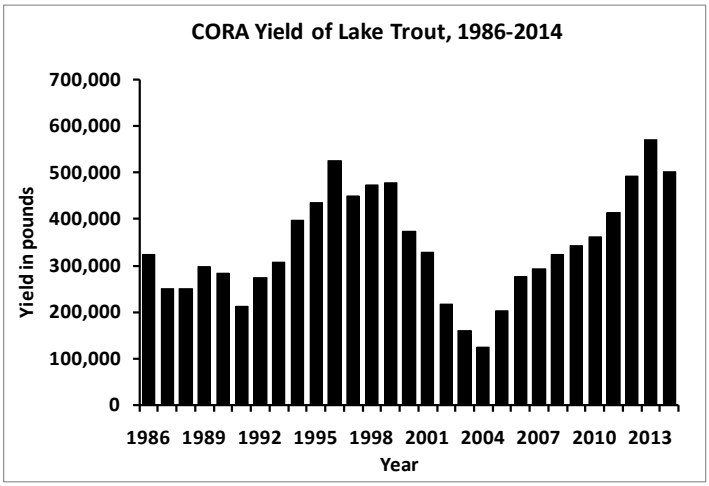
Lake trout (*Salvelinus namaycush*) is the second most commonly harvested fish species by the CORA fishery and the species made up 15% by weight of the total CORA harvest during 2006-2015 based on fishery statistics summarized by our staff. Lake trout populations are sustained through both natural reproduction and stocking of hatchery-reared fish. Lake trout are indigenous to the Great Lakes and historically they were the top fish predator in the Great Lakes prior to becoming extirpated in all but Lake Superior by 1960. Since then, federal, state, provincial, and tribal governments have being trying to promote rehabilitation and recovery of lake trout population throughout the Great Lakes by controlling fishery harvests, stocking hatchery-reared fish, and controlling populations of the invasive sea lamprey. Through 2015, lake trout populations have fully recovered in Lake Superior, they are becoming self-sustaining in the main basin of Lake Huron, and they are just now starting to sustain themselves in Lake Michigan. Northern Lake Michigan populations of lake trout are composed of 94% hatchery-reared fish, whereas Northern Lake Huron populations are composed of 35% naturally produced fish based on our monitoring of the populations in both lakes during 2010-2015. The 2000 Consent Decree negotiated between CORA member tribes and the State of Michigan and U.S. federal government was designed to promote recovery of lake trout populations in the 1836 ceded waters, so much of the current management focuses on protecting lake trout through refuges, harvest limits, reductions in gill net effort, lake trout stocking, and sea lamprey control. An oil spill from Line 5 would have direct effects on agreements contained in the Consent Decree and would create a huge setback in the process to rehabilitate lake trout populations.

Lake trout spawn primarily on offshore reefs in Northern Lake Michigan and Northern Lake Huron, but they also spawn to a lesser extent in shallow rocky areas along the shoreline of both areas. In Northern Lake Huron lake trout currently spawn in offshore areas such as the Martin, Pomery, and Tobin reef complex near Cedarville, Michigan, and Spectacle and Raynolds reefs which are located between Detour and St. Ignace anywhere from 5 to 10 miles from shore. Lake trout also spawn along the shoreline near Detour, Hammond Bay, and Bois Blanc

Island. Historically, lake trout spawned on Graham and Majors Shoals, which are both located directly in the Straits of Mackinac just east of the Mackinac Bridge, but I am unsure of the current status of lake trout spawning on either of those shoals. In Northern Lake Michigan lake trout spawn along the shoreline of the northwest portion of the Lower Peninsula from Cecil Bay to Waugoshance Point and south through Sturgeon Bay.

Nearly the entire area of Northern Lake Michigan and Northern Lake Huron is lake trout habitat that is used by all life stages. Lake trout eggs are laid on rocky substrates in water of 5 to 30 ft. deep typically from mid-October through mid-November where they incubate throughout the winter. Young lake trout hatch after ice out from mid to late April through mid to late May. These young lake trout occupy rocky areas on the spawning shoals, but as they age through their first summer they move off the rocky spawning shoals to deeper, more soft bottomed areas. Juvenile and adult lake trout live throughout Northern Lake Michigan and Northern Lake Huron occupying waters of typically 30 to 350 ft. deep.

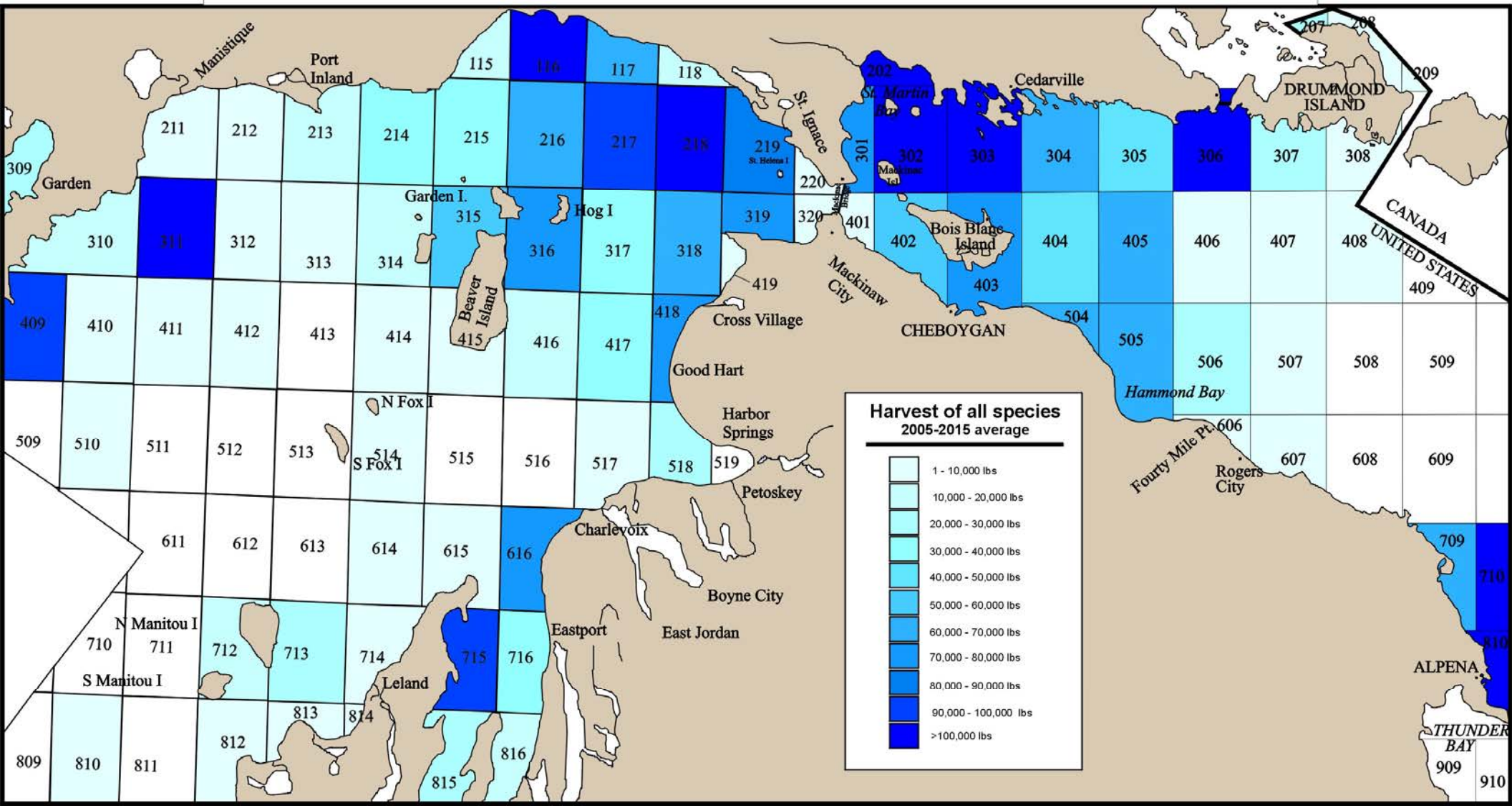
As with lake whitefish, both Northern Lake Michigan and Northern Lake Huron are productive areas for lake trout. The CORA commercial harvest of lake trout from both areas combined ranged from 124,000 to 572,000 pounds annually and averaged 343,000 pounds each year during 1986-2014. The annual CORA commercial harvest of lake trout from Northern Lake Michigan and Northern Lake Huron represented 36% to 56% of the total CORA yield of lake trout from the 1836 ceded waters. Since the 2000 Consent Decree the CORA commercial yield of lake trout in Northern Lake Michigan and Northern Lake Huron has been limited to within certain bounds by total allowable catches that are established annually by the parties to the agreement. In Northern Lake Huron the annual CORA total allowable catch has ranged from 69,000 to 414,000 pounds during 2001 to 2015. In Northern Lake Michigan the total allowable catch has been much more constant at 453,000.




Lake trout that spawn along shorelines, particularly in Northern Lake Huron through Hammond Bay, will be severely affected by an oil spill model for Line 5 based on the simulations from the oil spill model. In particular, lake trout spawning in the Cheboygan to Hammond Bay area will most affected because these fish spawn near shore and the spill will cover rocky substrates where eggs are deposited nearshore. Offshore spawning populations of lake trout will be somewhat affected by the oil spill as simulations indicated that oil may be found near the lake bottom at the Raynolds and Spectacle Reef spawning sites.

An oil spill from Line 5 will also affect yellow perch, walleye, and round whitefish (i.e. menominee) populations in Northern Michigan and Northern Huron. These species in the aggregate made up less than 2% of the annual CORA commercial harvest during 1986-2014, but yellow perch and walleye, in particular, are high value species and as such are important to the fishery. The effect of an oil spill from Line 5 on yellow perch, walleye, and menominee will be concentrated in Northern Lake Huron from the Mackinac Bridge through the South Channel to Cheboygan and Hammond Bay. This area contains spawning grounds for all three species, particularly from Cheboygan through Hammond Bay. Yellow perch spawn directly in front of Cheboygan and throughout the South Channel as do menominee. Walleye spawn in the Cheboygan River and inhabit the South Channel through much of the year. Many of the walleye that inhabit the South Channel come from a population that spawns in the Saginaw River, but lives in the Straits of Mackinac for part of the year. Thus a spill from Line 5 will affect much more than fish populations in the Straits.

Fish harvest reported by CORA commercial fishers, summarized by grid, 2005-2015 average.



# Attachment C

**Reasons to Decertify the Enbridge Integrated Contingency Plan for the Superior Region (#866) Response Zone**

## Executive Summary

Prevention of an oil spill is the absolutely best course of action, but Enbridge's best efforts to maintain high operational readiness on an aging pipeline cannot guarantee this. It is critical that a well conceived oil spill response plan be on hand, accompanied by adequate pre-positioning of necessary assets and trained personnel within close proximity of a spill site. This is absolutely necessary to minimize ecological and economic losses and to protect public safety. A careful review of Enbridge's Integrated Contingency Plan for the Superior Region Response Zone and prior After Action Reports from recent Spill Exercises leads to the conclusion that **Enbridge is ill-prepared to contain and clean up an oil spill in the upper Great Lakes including the Straits of Mackinac.** Furthermore, the U.S. Department of Transportation (USDOT), Pipeline and Hazardous Materials Safety Administration (PHMSA) should never have certified the Enbridge Contingency Plan with its inherent shortcomings and oversights. This lack of due diligence needs to be corrected and a moratorium on crude oil shipments through Line 5 needs to be ordered until this situation is remedied.

## Authorities

### Pertinent Federal and State Authorities

In accordance with regulations outlined in 49 CFR 194 (Response Plans for Onshore Pipelines), Enbridge must prove that they have a federally approved contingency plan that identifies adequate resources to contain and clean-up a spill from their facilities. Amendments to these laws were included in Public Law 112-90 entitled "Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011. In addition, certain sections of 33 CFR 311 -Water Pollution Control Act impact PHMSA's authority to approve Enbridge's Contingency Plan for the Superior Region (#866) Response Zone including Line 5.

49 CFR 195 (Transportation of Hazardous Liquids by Pipeline) prescribes safety standards and reporting requirements for pipeline facilities used in the transportation of hazardous liquids or carbon dioxide. It includes requirements for accident and safety-related condition reporting, design requirements, construction, pressure testing, operation and maintenance, high consequence areas, integrity management, pipeline personnel qualifications and corrosion control. An array of reasonable concerns have been noted over the last year by non-industry reviewers that Enbridge's integrity management, corrosion control systems and operations and management of Line 5 are inadequate to prevent a catastrophic release of crude oil into the waters of the Great Lakes.

The State of Michigan is currently conducting a comprehensive review of the risk that continued operations of Line 5 poses to the economy and environment of the region, in addition to the degree of liability compensation that Enbridge currently holds and whether suitable alternatives exist for the transmission of liquid hazardous materials through the line.

These studies are confined to the Straits of Mackinac segment of Line 5, as the State of Michigan has legal oversight based on its 1953 Easement Agreement with Enbridge's predecessor. Our concerns extend beyond this 4.1 mile segment to all of Line 5 where a catastrophic spill will cause irreconcilable damage across northern lakes Michigan and Huron.

**49 U.S.C. §194 - Response Plans for Onshore Pipelines**

This legislation prescribes requirements for pipeline operators to develop oil spill response plans to mitigate substantial harm to the environment by discharging oil into or on any navigable waters of the United States or adjoining shorelines.

This legislation defines the requirement for response plans to explicitly address adverse weather conditions, including ice conditions, temperature ranges, weather-related visibility, significant wave heights and current velocities to insure that an oil spill can be contained and removed and that ecological damages can be remediated. The northern Great Lakes, including the Straits of Mackinac, typically undergoes dramatic weather changes for at least 6 months of every year that can affect the operational readiness of any response plan. Enbridge's failure to adequately address these factors is discussed later in this document.

The Enbridge Contingency Plan states *"Each operator shall submit a statement with its response plan, as required by §§194.107 and 194.113, identifying which line sections in a response zone can be expected to cause significant and substantial harm to the environment in the event of a discharge of oil into or on the navigable waters or adjoining shorelines*[1]*"* and designates that this information is contained in Annexes 1.5, 1.9 and 3.1. Unfortunately, Annexes 1.9 and 3.1 are completely redacted restricting the public's right to know whether Enbridge is compliant with this legal requirement. The Environmental Sensitivity Atlas produced by the U.S. Environmental Protection Agency in reduced spatial detail for use by first responders is the basis of this information and is publically accessible. **Enbridge's redaction of this information is not justifiable.** PHMSA should require that Line 5 be designated as an area of "significant and substantial harm to the environment" in the Contingency Plan.

Section 60109(a) of 49 U.S.C. defines "Imminent Hazard" as the existence of a condition related to pipelines or pipeline operations that present a substantial likelihood that death, serious illness, severe personal injury, or substantial endangerment to health, property, or the environment may occur." Nowhere in Enbridge's Contingency Plan do they recognize the imminent hazard of transportation of hazardous liquids through Line 5.

Part 194 defines "High Volume Areas" as "an area which an oil pipeline having a nominal outside diameter of 20 inches (508 millimeters) or more crosses a major river or other navigable waters, which, because of the velocity of the river, would require a more rapid response in case of a worst case discharge."

[1] Enbridge Integrated Contingency Plan for the Superior Region (#866) Response Zone, Annex 4, p. 3

The Enbridge Contingency Plan indicates that they can respond within 54 hours to a Tier 3 incident.[2] **Any discharge of oil into the Great Lakes should be considered a Tier 3 incident.** This is clearly an unacceptable response time for any major spill into northern Lake Michigan or the Straits of Mackinac, considering the transient times identified in recent University of Michigan oil spill dispersion hydrodynamic modeling**. This condition is a major violation of Part 194.** All response times are now redacted in Enbridge's Version 3 of the subject response plan. One would conclude that this is an attempt to obscure facts about their inability to mobilize equipment and personnel to contain a spill of considerable size into Great Lakes waters. Redaction of information is rampant throughout the Contingency Plan without strong rationale for this level of increased security.

§194 also defines "Maximum Extent Practicable" as *"the limits of available technology and the practical and technical limits on a pipeline operator in planning the response resources required to provide the onwater recovery capability and the shoreline protection and cleanup capability to conduct response activities for a worst case discharge from a pipeline in adverse weather."* This is a troublesome concept which Enbridge can use to justify its failures to pre-position necessary assets near high consequence areas along the route of Line 5, its failures to conduct adequate spill response exercises and its inadequate investment in training for first responders.

§194.7 - Operating restrictions and interim operation authorization - This section states *"(a)* ***An operator of a pipeline for which a response plan is required under §194.101, may not handle, store, or transport oil in that pipeline unless the operator has submitted a response plan meeting the requirements of this part****. (b) An operator must operate its onshore pipeline facilities in accordance with the applicable response plan. (c) The operator of a pipeline line section described in §194.103(c) may continue to operate the pipeline for two years after the date of submission of a response plan, pending approval or disapproval of that plan, only if the operator has submitted the certification required by §194.119(e)."*

When PHMSA decertifies the Enbridge Contingency Plan for Line 5 due to the shortcomings identified in this document, **Enbridge must restrict products shipped by Line 5 to natural gas liquids only** until the material violations of Part 147 are corrected.

**33 U.S.C. §1251 et seq. (1972) - Water Pollution Control Act (Clean Water Act)**

The Clean Water Act (CWA) is very explicit by stating that *"(b)(1) The Congress hereby declares that it is the policy of the United States that there should be no discharges of oil or hazardous substances into or upon the navigable waters of the United States, adjoining shorelines*, …"

The CWA identifies that *"The President shall, in accordance with the National Contingency Plan and any appropriate Area Contingency Plan, ensure effective and immediate removal of a discharge, and mitigation or prevention of a substantial threat of a discharge, of oil or a hazardous substance— (i) into or on the navigable waters; (ii) on the adjoining shorelines to the navigable waters; (iii) into or on the waters of the exclusive economic zone; or (iv) that may affect natural resources belonging to, appertaining to, or under the exclusive management*

[2] Ibid, Annex 1, Facility & Locality Information, p. 43.

*authority of the United States. (B) In carrying out this paragraph, the President may— (i) remove or arrange for the removal of a discharge, and mitigate or prevent a substantial threat of a discharge, at any time; (ii) direct or monitor all Federal, State, and private actions to remove a discharge; … "*

Furthermore, the CWA authorizes the federal government to exert command and control over any oil spill recovery effort, to levy penalties for spills and recover clean-up costs from the responsible party (Enbridge in the case of Line 5), and to determine whether the federal government would assume total control of an oil spill if substantial threats exists to public health or welfare. The CWA directs the federal government to assume oversight responsibility for protecting the Great Lakes from a massive oil spill catastrophe. **The federal government has both the statutory authority and the ethical responsibility to determine that Enbridge's Contingency Plan for Line 5 violates specific legal requirements** as identified in this document.

**Failure to Consider Line 5 Segments as "High Consequence Areas"**

Section 60109(a) of 49 U.S.C. defines "High-Consequence Areas." It is unclear whether PHMSA or Enbridge have designated key stretches of Line 5 as "High-Consequence Areas" in accordance with Section 6 of PL 112-90. This information may be redacted from the publically accessible layers on the National Pipeline Mapping System. If so, why? The public has a right to know of the risk for operations of the line.

The 135-mile portion of Line 5 from Manistique to St. Ignace, under the Straits of Mackinac, down and across the Indian River, and onward to Wolverine, Michigan is clearly a high-consequence area. This stretch is critical for drinking water supplies to almost all coastal communities across northern lakes Michigan and Huron and homeowners along the Inland Route of Michigan. The area that Line 5 crosses also provides substantial ecological functions to the flora/fauna of the area, including a large track of critical fishery environment. **If these areas are not designated as High-Consequence Areas, PHMSA must rectify this oversight** and require Enbridge to enhance its oil spill response and recovery capabilities accordingly.

The Enbridge Contingency Plan states: *"The High Consequence Areas ("HCAs") and Unusually Sensitive Areas ("USAs") that are detailed and defined for this Plan are an integral part of the Enbridge Superior Response Zone for emergency response. Due to the magnitude of the mapping involved the Enbridge Superior Region HCA Mapbook has been compressed into electronic media, and is accessible through regional offices.[3]"* If these areas are actually designated and mapped according to Enbridge's claim, why are they not in the public domain?

**Failure to Prove that Contingency Plan is Implementable**

Enbridge 2013 Certification Indefensible

Based on the DOT/PHMSA criteria, Enbridge Line 5 is considered to be a system of "Significant and Substantial Harm." The Enbridge Superior Region Zone Contingency Plan states that

[3] Enbridge Integrated Contingency Plan Superior Region (#866) Response Zone, Annex 3.0

*"Enbridge certifies to … PHMSA … that we have obtained, by contract or other approved means, the necessary private personnel and equipment to respond, to the maximum extent practicable, to a worst case discharge*.[4]" **This statement cannot be substantiated by facts.** Enbridge claims that the Integrated Contingency Plan covering Line 5 operations underwent extensive, first-ever PHMSA coordinated peer review before being approved in July 2013. This is more hyperbole than fact.

Manpower and Equipment Mobilization Implausible

PHMSA should never have approved the Enbridge Contingency Plan with the lack of detail on equipment and personnel that can be mobilized in the first 12 hours after an incident occurs. This is a time for immediate response, considering ice conditions, variable currents and heavy waves that frequently occur over northern Lakes Michigan and Huron.

**Worst Case Scenario Grossly Underestimated**

49CFR§194 states that a "Worst Case Discharge" is "*the largest foreseeable discharge of oil, including a discharge from fire or explosion, in adverse weather conditions. This volume will be determined by each pipeline operator for each response zone and is calculated in accordance to §194.105."*

Enbridge's Contingency Plan states: *"Each operator shall determine the worst-case discharge for each of its response zones and provide the methodology, including calculations, used to arrive at the volume*[5]*"* with detailed information available in Core 1.2.2 - Glossary WCD & Annex 1.9. The Enbridge Contingency Plan also states: "*Each response plan must plan for resources for responding, to the maximum extent practicable, to a worst-case discharge, and to a substantial threat of such a discharge*" with detailed information included in Annex 1.9, & 2.3 OSRO. Annex 1.9, covering local spill response equipment, is now fully redacted in Enbridge's Version 3 of the response plan. One would conclude that this redaction is hiding a failure to pre-position necessary assets to contain and clean up a spill.

Maximum Release from Michigan Upper Peninsula Segment Not Defined

A worst case spill scenario has not been made public for the Line 5 segment from Manistique to St. Ignace in the Upper Peninsula of Michigan which has been estimated to be 45,000 bbls or 10 times greater than the worst case for the Straits of Mackinac segment. The most environmentally sensitive area of this line segment is between the pumping stations of Manistique, Gould City, Naubinway and St. Ignace. This information must be publically announced; **the public has a right to question the risk to which it is exposed.**

[4] Ibid, Annex 1, p. A1-4
[5] Ibid, Annex 4, p.3

Maximum Release from Straits of Mackinac Segment Under Assessed

The worst case discharge described by Enbridge in numerous public meetings across the region is 4,500 bbls or 189,000 gallons of crude oil from the Straits of Mackinac segment of Line 5. This estimate is based on a fantasy that the pipeline can be shut down within 3 minutes of a detected significant drop in pressure. This estimate conflicts with Enbridge's own documentation to the Michigan Attorney General which nearly doubles this estimate.[6] This estimate also grossly underestimates what would happen if both 20" lines under the Straits of Mackinac were ruptured by an anchor dragging from a passing freighter which would increase the oil release up to 60,000 bbls.

Enbridge has repeatedly claimed that the Straits of Mackinac segment can be isolated within 3 minutes by remotely shutting of valves upstream and downstream of the Straits. This scenario does not reflect the reality that a Line 5 shutdown would require a cascade of individual shutdowns at each pumping station from Superior, Wisconsin to St. Ignace, Michigan and beyond. **PHMSA needs to reassess this worst case scenario and provide suitable rationale to the public.**

Maximum Release from Michigan Lower Peninsula Segment Not Defined

A worst case spill scenario has not been made public for the Line 5 segment from Mackinaw City to Indian River in the Lower Peninsula of Michigan which has been estimated to be 45,000 bbls or 10 times greater than the worst case for the Straits of Mackinac segment. The most environmentally sensitive area of this line segment is in the proximity of Douglas, Burt and Mullet Lakes, the crossing of the Indian River and along the Pigeon River State Forest. This information must be announced; the public has a right to know the risk to which it is exposed.

**Oil Dispersion Transport Inadequately Addressed**

Currents and Waves in the Great Lakes Exceeds Limits of Existing Control Techniques

The Enbridge Contingency Plan states: *"Current speed - Surface currents greater than 1 knot may cause boom failure or entrapment of oil beneath the boom when the boom is deployed perpendicular to the current. …. Boom can be deployed at varying angles as the current increases.[7]"* Obviously, booms are going to be inoperable in the Straits of Mackinac for most of the time when storm movements are crossing the Great Lakes; there is also no mention of their effectiveness when surface currents vary as they normally do in the Straits. Analysis of 1990 buoy data for surface currents indicates that 30% of the time speeds exceed 1 knot and 5% of the time exceed 2 knots. As such**, boom deployments in the Straits of Mackinac are likely ineffectual for a significant portion of the year**.

[6] Correspondence from Enbridge (Brad Shamla) to Attorney General Bill Schuette and DEQ Director Dan Wyant, June 27, 2014, entitled "Enbridge Lakehead Systems Line 5 Pipelines at the Straits of Mackinac, p. 19

[7] Enbridge Integrated Contingency Plan Superior Region (#866) Response Zone, Version 2, Section 2.4.7.3

From published news articles, initial hydrodynamic model projections show that 6 hours after a release: *"The oil sheen has moved west into Lake Michigan toward the St. Helena Island Nature Preserve, but probably remains midway between the peninsulas. It hasn't spread out much and is concentrated in a roughly 2-mile diameter circular patch which, based on currents, could potentially hit land anywhere between the Headlands Preserve on the Lower Peninsula and Straits State Park in the Upper Peninsula. Response to the spill is thus far limited to local crews using equipment already stashed onsite.*[8]*"*

Currently, only 2,000 feet of boom are prepositioned in the immediate Straits area, not the 30,000 feet necessary to contain a 2-mile diameter circular patch of oil. It is highly implausible that there are sufficient trained personnel and marine resources to deploy the meager 2,000 feet of pre-positioned boom within the first 6-hours of a release.

Analysis of wave information generated by the U.S. Army Corps of Engineers Waterways Experiment Station indicates that 37% of the time, waves in the Straits of Mackinac are 3 feet high or greater and 12% of the time waves in the area are 4 feet or higher. From a recent Detroit Free Press article: "When you get above 3-, 4-, 5-foot seas — definitely at 5 feet — you are beyond where you can safely deploy these things [booms] and have them do any good," said Jerry Popiel, incident management adviser for the Coast Guard's 9th District, which includes the Great Lakes.[9]"

On Enbridge's website describing the Michigan Technological University monitoring buoy deployed in the Straits of Mackinac, Jamey Anderson, coordinator of marine operations at Michigan Tech's Great Lakes Research Center, states, "*The air temperature dropped 12 degrees inside of five minutes. The wind speed picked up from six or seven miles an hour to 35. The wind direction was all over the place, just swirling, really violent. And the wave heights went from less than one foot to six feet…all in the span of about 10 or 12 minutes."* **This is an example of the unique weather and water conditions that occur in the Straits of Mackinac**.

Physical Dimensions of the Straits of Mackinac and Adjacent Great Lakes Exceed Limits of Existing Control Techniques

The Enbridge Contingency Plan states: *"Channel width – The width of a watercourse will determine if multiple sections of boom need to be installed. One method is cascading boom. Single boom deployments across wider channels have a greater chance of failing as current increases.*[10]*"* The width of the Straits is between 3.5 and 6 miles, so complete coverage is impossible. The quantity of booms needed to contain a spill is exponential to the spread of the oil spill. Within the first 6 hours of a spill, realistically 6 miles of boom would need to be deployed which is operationally impossible given current pre-positioning of booms, lack of vessels of opportunity on site and trained personnel on the ready.

[8] "NOAA Graphics Show How a Mackinac Straits Oil Spill Might Look", MLive article by Garret Ellison, 11/20/15
[9] "Oil spill, high waves: A Great Lakes disaster scenario", Keith Matheny, Detroit Free Press, 12/6/15
[10] Enbridge Integrated Contingency Plan Superior Region (#866) Response Zone, Annex 3.0, Section 2.4.7.4

The Enbridge Contingency Plan states: "*Depths greater than 50 ft. (approximately 15 meters) can complicate hard boom anchor placement within the watercourse. Shoreline anchors or systems such as the Boom Vane may be more applicable. Depths less than 2 feet (approximately 0.5 meters) can preclude effective hard boom use. Sorbent booms, dams and filter fences may prove more effective.*[11]" The depth of water varies considerably across the Straits of Mackinac with some locations in excess of 250 feet.

The Enbridge Contingency Plan further states: *"Anchor points - Soft bottom substrates can complicate boom anchor placement.*[12]" A large portion of the Straits of Mackinac could impede anchoring due to bottom substrate and depths greater than 50 feet which makes anchoring extremely problematic. Boom anchoring has not been suitably tested in this area even during pre-planned exercises.

The Enbridge Contingency Plan states*: "Safety - High currents and winds, large obstacles, and other dangerous conditions could present safety hazards and preclude certain techniques.*[13]" - The Straits of Mackinac is an active commercial, recreational and fishery navigation zone. Commerce would have to be halted while clean-up operations are underway. None of these direct impacts are addressed in Enbridge's Contingency Plan.

The Enbridge Contingency Plan states: *"All products shipped on the Enbridge system are floating oils, including dilbits and synbits. Enbridge acknowledges that, under certain environmental conditions, some fraction of oil released to a water body may become entrained in the water column, submerge or sink, in freshwater environments.*[14]" **Vertical mixing of oil with water will occur in the Straits of Mackinac where complex horizontal and vertical currents occur.** It is generally accepted that at best, only 30% of the crude is recovered after a spill and in the case of an accident in the Straits of Mackinac this low threshold would likely be impossible in this area.

The Enbridge Contingency Plan states: *"Oil conditions - Heavier oil conditions and larger areas may require more intrusive or mechanical methods, whereas lighter conditions may not require clean-up. For example - removing lighter oils in a marsh area or wetland may cause more harm to the environment than allowing for natural attenuation and biodegrading.*[15]" **This is a ridiculous premise - biodegrading will NEVER occur in freshwater systems**[16]**.**

The Enbridge Contingency Plan raises numerous other "red flags" including: *"Aquatic containment is primarily conducted through the use of oil spill containment booms.*[17]" This assessment is primarily based on riverine spills, not large bodies of water like the Straits of Mackinac. In addition, the Enbridge Contingency Plan states: *"Skimmers are usually the most*

[11] Ibid, Section 2.4.7.4
[12] Ibid
[13] Ibid
[14] Ibid, Section 2.4.7.4 - Submerged Oil Content
[15] Ibid, Section 2.4.7.5 - Clean-up Technique Selection - Shoreline
[16] Biodegradation of Crude Oil Contaminating Marine Shorelines and Freshwater Wetlands, Albert D. Venosa and Xueqing Zhu, Spill Science & Technology Bulletin, Volume 8, Issue 2, April 2003, pp 163-178
[17] Enbridge Integrated Contingency Plan Superior Region (#866) Response Zone, Annex 3.0, Section 2.4.7

*efficient means of recovery of aquatic spills, although pumps, vacuum systems, and sorbents can also be effective, particularly in smaller waterways.*[18]" The Straits of Mackinac and northern Lakes Michigan and Huron are not "smaller waterways." It is also noted that at temperatures below freezing, most skimmers are difficult to operate; it is obvious that an oil spill in the Straits of Mackinac and adjacent waters would make the use of skimmers and similar equipment inadequate.

The Enbridge Contingency Plan states: "*Slick thickness - Recovery effectiveness with pumps/vacuum systems and skimmers decreases as slick thicknesses decline, becoming relatively ineffective for very thin slicks or sheens.*[19]" Most oil releases will dissipate quickly in the Straits of Mackinac which would eliminate the functionality of standard equipment.

Containment and Clean-Up under Ice Conditions Abysmal

On Enbridge's website "Winter Emergency Response", they claim that "*an independent contractor with spill response expertise was commissioned in early 2015 to evaluate our capabilities to respond to a pipeline emergency during winter conditions.*[20]" There is no further mention of the results of this evaluation. In this same section of their website there is information on the equipment that either Enbridge, or their contractors, own that's based in the Straits. This includes:

- *Remote Operated Vehicles (ROVs) that move below the surface of the ice, detect oil with sensors, and transport equipment below the surface to remove oil;*
- *Ice drills or augers that cut holes in the ice, so hoses and pumps can be used to suction oil;*
- *Arctic-specific water skimming equipment that can be used in both open-water and icy conditions;*
- *Specialized ice and fire boom, deployed to contain oil; and*
- *Vessels with water cannons that "herd" the oil to containment and collection areas.*

According to the Enbridge's Contingency Plan Version 3 none of this equipment is listed at any of their response sites for the Superior Region, except for an 'Ice Slotting Trailer' located in Escanaba, 4-5 hours from the Straits of Mackinac. The equipment at this location for use under ice conditions is of minimal utility.

The International Tanker Owners Pollution Federation (ITOPF) makes some critically important statements about oil recovery in Arctic and cold climates:

Oil Fate & Behavior in Icy Waters:

"Arctic conditions affect spilled oil fate and behavior in a number of ways, some aiding and some hindering our ability to respond. Standard oil spill fate and trajectory models

[18] Ibid
[19] Ibid, Section 2.4.7.4
[20] Enbridge website: Enbridge.com/~/media/Rebrand/Documents/Projects/line5/Safety_in_the_Straits_FS_Winter_Emerg_Response.pdf?la=en

do not apply in icy waters. Oil trapped within or under fast ice is likely to remain relatively stationary as fast ice does not drift with surface currents or wind, and under-ice currents are minimal. In the highly dynamic pack ice zone however, oil drift may be considerable and unpredictable."

Extreme cold – Oils will be more persistent – Reduces the rate of natural weathering processes such as evaporation and biodegradation; increases oil viscosity.

Pack Ice – Dampens wave energy and reduces natural dispersion and emulsification – Increased window of opportunity for chemical dispersion and in-situ burning.

Fast Ice – Oil may become encapsulated within or trapped underneath ice – Difficult to detect, track, and recover oil.

Containment & Recovery of Oil in Ice**:**

"Mechanical recovery of oil in ice is physically challenging. The presence of ice is likely to prevent the use of booms. The extreme cold meanwhile may hinder the operation of skimmers and pumps, and will increase the viscosity of spilled oil. " "…The availability of suitable vessels and facilities for the storage and disposal of recovered oil will also be major considerations."

"In-situ burning of oil is capable of removing large volumes of oil from the water surface with minimal waste generation. In the Arctic the minimum slick thickness required to sustain an efficient burn may be achieved by containment in ice. In Arctic conditions ignition or combustion aids may be required to start and sustain a burn.

Whilst experimental burns have reported oil removal efficiencies in excess of 90%, resultant tar-like residues with a tendency to sink may be produced. The toxicity and physical smothering impacts of such residues on Arctic flora and fauna have not yet been tested. In-situ burning is not a pre-approved technique for the Arctic, and it is likely that the dense smoke plume generated would restrict burns in close proximity to sensitive coastal resources."

The Great Lakes Ice Atlas generated by the Great Lakes Environmental Research Laboratory of the National Oceanic and Atmospheric Administration showcases the climatology of ice conditions in the upper Great Lakes, including the Straits of Mackinac and northern Lakes Michigan and Huron. Review of this data indicates that on average there is ice cover in these areas for 4 months of the year. **Typically, ice cover is not solid, but rather shifting** as atmospheric pressure systems cross the region **making oil spill containment and clean-up under these situations near impossible.**

**Mobilization of Physical Assets Inadequate**

Containment and Removal Unproven and Untested in Great Lakes Open Waters

Enbridge claims that their Tactical Response Plan specific for the Straits of Mackinac adequately covers the unique needs of the area. This implies that the public should accept unsubstantiated assurances that a spill can be contained and cleaned up. PHMSA needs to critically reassess these documents, in conjunction with the U.S. Coast Guard (USCG) and the U.S. Environmental Protection Agency (USEPA), to assure the public that industry can be trusted.

Oil Dispersion Exceeds Capabilities to Cascade Control and Recovery Equipment

Equipment needed to contain a spill in the Straits of Mackinac is sorely inadequate for reacting in a timely fashion. Enbridge has prepositioned 2,000 feet of containment boom in St. Ignace and Mackinac City, only 20% of the necessary boom for a "best case" spill that occurs when the Straits are ice-free and with low wind and wave conditions (otherwise referred to as Enbridge's "worst case" spill for the area.)

The Enbridge Contingency Plan Annex Section 1.10 **Emergency Response Time is redacted from public review**. One would conclude that the operator is obscuring material flaws in their Contingency Plan. The redaction restricts the public's right to know about the risk that they are exposed to and reduces their trust in industry to correct mistakes in a timely fashion.

The closest skimmer for a Straits of Mackinac spill is located in Escanaba, Michigan - a minimum of 4-5 hours away if immediately mobilized. Although equipment could be brought from other locations downstate in Michigan, it would still require at least 6-8 hours for mobilization.

One of the safety issues identified in the National Transportation Safety Board (NTSB) Accident Report for the Marshall, Michigan spill of July 25, 2010 was *"… the oil spill response contractors, identified in Enbridge's facility response plan, were unable to immediately deploy to the rupture site and were over 10 hours away[21]."* The Oil Spill Response Organization (OSRO) listed in the Superior region contingency plan is Marine Pollution Control Corporation located in Detroit, Michigan - at least 5-6 hours away from the Straits of Mackinac, if immediately mobilized.

Five days after the Emergency Response Protocol was initiated in Marshall, Michigan there was 36,055 feet of containment boom deployed, 30,840 feet of absorbent boom deployed, 79 vacuum trucks, 48 skimmers, 19 tanker trucks, 82 frac tanks, and 43 boats engaged. 453,600 gallons of oil/water had been transported to Griffith, Indiana and 1,386,000 gallons of oil/water was stored in frac tanks for future transport. The magnitude of similar deployment for a major spill in the Straits of Mackinac, along US-2 in the Upper Peninsula and within Cheboygan County in the Lower Peninsula is inadequately addressed in the existing Enbridge Contingency Plan.

[21] National Transportation Safety Board Accident Report titled "Enbridge Incorporated Hazardous Liquid Pipeline Rupture Release, Marshall Michigan, July 25, 2010

**Public Health Exposure to Spill Not Adequately Identified**

Evacuation for Atmospheric Exposure from In-Situ Oil Burning Not Addressed

Section 1.8 of Annex 1 of the Enbridge Contingency Plan provides only a generic description on evacuation procedures to be employed in case of an oil spill. **This lack of pre-planning is endemic of the entire Enbridge Contingency Plan.** In the case of surface oil burning, a likely option during ice covered conditions on northern Lake Michigan and in the Straits of Mackinac, it is imperative that the Contingency Plan identifies locally available atmospheric monitoring equipment to protect the health of area residents. In-situ burning of an oil spill is totally overlooked in this Contingency Plan amplifying the need for PHMSA to de-certify it.

Drinking Water Contamination in Affected Areas Not Addressed

In the counties affected by the Marshall, Michigan spill there was a ban on fishing, swimming, and boating. Water advisories were issued for private wells within 200 feet of the edge of the affected river bank. The Enbridge Contingency Plan does not address the potential of a major oil spill in the counties of Mackinac, Schoolcraft, Emmet, and Cheboygan counties were 8,000-10,000 property owners with private wells could be directly affected. In addition, there are numerous coastal communities who take their drinking water from northern Lakes Michigan and Huron or from the Inland Route of Michigan. Not only would entire communities be affected, but many of the water treatment plants could become contaminated from an oil spill.

**First Responder Training and Response Exercise Inadequate**

Enbridge's Emergency Response Exercise conducted in the Straits of Mackinac on September 24, 2015 provides a good deal of information to inform all about the paucity for needed emergency response. The scenario used for this exercise has little "real-world" validity as it is based on the assumption that oil releases are stopped within 3 minutes per Enbridge public relations myth and the response plan does not adequately address the complexity of currents, waves, water depth and ice conditions in the upper Great Lakes. Actual shutdown of the pipeline would not likely occur for at least 15 minutes to an hour for Enbridge's control system to be remotely activated.

The Spill Response Exercise held by Enbridge in September 2015 was the minimum necessary investment of time and resources on the part of industry. Real emergencies happen suddenly and are not planned months in advance. A massive response infrastructure – as was the case in September 2015 – is not in place or even planned in sufficient detail to effectively react in a timely fashion when a rupture occurs on Line 5 into the Straits of Mackinac and adjoining waters of Lakes Michigan and Huron.

According to a published news article for the hypothetical spill used in the September 2015 clean-up exercise: *"…surface oil floats around the Straits for a day before starting to beach along the Lower Peninsula. Mackinaw City [Michigan] functions as a kind of ground zero in the model, with the heaviest concentrations washing ashore on the western side of Bois Blanc Island*

*in Lake Huron 60 to 72 hours after release. Interestingly, the graphics show a greater overall impact on the Lower Peninsula than the Upper Peninsula, although during the exercise, crews mostly practice boom and skimmer deployment and wildlife protection near Point La Barbe west of St. Ignace [Michigan], with some open water practice near Round Island.[22]"* Hence, the drill didn't include the areas that would be most affected, nor the personnel that would most likely be the first responders.

Furthermore, the U.S. Department of Transportation, in conjunction with the USCG and USEPA, should conduct unexpected spill response exercises. Pre-planned spill exercises do not showcase material weaknesses in spill recover operations, but rather are used more for their public relations benefit.

**Conclusion**

A careful review of Enbridge's Integrated Contingency Plan for the Superior Region Response Zone and prior After Action Reports from recent Spill Exercises leads to the conclusion that **Enbridge is ill-prepared to contain and clean up an oil spill in the upper Great Lakes including the Straits of Mackinac.** PHMSA should never have certified the Enbridge Contingency Plan with its inherent shortcomings and oversights. This egregious situation must be corrected. A moratorium on crude oil shipments through Line 5 needs to be ordered until this situation is corrected.

[22] "NOAA Graphics Show How a Mackinac Straits Oil Spill Might Look", Mlive article by Garret Ellison 11/20/15

# Attachment D

**Statement of Stanley ("Skip") Pruss** [http://5lakesenergy.com/]

From: Skip Pruss <pruss@5lakesenergy.com>
Sent: Wednesday, July 27, 2016 7:18 PM
Subject: Energy & Climate Notes 07/27/16

Other Hidden Costs of Line 5

"You wouldn't site, and you wouldn't build and construct pipelines underneath the straits today."
Attorney General Bill Schuette

[Begging the question: If a state-of-the-art, 21st Century pipeline presents an unacceptable risk, why is the continued use of an aging, mid-20th Century pipeline acceptable?]

Many compelling reasons exist to terminate the use of Line 5, the twin 20-inch pipelines carrying crude oil and natural gas liquids that cross the state-owned bottomlands under the Straits of Mackinac. Much research, analysis, and modelling has been done by scientists, engineers, lawyers and academics demonstrating that Line 5 poses an unreasonable risk. Yet Line 5 continues in use, operating under the inherent illogic that a 63 year-old undersea pipeline can function indefinitely without incident.

To the many arguments compelling closure, let me offer another – one that is decidedly minor when compared to the potential catastrophic impacts of a Line 5 failure – but an argument that might manage to nudge your outrage quotient up a notch:

You and I are subsidizing Enbridge to maintain and operate Line 5.

But before addressing the many ways public resources are being expended to benefit Enbridge, let's review some of the facts that should have already been determinative.

- There exists an imminent risk of catastrophic harm to one-third of North America's surface water that is Lakes Michigan and Huron (one lake). UM's Graham Sustainability Institute's analysis <http://graham.umich.edu/water/project/mackinac-oil-spill> indicates that that more than 700 miles of shoreline in Lakes Michigan and Huron and proximate islands are potentially vulnerable to an oil release in the Straits that would result in accumulation requiring cleanup, and that more than 15% of Lake Michigan's open water (3,528 square miles), and nearly 60% of Lake Huron's open water (13,611 square miles) could be affected by visible oil from a spill in the Straits.

- "Imminent risk" has two components – the likelihood of a failure and the potential magnitude of the harm. The UM study and the National Wildlife Federation report Sunken Hazard <http://www.nwf.org/~/media/PDFs/Regional/Great-Lakes/NWF_SunkenHazard.ashx> have amply demonstrated the magnitude of potential harm through dispersion modelling. The likelihood of failure cannot be regarded as zero as Enbridge's own inspections have revealed corrosion in nine locations, 55 "circumferential" cracks, and loss of wall thickness in the pipeline itself.

- The U.S. Coast Guard has acknowledged its limited capacity to launch an effective remedial response should a spill event occur in winter or with waves over 4-5 feet – a common occurrence in the

Straits.
<http://www.oilandwaterdontmix.org/citizens_call_to_shut_down_enbridge_line_5_by_december>

- Enbridge pipelines have had 804 document spills through 2010 with at least five additional spills since 2012. <https://line9communities.com/history-of-enbridge-spills/>

These facts illustrate a risk of substantial harm to Lakes Michigan and Huron – a globally unique freshwater resource – as well as to the coastal communities and the tens of millions of people connected to and served by these waters.

So let's start there – who bears the risk?

First, Enbridge has transferred the risk of harm to people of the Great Lakes Region. The risk of harm can be quantified, modelled and monetized. Under Enbridge's worst-case spill scenarios of 200,000 to 400,000 gallons, Enbridge's estimate of remedial costs approaches $1 billion. But the FLOW (For Love of Water) policy center analysis found Enbridge's estimate low, and has calculated a worst case spill scenario of 1.27 million gallons <http://flowforwater.org/wp-content/uploads/2016/05/FINAL-Line-5-Spill-Scenarios-05-02-16.pdf>. Yet under the 1953 easement <http://www.michigan.gov/documents/deq/Appendix_A.1_493978_7.pdf>, Enbridge is required to maintain a paltry $1 million in insurance and a surety bond of $100,000.

Second, additional work necessary cited by UM as a predicate to determining the full cost of the transferred risk would include an analysis of environmental impacts, cleanup costs, restoration and remediation measures, natural resource damages, and economic damage to public and private sector interests. Natural resource damages and natural resource restoration alone costs could be many times greater than the cost of responding to a spill. As it stands, there is no financial assurance mechanism that could begin to cover the costs of these potential impacts.

Third, the additional work necessary to ascertain the full nature and extent of damages that may occur with a Line 5 failure has been left to taxpayers. Already, significant resources have been expended in an effort to understand the risks presented by Line 5. In Michigan, these costs include the work of the Department of Attorney General and its lawyers, the staff of the Michigan Department of Environmental Quality, the Michigan Department of Natural Resources, the Michigan Public Service Commissions, and local governments who have mobilized in response to the Line 5 threat. It includes the staff and support for the Michigan Petroleum Pipeline Task Force. Also include all the staff time of the myriad state and federal agency personnel who have spent thousands of hours attending to the various aspects of Line 5 matters.

Fourth, taxpayers have paid for the spill response exercises undertaken by state and federal officials. We have paid for the multiple mobilizations of the United States Coast Guard, the Pipeline and Hazardous Materials Safety Administration, the Environmental Protection Agency, the Michigan State Police, and Mackinac County Emergency Management. NOAA's Great Lakes Environmental Research Laboratory (GLERL) and GLERL's Lake Michigan Field Station have also been involved in spill response exercises.

Fifth, aside from a $2,450 payment made to the Michigan Department of Conservation in 1953, the state is not receiving any compensation for the use of state bottomlands. Great Lakes bottomlands are "public trust" resources meaning that under our jurisprudence, the state holds the bottomlands in trust

for the benefit of the people of the State of Michigan. When state bottomlands are leased for uses like a marina or dockage, compensation is paid for that use. But more importantly, under the "Public Trust Doctrine," the state may not lease bottomlands unless it first makes a determination that future uses of state bottomlands will not be impaired or substantially affected.

Here's what the MDEQ website state s<http://www.michigan.gov/deq/0,1607,7-135-3313_3677_3702-10865--,00.html> about the Public Trust Doctrine:
"The bottomlands of the Great Lakes are held in trust by the State of Michigan for use and enjoyment by its citizens. The State, as the owner and trustee, has a perpetual responsibility to the public to manage these bottomlands and waters for the prevention of pollution, for the protection of the natural resources and to maintain the public's rights of hunting, fishing, navigation, commerce, etc. The State of Michigan's authority to protect the public's interest in the bottomlands and waters of the Great Lakes is based on both ownership and state regulation. The Public Trust Doctrine, as the basis for Part 325, provides state authority to not only manage but also to protect the public's fundamental rights to use these resources.
"Michigan courts have determined that private uses of the bottomlands and waters, including the riparian rights of waterfront property owners, are subject to the public trust. In other words, if a proposed private use would adversely impact the public trust, the State of Michigan's regulatory authority requires that the proposal be modified or denied altogether in order to minimize those impacts."

Another critical aspect of the Public Trust Doctrine is that the doctrine requires reexamination of past governmental decisions on public trust matters in light of new scientific knowledge and information. Attorney General Schuette has stated that based upon what we know today, a pipeline crossing the Straits is unacceptable. Under the Public Trust Doctrine, he should be compelled to act to terminate Line 5.

The Traverse City-based FLOW policy center <http://flowforwater.org/> has been an international champion of the Public Trust Doctrine and recently persuaded the international Joint Commission to recognize the doctrine as a managing framework for the Great Lakes. FLOW has also taken the lead in doing much of the legal and engineering assessments of Line 5 – earning widespread gratitude, respect and support.

Disclosure: I'm on FLOW's board.