

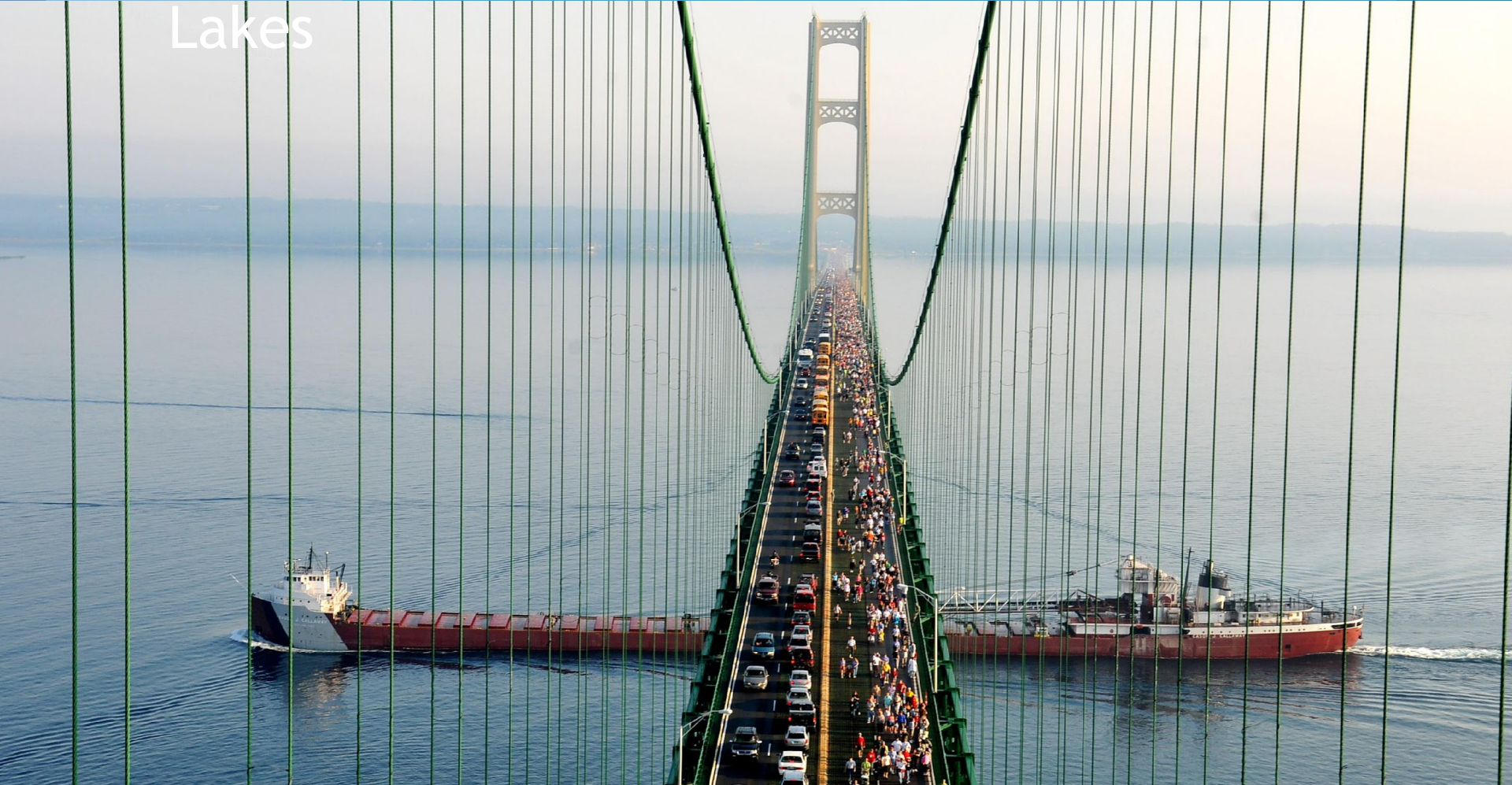
Community Update on Line 5: The Decaying Oil Pipelines, the Proposed Oil Tunnel, the Risk,
& the Law



Liz Kirkwood, Executive Director
Jim Olson, President and Founder
Rick Kane, Technical Advisor
Bryan Newland, Chairman, Bay Mills Indian Community

July 19, 2019

Lakes



of MI

LINE 5 PIPELINES

Public Trust Easement: State's perpetual duty to protect the waters and public trust uses of drinking, fishing, swimming, boating, etc.





Oil & Water Don't Mix
Keep Oil Out of the Great Lakes

**GREAT LAKES
BUSINESS NETWORK**



Michigan Citizens for Water Conservation

WMEAC



CLEAN WATER ACTION
MICHIGAN

Michigan
Resource
Stewards



groundwork
CENTER FOR RESILIENT COMMUNITIES



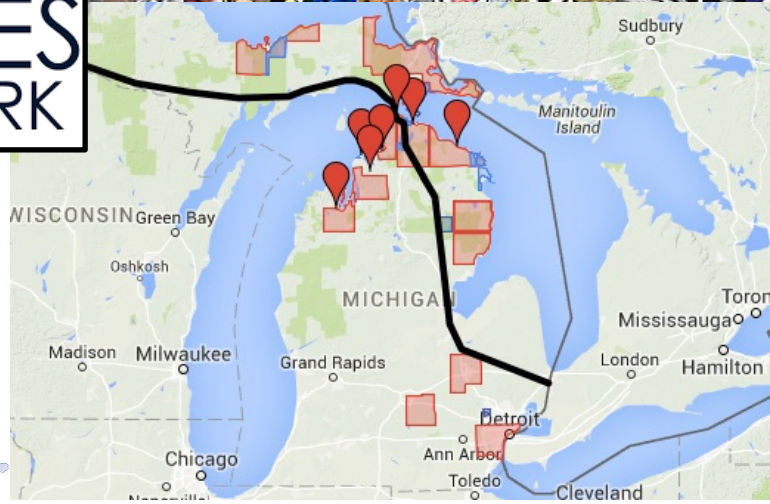
CONCERNED
CITIZENS OF
CHEROKEE &
EMMET
COUNTY

MN350

food&waterwatch



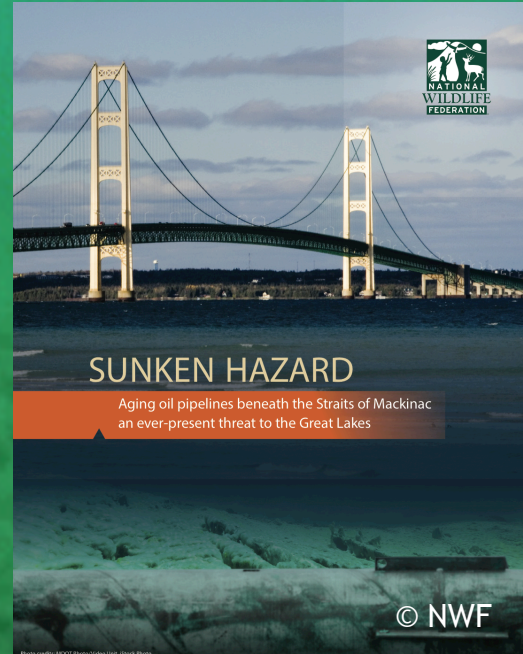
TC350







“Unless action is taken, an oil spill in the Straits of Mackinac isn’t a question of if—it’s a question of when.”
- NWF’s Sunken Hazard, 2012



SUNKEN HAZARD

Aging oil pipelines beneath the Straits of Mackinac
an ever-present threat to the Great Lakes



Insurance Requirement (Section J): “all damage or losses caused to property (including property belonging to or held in trust by the State of Michigan)...”

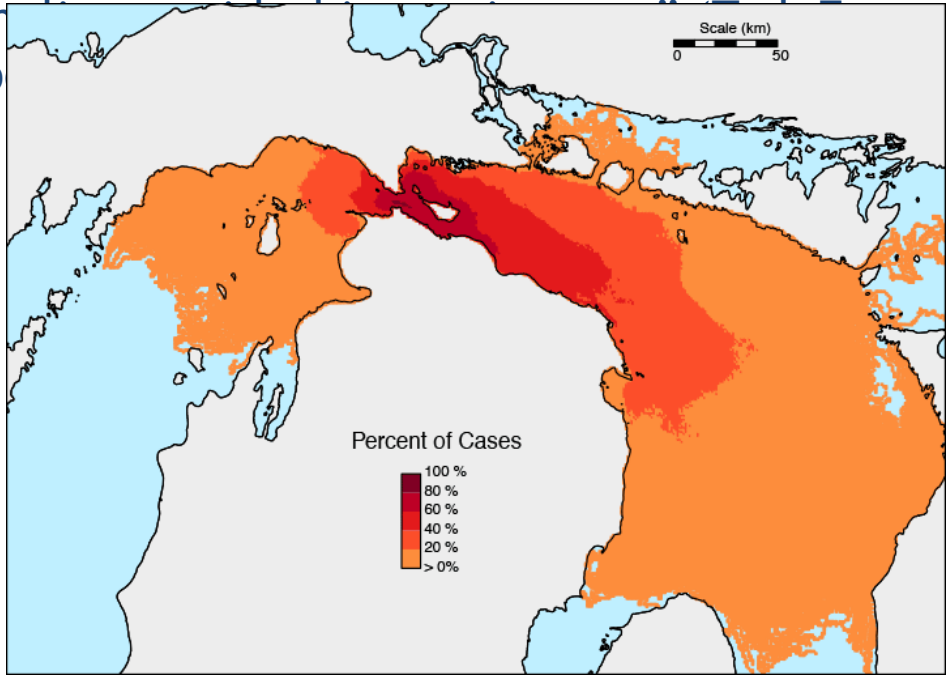
“To date, Enbridge has not documented that it is in compliance with the Michigan Coastal Protection and Restoration Act.”

M WATER CENTER
UNIVERSITY OF MICHIGAN

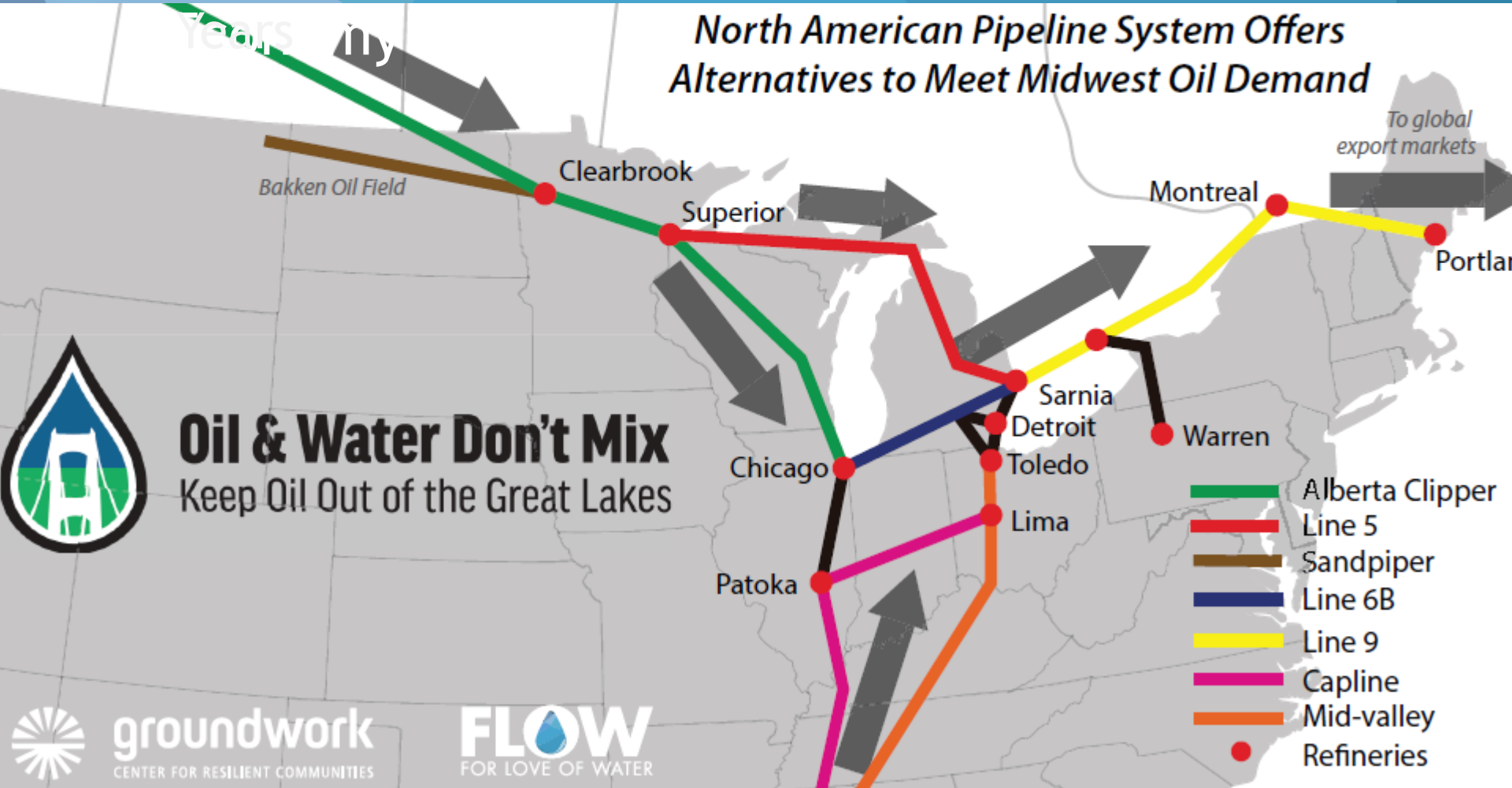
Statistical Analysis of Straits of Mackinac Line 5:
Worst Case Spill Scenarios

UNIVERSITY OF MICHIGAN, ANN ARBOR

DAVID J. SCHWAB, PH.D.
MARCH 2016



North American Pipeline System Offers Alternatives to Meet Midwest Oil Demand



OIL SPILL ECONOMICS

Estimates of the Economic Damages of a Potential Oil Spill in the Straits of Mackinac

"A rupture of this pipeline... has the potential to inflict economic damages that are significant, if not catastrophic."
-Dr. Robert Richardson, ecological economist, MSU



\$6.3 BILLION
in economic impacts, damages & restoration

 **\$697.5 MILLION**
in costs for natural resource damages and restoration

 **\$4.8 BILLION**
in economic damages to the tourism economy

 **\$485 MILLION**
in economic damages to coastal property values

 **\$233 MILLION**
in economic damages to municipal water systems



 **\$61 MILLION**
in economic impacts to commercial fishing

NOTES
 THE MAY 2018 STUDY:
 * Does not depict a worst-case spill.
 * Is based on a hypothetical scenario involving a major spill of approximately 2,500,000 gallons of crude oil (approximately 59,500 barrels).
 * Assumes the spill would take place during months under ice-free conditions favorable to response.
 * Does not estimate impacts to the shipping sector, costs of evacuation, and impacts on Canadian shorelines and economic sectors.

“The debate over Line 5 has been raging for over five years. Real-world events have shown me we can’t wait another five to ten years for Enbridge to build a tunnel. We cannot prevent accidental or emergency anchor deployments in one of the busiest shipping channels in the Great Lakes. And it only takes one such incident to cause an environmental and economic catastrophe. That is a risk no one should be willing to



A Legal Update on Line 5: We did it! The Rule of Law that Protects the Great Lakes, Straits, and Mackinac Island, and the Tribes

Mackinac Island, July 19, 2019

**Jim Olson, President and Legal Advisor,
FLOW**

Spill



- Oil pipeline indicating principal direction of flow
- Proposed pipeline
- Natural gas pipeline slated for conversion to oil
- Storage or pumping facility
- Major aquifer
- Native American reservation



“We would not allow this pipeline to be built today and its days are certainly numbered.

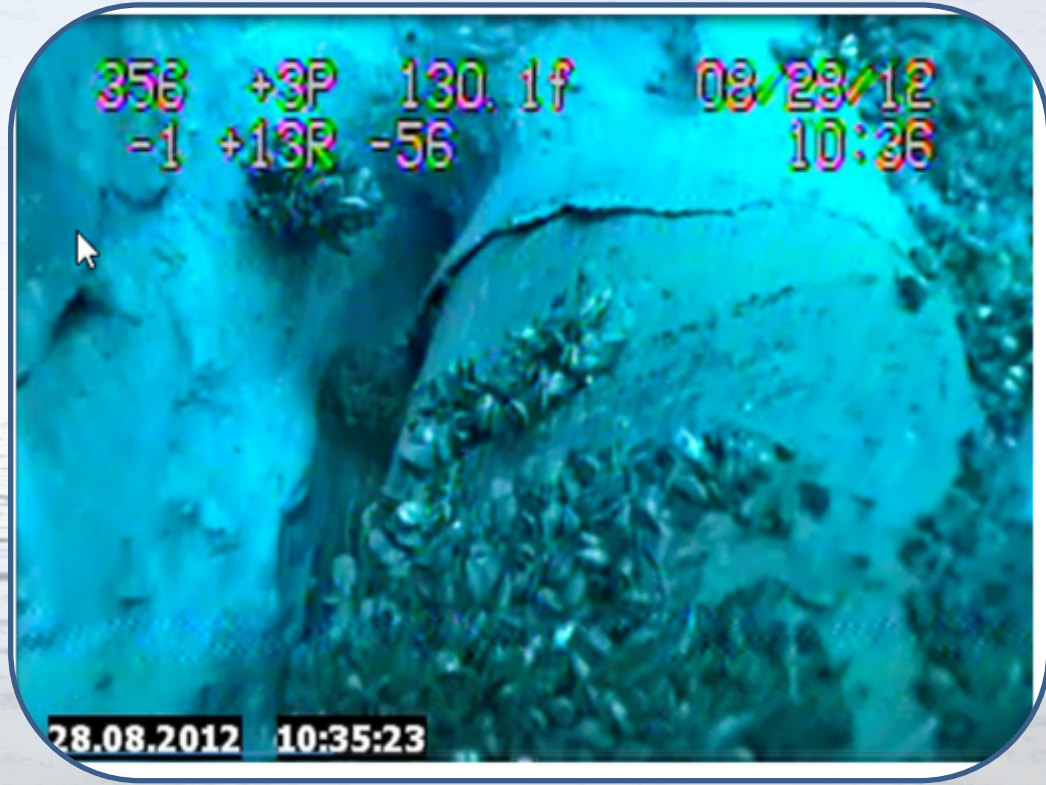
The Great Lakes are Michigan's crown jewel and we cannot tolerate an environmental disaster that would forever change them.”

-Michigan Attorney General Schuette

1. Standard of Care: Reasonably Prudent Person
2. Indemnity Provision Inadequate Liability
3. Pipeline Wall Thickness Provision
4. Pipeline Exterior Slats and Coating
5. Pipeline Minimum Curvature Requirement
6. Maximum Unsupported Span Provision
7. Federal Violation of Emergency Oil Spill Response Plan (Section A)
8. State Violation under the Michigan Environmental Protection Action (Section A)



2012 Video Clips Courtesy Dr.





Anchoring Requirement:
(Section A (10)): “The maximum span or length of pipe unsupported shall not exceed seventy-five (75) feet.”

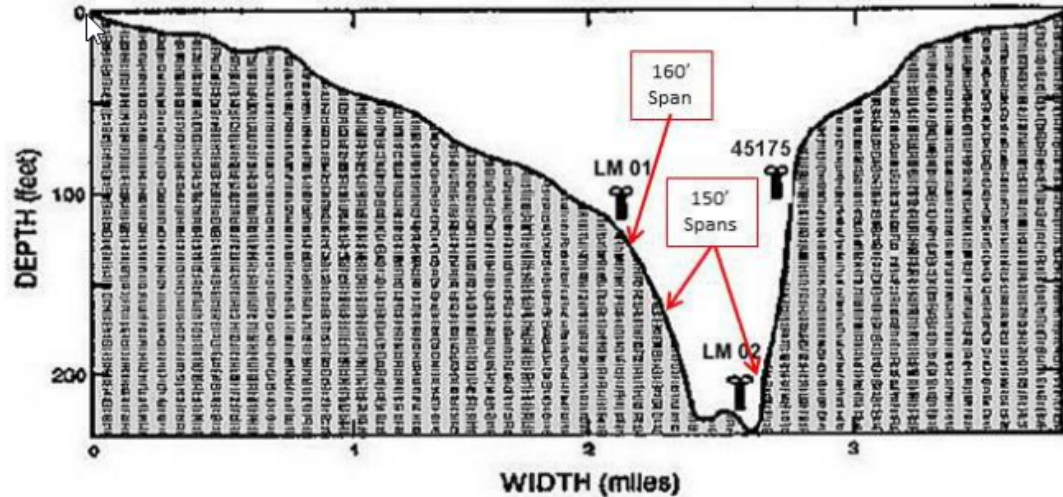


Figure 37. Cross Sectional View of the Straits of Mackinac Showing Locations of Long Unsupported Spans in Relation to Buoy Positions

Enbridge admitted to violations in 2014 & 2016; Request for 22 new ones in 2017; 50 % of pipeline not supported. Currents stronger than engineering specs

4/24/2018 4:42:35 PM

H: 286.2 °
D: 233.62 ft
Temp: 50.3 °F



An underwater image from Canadian oil transport giant Enbridge shows deep grooves in the Straits of Mackinac lake bottom, going up and over one of the twin Line 5 oil pipelines and leaving damage to the pipe's outer coating, the result of an April 1, 2018 anchor strike. *(Photo: Enbridge via U.S. Senate)*

Economy

Michigan Constitution of 1963, Art 4, Sec. 52

- The air, water, and natural resources of the state are declared to be of paramount concern.
- The State has a duty to protect the air, water, and natural resources from pollution, impairment, or destruction.

Common Law Public Trust Doctrine

- The State as Trustee has affirmative duty to prevent impairment
- The State can never transfer or alienate the trust – the doctrine is irrevocable
- Citizens are legal beneficiaries – navigation, fishing, boating, drinking water, swimming, etc.
- Conduct must be for primarily public purpose
- The State must consider and determine these standards are met, or the decision is invalid

Economy **The Great Lakes Submerged Lands Act of 1955**

Any occupancy, structure, fill, dredging, or placement of materials requires

1. A conveyance, lease, or occupancy agreement; and
2. Activity permit for the actual construction or conduct.

GLSLA Rule 1015

No permit shall be granted unless the applicant submits an environmental report and alternatives study that assesses potential adverse environmental impacts and proves the following:

- (a) No impairment to public trust waters, bottomlands and protected uses;
- (b) There exist no feasible and prudent alternatives.

Economy

Michigan Environmental Protection Act of 1970

The State has a duty to prevent and minimize likely adverse effects to the air, water, natural resources, and public trust in those resources.

The State has a duty to consider and determine the likely effects of a proposed action, and if there are such likely effects, the proposed action is prohibited unless the applicant demonstrates there is no feasible and prudent alternative.

The State decision must be consistent with the State's paramount concern for air, water, natural resources and the public trust.

1. Anchor Permit Contested Case - Straits of Mackinac Alliance, Grand Traverse Band of Chippewa and Odawa Indians, and City of Mackinac Island

Filed: June 2018

2. Enbridge v. State of Michigan - Court of Claims challenging constitutionality of Act 359 to build a proposed tunnel for petroleum pipeline transport using public trust bottomlands in the Straits of Mackinac

Filed: June 6, 2019

3. State of Michigan v. Enbridge - State Circuit Court, Ingham County, alleging 1953 easement is void based on ongoing risk of oil spill and associated harm and pollution to public trust resources and public nuisance. Legal theories include violations of public trust law, public nuisance, and Michigan Environmental Protection Act (MEPA).

Filed: June 27, 2019

4. ELPC/NWF v. United States Coast Guard - Inadequate Oil Spill Response Plan

Economy

- Public comment on DNR's review of Enbridge compliance with 1953 easement
- Urge Governor Whitmer and DEQ director Liesl Clark to demand Enbridge apply for authorization required for change of failing design of anchor supports under rule of law.
- Urge Governor Whitmer to direct DEQ and DNR to join the AG Michigan v. Enbridge lawsuit
- Support the parties and contested cases—Mackinac Island, the Tribes, and SMA
- Support FLOW and OWDM: We can't do the high-level work required to victory without your help.



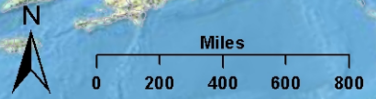
- System Definition,
Focus
- Dynamics, Evolution



• Possible Outcomes

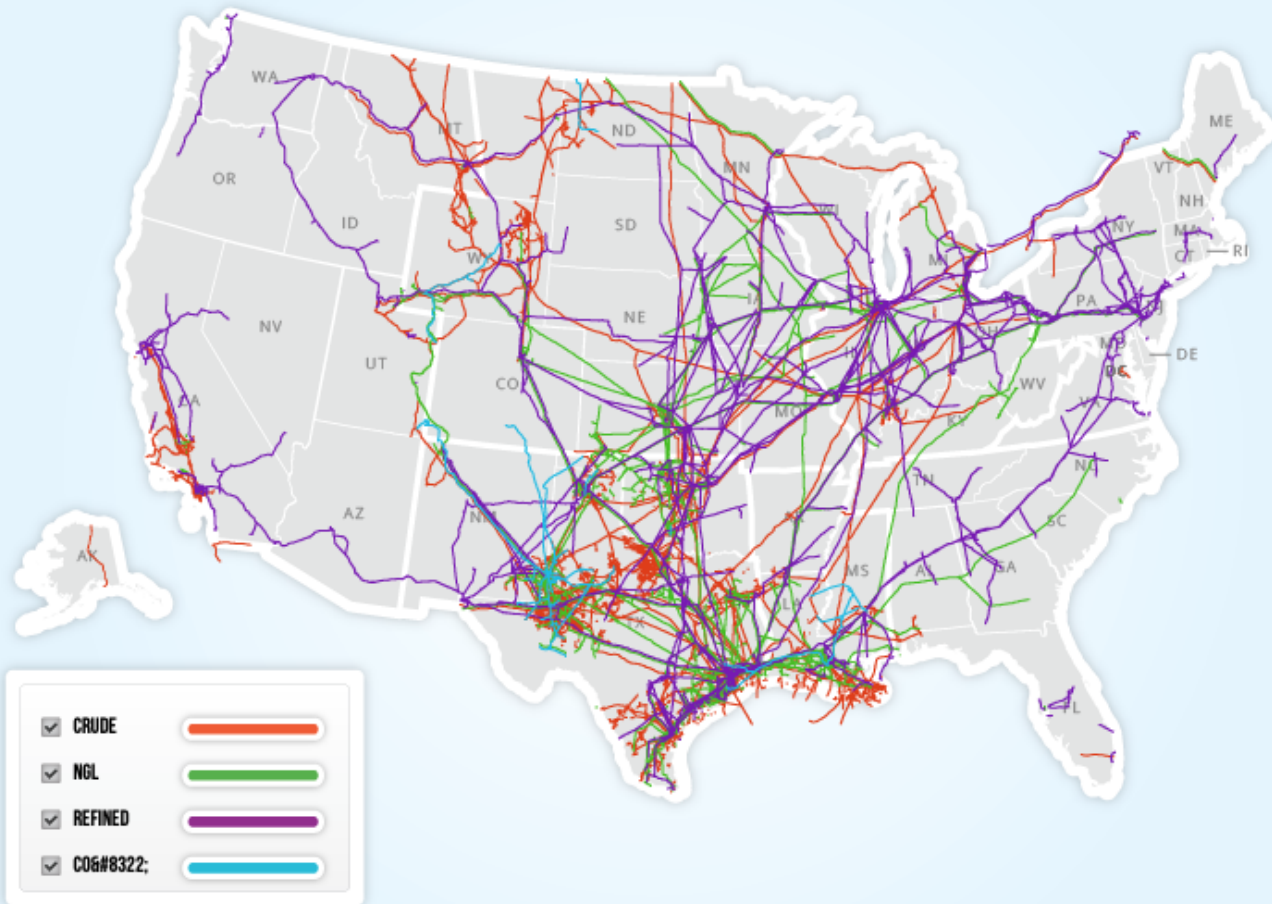
- IDE
- NGL
- REFINED
- COG#8322;

North American shale plays (as of May 2011)



Source: U.S. Energy Information Administration based on data from various published studies. Canada and Mexico plays from ARI.
 Updated: May 9, 2011

Where Are Liquids Pipelines Located?



Source: American Energy Mapping (AEM) 2013

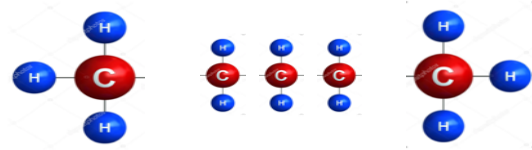
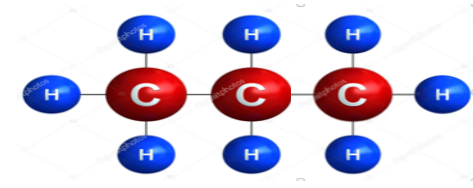
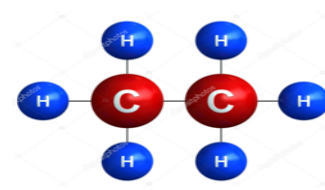
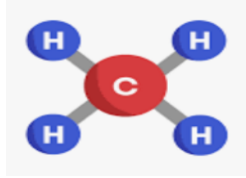


Major Canadian and U.S. Crude Oil Pipelines and Refineries

- Enbridge Pipelines
- Enbridge Pipelines (Proposed/Under Construction)
- Enbridge Pipelines (Diluent)
- Enbridge Pipelines (Joint Ownership)
- Enbridge Pipelines (Joint Ownership) Proposed/Under Construction
- Other Pipelines
- Other Pipelines (Proposed/Under Construction)
- Enbridge Offshore Loading Terminal (Joint Ownership)
- Offshore Platform
- Enbridge Rail Terminal (Joint Ownership)
- Capacity of Refineries are in Thousands of Barrels per Day

Coast to Coast Retail Network





Methane

Ethane

Propane

Natural Gas Liquids / Condensates

Gasoline

Light Crude to Tar Sands

isooctane or 2,2,4-trimethylpentane

$$\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\ | \quad | \\ \text{CH}_3\text{C}-\text{CH}_2\text{CHCH}_3 \\ | \\ \text{CH}_3 \end{array}$$

octane number = 100

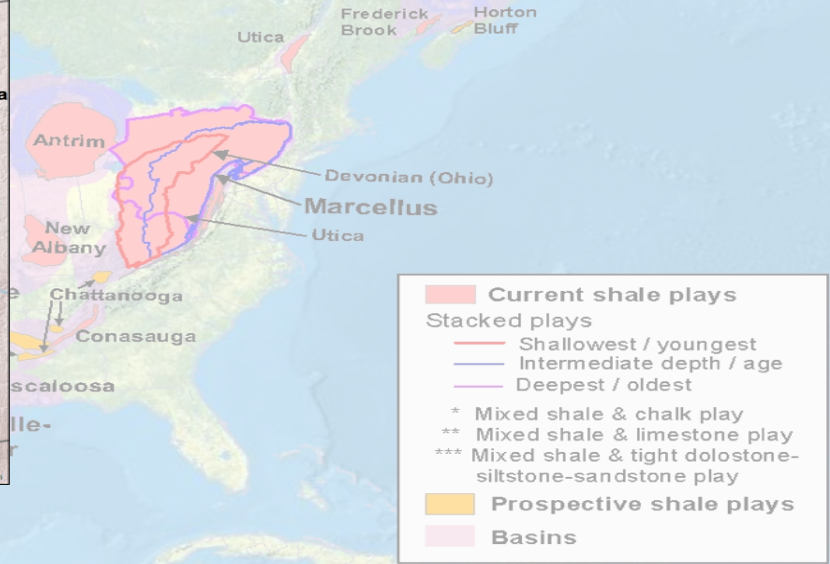
heptane

$$\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$$

octane number = 0

C. Ophardt, c. 2003

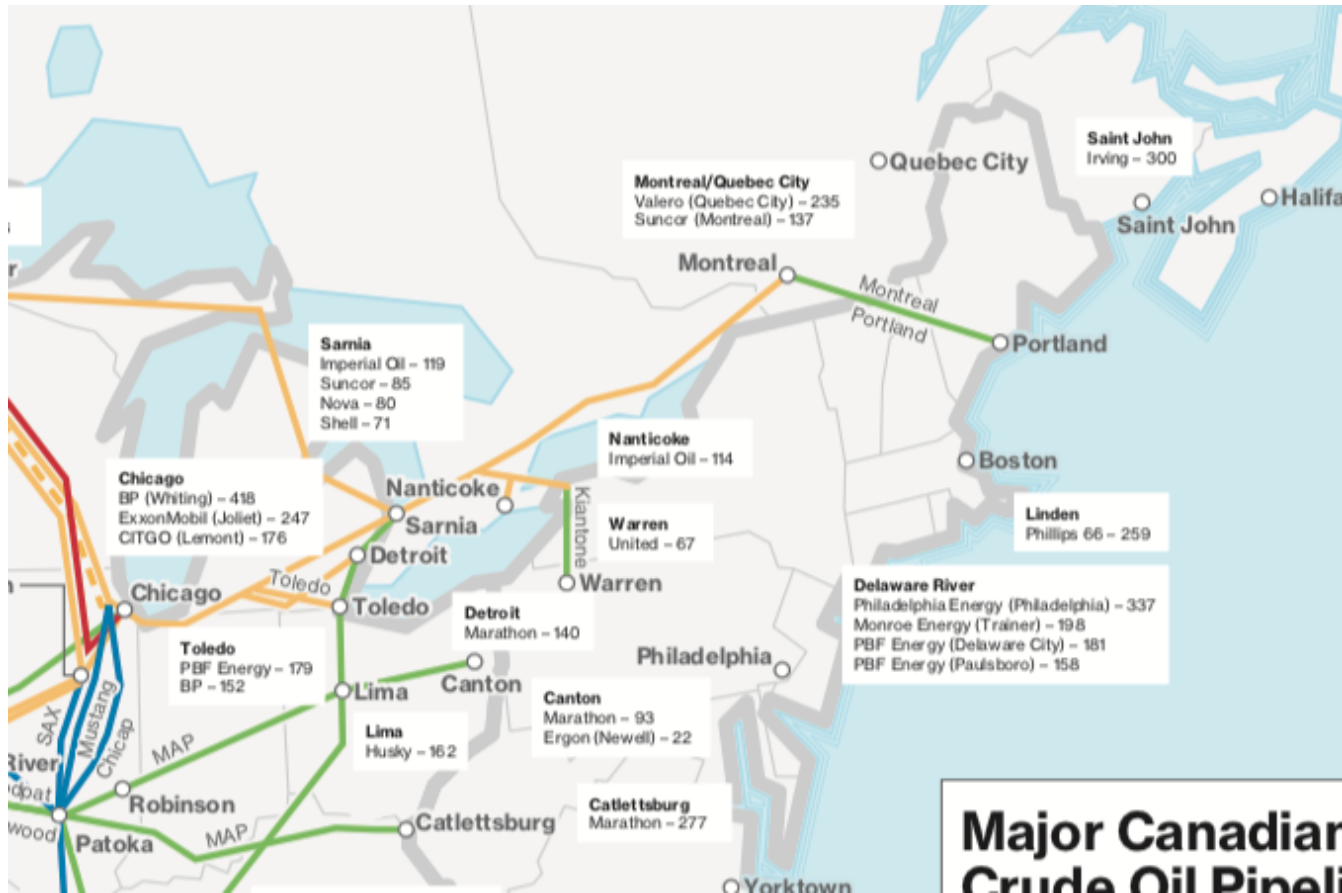
Utopia Pipeline





Major Canadian and U.S. Crude Oil Pipelines and Refineries

- Enbridge Pipelines
- Enbridge Pipelines (Proposed/Under Construction)
- Enbridge Pipelines (Diluent)
- Enbridge Pipelines (Joint Ownership)
- Enbridge Pipelines (Joint Ownership) Proposed/Under Construction
- Other Pipelines
- Other Pipelines (Proposed/Under Construction)
- Enbridge Offshore Loading Terminal (Joint Ownership)
- Offshore Platform
- Enbridge Rail Terminal (Joint Ownership)
- Capacity of Refineries are in Thousands of Barrels per Day



**Major Canadian
Crude Oil Pipeli**

We're ready to build the Straits tunnel.

When it comes to the importance of protecting the Great Lakes and the safety of Line 5, Enbridge is fully aligned with Governor Whitmer.

In a recent, non-external and independent review of the alternatives that the tunnel provides the best protection to the Straits of Mackinac while providing Michigan with the vital energy residents, industry and businesses rely on every single day.

We appreciate Michigan residents want extra assurances. That's why we're committed to building and operating a concrete-walled tunnel 100 feet below the lakebed to reduce the risk to the Straits to virtually zero.

What we still need to reach agreement on is the best way to make this tunnel happen.

We continue to work to reach a solution for all of Michigan. We remain committed to collaborating with the State, but its insistence on shutting down the line in two years – ahead of the 2024 tunnel completion – forced us to seek a court ruling on the validity of previous agreements with the State on the tunnel. We've offered to take even further action to protect the Straits while the tunnel is being built. We hope the State will welcome these additional measures.

The Governor has said Enbridge is only concerned about the bottom line, yet we have committed to spend \$500 million on the project – \$40 million of that this year to ensure it's built as quickly as possible – even though independent studies have confirmed the current crossing is safe. And instead of moving as quickly as possible, the Administration is slowing down progress. We can build a tunnel by 2024 – let's work together on a path forward.

Shutting down Line 5 before the tunnel is in place would lead to serious disruptions to the State's energy supply.

hitting Michigan residents' pocketbooks, the State's competitiveness, and leading to job losses.

According to the U.S. Department of Transportation, pipelines are the safest way to move energy. It would take 2,150 tanker trucks – 90 leaving the terminal every hour, 24 hours a day – or more than 800 railcars each day, to deliver the amount of energy carried on Line 5. Is that what we want for Michiganders?

For 65 years, Michigan has counted on the energy Enbridge safely transports.

We're proud to be part of the fabric of Michigan, and proud of the role we play in safely delivering the energy its residents, industry and businesses depend on. Line 5 provides 55% of the propane used in the State, as well as the products that are turned into the gasoline, diesel and jet fuel that keeps Michigan and its economy moving.

The Great Lakes are important to Michigan, and we all want to protect the Straits of Mackinac. That's why we've invested so heavily in keeping Line 5 safe and secure.

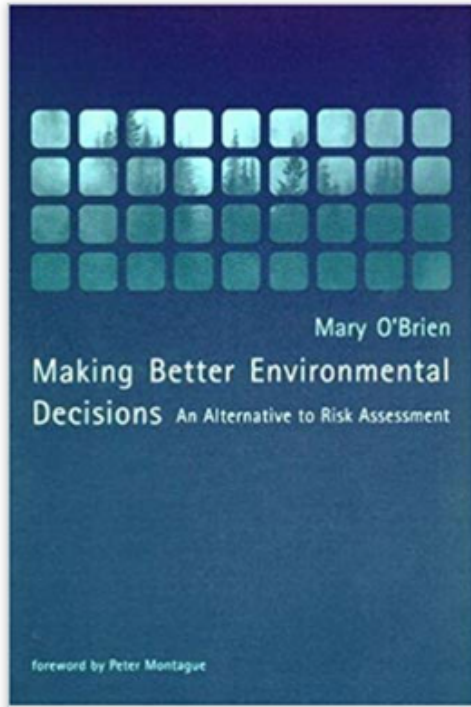
A dedicated team monitors Line 5 every minute of every day. The Straits crossing has a host of additional safety measures – extra heavy-wall thickness pipe, cathodic protection to prevent corrosion, support anchors and shut-off valves on either side of the Straits, and we operate the lines at less than 25% of design pressure capability.

The people of Michigan who rely every day on the energy we provide need solutions that work. With agreement from the Governor, we can build the tunnel to replace the existing lines which will protect the Straits, while the energy Michigan relies on can continue to be transported safely and reliably.

It's clear from external and independent review of the alternatives that the tunnel provides the best protection to the Straits of Mackinac while providing Michigan with the vital energy residents, industry and businesses rely on every single day.

According to the U.S. Department of Transportation, pipelines are the safest way to move energy. It would take 2,150 tanker trucks – 90 leaving the terminal every hour, 24 hours a day – or more than 800 railcars each day, to deliver the amount of energy carried on Line 5. Is that what we want for Michiganders?





How Agencies and Companies can manipulate a Risk Assessment (page 57)

- Downplay estimates of hazard (consequences)
- Downplay estimates of exposure (probabilities)

Fundamental Principles (pages 6-15)

It is not acceptable to harm people when there are reasonable alternatives.

It is not acceptable to harm non-humans when there are reasonable alternatives.

Nobody is able to define for someone else what damage is “acceptable.”

Most environmental behavior has environmental consequences for the public, so it isn't actually private.

We humans inevitably cause environmental damage; the only way we will cause the least damage is to consider options for causing the least damage and restoring environmental health when possible.

It is difficult for many people to think of alternatives to business as usual. Also it is in the interests of some people (and some corporations) to pretend there are no better ways of behaving, so that they need not change their current behaviors.

It is difficult to change many of our habits and behaviors

We have not choice but to gain practice in changing our environmentally bad habits everywhere.

One of the most essential prerequisites for political change is understanding that there are alternatives.

Changes in damaging behaviors and habits of other people (and corporations) must be accomplished through political action.

Economy



Eco



Questions?

“Thousands have lived without love,
not one without water.”

-W. H. Auden

www.flowforwater.org



NO STRAITS PIPELINE