This is an abridged version of the report *Liquid Pipelines: Extreme Energy’s threat to the Great Lakes and the St. Lawrence River*.

The full version can be read at canadians.org/greatlakes

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Extreme Energy: The threat of tar sands supertankers on the Great Lakes and the St. Lawrence River

Events are moving rapidly to establish the Great Lakes and the St. Lawrence River as a carbon corridor for a growing North American energy industry. This poses the greatest threat yet to these waters.

The newest way to transport bitumen, fracked oil, fracking wastewater and nuclear waste is by water. Plans are in the works to transport these forms of extreme energy on barges and tankers across the Great Lakes to refineries in the United States or down the St. Lawrence River to refineries there for export.
Introduction

The Great Lakes of North America form the largest group of freshwater lakes in the world, holding more than 20 per cent of the world’s surface freshwater and 95 per cent of North America’s. Add to this the groundwater underlying and feeding the Great Lakes or its tributary streams and lakes, and the percentage is closer to 25 and 97 per cent respectively. Two Canadian provinces – Ontario and Quebec – and eight U.S. states: Minnesota, Wisconsin, Michigan, Illinois, Indiana, Ohio, Pennsylvania and New York, border the Lakes and the St. Lawrence River, which is their primary flow outlet to the Atlantic Ocean. As well, there are many indigenous territories with governance and treaty rights. The Great Lakes have a unique biodiversity and are home to more than 3,500 species of plants and animals.

The Great Lakes were formed more than 20,000 years ago when the last glacier continental ice sheet retreated. The Great Lakes provide life and livelihood to more than 40 million people and are the economic centre at the heart of the continent.

The Great Lakes are in serious trouble. Multipoint pollution, climate change, over-extraction, eutrophication, invasive species and wetland loss are all taking a terrible toll on the watershed that provides life to so many people and species. Once thought to be immune to the water crisis that threatens other parts of the world, the Great Lakes are a source of growing concern as residents watch their shorelines recede, their beaches close and their fisheries decline.

Extreme energy

There is a newer threat to the Great Lakes that has not received anywhere near the attention or concern it deserves: the increased production and transport of unconventional or “extreme” energy sources on, under or around the Great Lakes.

According to the Extreme Energy Initiative of the University of London in England, “extreme energy” is a group of energy extraction methods that grows more intensive over time, and that is strongly correlated with damage to both the environment and society. Examples of extreme energy extraction include tar sands open-pit mining, mountain top removal, deep water and Arctic drilling, and hydraulic fracturing (fracking) for shale gas and coal bed methane.

Nearly 4 million tons of oil and petroleum products are shipped every year to and from Great Lakes ports in the U.S.

Transporting energy over the Great Lakes is not new. Nearly 4 million tons of oil and petroleum products are shipped every year to and from Great Lakes ports in the U.S. and more than 19 million metric tonnes to and from Canadian ports in the Great Lakes and the St. Lawrence River.
Dangerous as these more conventional shipments may be to the Great Lakes, the greater threat is from shipments and spills of extreme forms of energy. Tar sands are a type of petroleum deposit containing sand, clay and water saturated with a dense form of petroleum called bitumen. With the consistency of molasses, to be useable the oil has to be separated from the mixture in a process that uses and destroys vast quantities of water – three to five barrels worth (or as much as 800 litres) – for every barrel of extracted oil.

Tar sands bitumen is heavy. To transport it by pipeline, chemical diluents are added. Unlike conventional crude, this diluted bitumen – or “dilbit” as it is commonly known – floats briefly in water, but then sinks as the light components evaporate, leaving the heavy components behind. Consequently, dilbit is substantially more difficult to clean up and poses a greater danger to watersheds than conventional crude.

On July 25, 2010 an Enbridge pipeline ruptured in Michigan and spilled almost 4 million litres of chemical-laced Alberta tar sands bitumen into the Kalamazoo River and surrounding wetlands. Damage to the river, the estuaries and the aquatic life was widespread and a number of families had to be evacuated. The clean-up expense has topped $1 billion and the damage is still widespread.¹

According to the World Energy Council, more than 70 per cent of known global bitumen reserves are in Canada, most in northern Alberta. The deposits around Fort McMurray, Peace River and Cold Lake – the largest in the world – lie under 141,000 square kilometres of boreal forest (an area bigger than Scotland) and contain about 1.7 trillion barrels of bitumen, almost 2 million of which are processed every day. The governments of Canada and Alberta and the big energy companies have a $40 billion tar sands expansion plan. If they are successful, the operation will be producing about 5 million barrels (800 million litres) of the dirtiest oil on Earth every day and will require an additional 14,000 kilometres of pipeline to move it.
Marine shipping of extreme energy

More recently, tar sands and fracked oil companies have started transporting product in ships. Using tankers to ship tar sands crude is considerably cheaper than shipping it by rail. Officials at Calumet LLC, owners of an oil refinery in Superior, Wisconsin, estimate that transport by ship is about one-third the cost of rail transport. An estimated 40,000 barrels of heavy Canadian crude a day is loaded from pipelines onto barges in Wood Rivers, Illinois where it travels down the Mississippi River to the Marathon Petroleum Corporation's refinery in Garyville, Louisiana. There are now plans to expand this operation.

Between 2011 and 2012, the amount of oil from the fracking fields of North Dakota and the tar sands of Alberta delivered to U.S. refineries by barge increased 53 per cent. Enbridge is planning to carry North Dakota fracked oil by rail to Eddystone, Pennsylvania, near Philadelphia, where it will be transferred onto barges and shipped down the Delaware River to refineries. The American Petroleum Institute predicts that between 2014 and 2025, capital investment in marine transport of liquefied petroleum gas and natural gas liquids will increase by 32 per cent, liquid natural gas by 36 per cent, and crude oil by 73 per cent.

More than 70 per cent of all tar sands crude refined in the U.S. is processed in the 26 refineries located in the American Midwest, 19 of them in the Great Lakes states, and nine located right on or very near the Great Lakes. The Flint Hills refinery in Pine Bend Minnesota, owned by billionaire right-wing advocates Charles and David Koch, refines more tar sands crude than any other refinery in the U.S. Almost 80 per cent of the fuel purchased at gas stations in Minnesota now comes from the Alberta tar sands.

In addition, several refineries in Sarnia, Ontario, located right on Lake Huron, refine tar sands crude, piped in from refineries in Superior, Wisconsin and Chicago. Suncor Energy Inc. and Valero Energy Corp. are now importing U.S. Gulf Coast crude by tanker from Texas and Louisiana for their Quebec refineries. While at the moment, this oil is light crude, the Suncor plant is reviving plans to add a heavy oil-processing unit to its Montreal plant, which would allow it to process tar sands bitumen. This network of Great Lakes refineries situates the watershed as an ideal route for tar sands transport.

Because of this network of refineries on or near the Great Lakes, there is intense and growing pressure to increase the flow of tar sands bitumen through existing and new pipelines and to transport it by barge and ship across the watershed.

As the Alliance for the Great Lakes reports, proposals are in the works that could make the Great Lakes the next frontier for moving tar sands crude to this vast network of local refineries. This, in turn, will open the door to shipping large volumes of this crude on the waters themselves. “With more tar sands crude coming to Great Lakes refineries, the pressure is mounting to find economical ways to move it out. Shipping it across the Great Lakes is a strong possibility.” The Chicago-based conservation and education organization, which has been devoted to protecting the Great Lakes for more than 40 years, warns the Great Lakes are poised to become a “thoroughfare” for tar sands crude.

Writing in Maritime Executive, a journal for leaders in the shipping industry, Canadian transportation journalist Harvey Valentine speculates that one day, a future water connection between Lake Superior and Lake Winnipeg will transport Alberta tar sands oil to the American inland waterway system at Chicago and Cleveland to move to markets in the U.S. and other markets via the St. Lawrence River.
Superior, Wisconsin’s proposal to ship tar sands crude

One company is already making plans to ship large quantities of bitumen across the lakes in barges. Calumet Specialty is proposing to build a $25 million crude oil transfer dock where bitumen from Canada, and Bakken crude from the fracking fields of North Dakota, will be loaded onto tankers and barges and moved across the Great Lakes to refineries in Ontario, Michigan, Ohio and the U.S. East Coast. The facility would be able to load one oil tanker or barge every four days and ship up to 13 million barrels (almost 2 billion litres) of oil every year. The dilbit – the most toxic oil on Earth – would not be refined before it is sent out across the waters of the Great Lakes.

In January 2014, after holding public hearings, and in reaction to the strong public opinion against this project, the Wisconsin Department of Natural Resources turned down a permit application from Elkhorn Industries to make repairs to the harbour pier that were needed before the proposed oil terminal could be built. While community and environmental groups expressed some relief at this decision, the company made it clear that it still plans to move ahead and dismissed the decision as applying only to repairs to the dock, not to the terminal itself.

Community and environmental groups remain resolved to protect the Great Lakes’ waters from oil shipments.
Suncor’s supertankers on the St. Lawrence River

In September 2014, Suncor became the first company to ship a supertanker of bitumen on the St. Lawrence River. On September 24, the Minerva-Gloria left the port of Sorel-Tracey in Quebec and carried an estimated 700,000 barrels of bitumen to Sardinia, Italy. A second tanker, the Genmar Daphne, left in October, transporting a load of Alberta bitumen to the Gulf of Mexico. Every day, energy giant Suncor transports bitumen via CN Rail from Alberta to a storage space operated by Kildair Services in Sorel-Tracy, Quebec. Suncor had plans to ship 20 to 30 vessels like this each year along the St. Lawrence River; however these plans were put on hold after the price of oil fell to a point that made the shipments too expensive.

Nearby communities remain concerned. Dozens of municipalities along the river have said they are unprepared should there be a tanker spill and a committee of experts has found that only 5-20 per cent of an oil spill could be recovered from the water.¹⁰
Governments unprepared for heavy oil spills

The Alliance for the Great Lakes states that the Great Lakes are the source of drinking water for more than 40 million people, and that in a clash between oil and water, water and the environment will always be the loser. The Alliance also points out that even the safest, best maintained vessels risk spills when loading cargo and sailing on the open water. Tar sands crude is more difficult to clean up than conventional oil because, as noted earlier in this report, it sinks to the bottom of water.

The Alliance reports that the U.S. Coast Guard acknowledges that current methods for finding and recovering submerged oils are inadequate and that their “worst case” discharge scenario is based on a spill of conventional oil. Additionally, the Alliance points to the fact that Great Lakes ports were not designed to load and ship heavy tar sands crude. Also a concern to the Alliance is the fact that the U.S. Environmental Protection Agency (EPA) is not able to fulfil its responsibility to inspect and monitor facilities that have a reasonable chance of a discharge into navigable waters – there are about 64,000 of them. The last survey of petroleum-refining facilities was done in 1995 and at that time, only about 39 per cent met EPA criteria. Obviously no one was looking at tar sands crude back then.

Several reports in Canada cite similar flaws in our country’s ability to deal with major oil spills. In a strongly worded 2010 audit, Environment and Sustainable Development Commissioner Scott Vaughn said the Canadian government is not ready to handle a major oil spill, and that the Canadian Coast Guard had not done a national risk assessment of oil spills from ships since 2000, before tar sands oil started to be moved in bulk across the continent. He warned that the volume of hazardous and noxious substances being transported in Canadian waters is growing quickly, but said that the Canadian government has no plan to deal with the consequences of accidents.11

In December 2013, a panel set up to examine preparedness for tanker traffic carrying oil off the West Coast found that Canada’s oil spill response measures lack federal leadership and is not prepared for disasters in high-risk areas.12
Banning extreme energy on the Great Lakes

It is crucial that the people of the Great Lakes and the St. Lawrence River strongly oppose the plans to have their watershed used as a conduit for these energy sources. To that end, we need to create a united movement to assert our rights and responsibility to protect the watershed while there is still time. This movement should have very clear goals and demands.

To protect the Great Lakes and the St. Lawrence River we must:

» Ban all transport of tar sands bitumen on, under and near the Great Lakes and St. Lawrence River.

» Ban all transport of fracked oil and gas on, under and near the Great Lakes and St. Lawrence River.

» Ban all transport of fracking wastewater on, under and near the Great Lakes and the St. Lawrence River.

» Ban all transport of nuclear waste on, under and near the Great Lakes and St. Lawrence River. This includes marine transport of spent fuel rods, burial of nuclear waste in deep geologic deposits, and truck transports of liquid and solid nuclear waste.

» Stop the Energy East Pipeline.

» Oppose the planned capacity increase of pipelines moving bitumen and fracked oil, including Line 67, Line 6B and Line 9.

» Shut down Line 5 altogether.

» Support the phase-out of bitumen and fracked oil currently carried in pipelines running near the Great Lakes and St. Lawrence River.

» Ban oil and gas drilling in the Great Lakes Basin entirely.

We also need to adopt tough Basin-wide restrictions on chemical, toxic and sewage pollution with serious enforcement standards and mechanisms, and adopt the precautionary principle in all federal, state and provincial laws pertaining to the Great Lakes.

It is also crucial to remove any reference to water as a service, good or investment in any trade or investment agreement. As well, corporations should have no right at all to stop domestic or international protection of water, and Canada and the United States should join the growing list of countries that are refusing to negotiate any trade agreement that contains an investor-state clause.

We must also establish a process for citizens and communities living on the watershed to sue corporations and governments that knowingly pollute local water sources as a violation of their human right to clean water.
Promoting a sustainable energy future

The people of the Great Lakes and the St. Lawrence River must also support existing campaigns to end our dependency on extreme energy while we transform to a sustainable energy future based on conservation, infrastructure retrofitting, and renewable energies such as wind and solar.

Communities must be involved in the decision making process in sustainable energy strategies and policies. Indigenous communities must have the opportunity to give their free, prior and informed consent on energy projects on their traditional territories. A true Commons – a natural resource such as water that is shared by all and the responsibility of all – is based on a co-management model, and requires true collaboration between communities and government. Regulatory agencies must have the ability to implement public recommendations. Environmental implications need to be fully considered and addressed before proceeding with any major project, and power generation must remain under community management and control.

To truly protect the Great Lakes and St. Lawrence River, we need to promote a highly effective governing principle called the Public Trust Doctrine. Public trust law underpins in law the universal notion that certain natural resources – especially air, water and oceans – are central to our very existence and must be considered the property of the public. Under public trust law, all competing uses of Great Lakes waters should have to pass a test, not just of fairness of access, but also that they will not draw down the future capacity of the watershed and that they respect indigenous rights to the land.

Governments must be persuaded to invest in energy conservation, energy efficiency and alternative energy sources. The climate crisis makes a just transition off of fossil fuels – as quickly as possible – an absolutely necessity. This will not happen, however, if all the resources and political support continue to flow to the fossil fuel industry.

An international movement has developed to oppose the expansion of the tar sands in northern Alberta. The Council of Canadians stands in solidarity with First Nation communities in the region whose rights have been violated in the rush to develop this extreme energy source. We also recognize the necessity for a plan to meet our energy needs be based on both the principles of energy security and ecological sustainability.
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