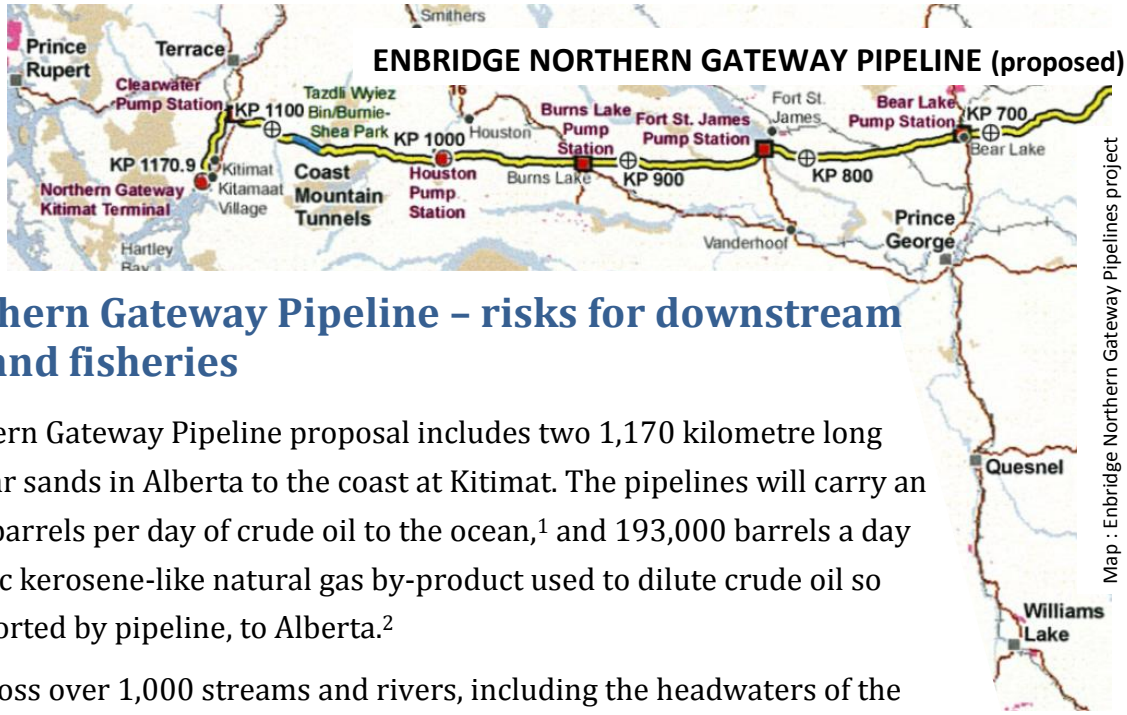

Map : Enbridge Northern Gateway Pipelines project information package for National Energy Board.

Enbridge Northern Gateway Pipeline – risks for downstream communities and fisheries

The Enbridge Northern Gateway Pipeline proposal includes two 1,170 kilometre long pipelines from the tar sands in Alberta to the coast at Kitimat. The pipelines will carry an average of 525,000 barrels per day of crude oil to the ocean,[1] and 193,000 barrels a day of condensate, a toxic kerosene-like natural gas by-product used to dilute crude oil so that it can be transported by pipeline, to Alberta.[2]

The pipelines will cross over 1,000 streams and rivers, including the headwaters of the Fraser River (crossing the Stuart, Endako and Salmon Rivers) and the headwaters of the Skeena River (crossing the Morice and Bulkley watersheds). Each of these stream crossings will require two pipeline crossings, as the project consists of twinned pipelines. The project has the potential to seriously affect First Nations downstream of these crossings. The toxic effects of a spill could be felt for hundreds of kilometres, stretching down the entire length of the Fraser River to the sea.[3]

Impact on fisheries

Oil and condensate spills and leaks at stream crossings can be devastating for rivers and streams and ecosystems. Areas downstream of a spill are at significant risk of short and long term negative impacts, such as the death or disease of fish, aquatic insects, birds and other wildlife, and contamination of water supplies.

Construction risks:

Construction and operation can impact fish through the sediment that is released into streams and rivers during road building, road washouts and the construction of water crossings. Certain concentrations of sediment can kill fish directly.[4] Sediments can also increase the amount of stress that fish experience, disrupting their feeding, growth, social

Oil spill response in river at Enbridge oil spill, Kalamazoo, Michigan, July 2010
Photo: Mic Stolz, used under creative commons license

1 Enbridge Information Brochure, January 2009, accessed at www.northerngateway.ca/files/NGP-Brochure.pdf.
2 *Ibid*.
3 Correspondence with Professor Jack Stanford, Professor of Ecology, Director of Flathead Lake Biological Station, University of Montana, May 13, 2009.
4 I.K. Birtwell, 1999. Effects of sediment on fish and their habitat. Pacific Scientific Advice Review Committee (PSARC) Research Document HAB-99-1. Fisheries and Oceans Canada, Canadian Stock Assessment Secretariat, Ottawa p.34.

behaviour and susceptibility to disease. Sediments may also impact fish eggs and affect the survival of juvenile fish, and make water cloudy, interfering with light penetration, reducing the number of plants, and decreasing the habitat for insects that fish rely on for food. Road building practices by industry users can threaten salmon spawning grounds with siltation due to slumping of stream banks.[5]

Oil and condensate spill risks: Once the pipelines are operational, communities downstream of the pipeline crossings will be at risk of spills. An oil spill on a river is impossible to fully contain or to clean up. The oil in the pipeline will be under high pressure, meaning that a leak or rupture has the potential to expel large volumes of oil before the flow is cut off. On a river, the resulting surface oil slick could quickly travel downstream, and be many kilometres in length. In cold rivers, like the ones the Northern BC and Alberta, the oil can bead and separate, making it more difficult to retrieve.[6] Toxins from the oil – including the condensate mixed in with it – can mix with the water and pollute a potentially wider area than the oil itself. River water is likely to take toxins and contaminants with it as it penetrates into the ground, mixing with ground water contained in aquifers and gravel beneath the river's flood plain.[7] Condensate spilling from its own pipeline into the river, even without an oil leak, is acutely toxic and poses a risk to water and fish. Condensate contains a number of chemicals known to cause cancer, and many other severe illnesses.[8]

An oil spill into the Fraser or Skeena river systems could have a devastating impact on fish and fishing rights. Toxins from oil can have impacts on salmon eggs, fry and smolt even at very low concentrations, affecting a fish's heart and circulatory system during the fish's embryonic stage.[9] Oil on the banks can eliminate river edge habitat for birds and mammals. Salmon populations in these river systems are already in danger and an oil spill could kill them forever.

Even after a cleanup, oil can linger in the environment for many years before it breaks down, continuing to affect fish, wildlife, and humans. Twenty years after the massive oil spill from the *Exxon Valdez*, Alaska's coast still has high concentrations of oil on the beaches and in the ground, and in some places, is still as toxic today as it was a few weeks after the spill.[10]

In addition to downstream impacts, oil can be transported upstream of a spill by returning fish contaminated as they swim through oiled waters, affecting eggs and smolt in spawning areas.[11] Fish travelling through a spill zone may be contaminated as they ingest oiled particles and prey.[12] The damage to fish and their habitat downstream of a spill also naturally has an impact on the availability of fish upstream.

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5 *Carrier Sekani Tribal Council Aboriginal Interests & Use Study on the Enbridge Gateway Pipeline*, 2006, p.22. accessed at www.cstc.bc.ca/cstc/67/enbridge.
6 BC Ministry of Environment, "Ministry Working to Contain Oil Spill Near Chetwynd" (Aug 1, 2000), accessed at www2.news.gov.bc.ca/archive/pre2001/2000/august/ib149.asp.
7 J.A. Stanford *et al.* "The shifting habitat mosaic of river ecosystems" (2005) 29 Proceedings of the International Association of Theoretical and Applied Limnology 123 at p. 134.
8 Material safety data sheet for natural gas condensate, prepared by Piedmont Natural Gas, available at http://www.piedmontng.com/residential/aboutNaturalGasSection/uploadedGasLines/MaterialSafetyDatasheetDistillateVer020806.pdf
9 Ecotrust. (2005). *Habitat pressures and risk areas – #1 The Oil Pipeline*, Accessed at www.inforain.org/copperriver/content/pages/background/assessment_1.htm
10 Exxon Valdez Oil Spill Trustee Council, *2009 Status Report – 20th anniversary report*, at p. 10, accessed at www.evostc.state.ak.us.
11 Ecotrust, cited above.
12 Exxon Valdez Oil Spill Trustee Council, cited above at p. 5.

The oil spill risk to downstream communities is real

Enbridge oil spill, Kalamazoo, Michigan, July 2010
Photo: Sierra Club Michigan, used under creative commons license

We have already seen pipeline disasters in British Columbia. In August 2000, a Pembina Pipeline Corporation oil pipeline ruptured and spilled roughly one million litres of crude oil into the Pine River, which flows into the Peace River in northeastern British Columbia. The spill was reported to be 21 kilometres long.[13] The spill killed up to 20,000 fish, and a study five years later on whether the fishery had recovered to its pre-spill potential was inconclusive.[14] Many birds and beavers also died.[15] Although the spill occurred 110 km upstream of the town of Chetwynd, the town's water supply was contaminated.[16] At the time of the spill, the river was the town's only municipal source of drinking water, but it had to stop using river water for a number of years. Residents also had to discontinue the use of many groundwater wells near the river.[17] While the Pembina Pipeline Corporation spent over $30 million dollars to clean up the spill – the most expensive spill in Canadian history – 80,000 litres remain in the environment.[18] In 2001, the year after the spill, the Pine River was identified as the most endangered river in BC.[19]

The potential for significant environmental harm from pipelines is high. Federal and provincial regulations and law have failed to prevent pipeline spills and leaks in Canada: Between 1990 and 2005 an average of 803 pipeline failures occurred every year in Alberta.[20] Another study found that pipeline spills outnumber spills from all other sources combined, and that pipelines and fixed facilities are responsible for more than 2/3 of oil split into water or onto land.[21] Enbridge reports that, between 2003 and 2007, its pipelines had an average of 67 oil spills each year - "despite our best efforts to prevent them."[22] For example, in 2007, an Enbridge pipeline leaked and released 990,000 litres of crude oil into a wetland near Glenavon, Saskatchewan before Enbridge could stop the flow.[23] On July 26th, 2010 an Enbridge pipeline ruptured and dumped as much as 19 500 barrels

[13] Peace River Block Daily News, "Oil spill threatens Chetwynd" (August 2, 2000).
[14] H.Goldberg, *Pine River: 2005 Assessment –Residual Oil Survey and Snorkel Survey*, submitted to District of Chetwynd, West Moberly First Nations and Saulteau First Nation.
[15] Pembina Institute, *Who Protects the Land? Compliance Issues for Oil & Gas in British Columbia*.
[16] D.J.F. McCubbing *et al.* (2006). "Assessment of the CN sodium hydroxide spill August 5th, 2005 on the fish populations of the Cheakamus River" BC Ministry of the Environment, at p. 6.
[17] BC Ministry of the Environment, Environmental Emergency Management Program Incident Report on the Pine River Oil Spill, accessed at http://www.env.gov.bc.ca/eemp/incidents/pembina_00.htm.
[18] *Ibid*.
[19] McCubbing, cited above, at p. 6.
[20] Alberta Utilities and Energy Board. 2007. *Pipeline Performance in Alberta, 1990-2005*.
[21] United Nations Environment Programme (www.unep.org); International Tanker Owners Pollution Federation (www.itopg.com); US Environmental Protection Agency (www.epa.org).
[22] Enbridge Inc. *2008 Corporate Social Responsibility Report*. Accessed at http://www.enbridge.com/csr2008/environmental/en23.php.
[23] *Ibid*.

of crude oil into the Kalamazoo river watershed in Western Michigan. The cause of the breach is still under investigation but regulators suspect that an alarm warned Enbridge of low pressure in the pipe 19 hours before they reported the leak to the Federal government.[24] Enbridge's own inspections of the line, which carries over 190 000 barrels of oil daily between Ontario and Indiana, have found more than 200 problems with the pipe that had not been fixed as of mid-July.[25] US Regulators rejected Enbridge's initial proposal to restart the pipeline because they felt the company had not taken adequate steps to evaluate whether immediate threats were present elsewhere on the line Enbridge's record in the US is far from spotless. The company has faced dozens of regulatory violations in the past decade throughout the Great Lakes region and elsewhere in the U.S.[26]

As Enbridge's own experience shows, and the recent spill in Michigan brings into sharp relief, promises of advanced technology can't prevent spills from happening, and can't protect the environment and livelihood of downstream communities in the event of a spill.

Federal Crown must consult with downstream First Nations

For the reasons outlined above, the construction and operation of the pipeline has the potential to negatively affect the Aboriginal Title and Rights of nations downstream. In these circumstances, the Crown's constitutional duty to consult and accommodate is engaged. The federal Crown has unilaterally developed a consultation approach for the Enbridge Gateway Pipeline that relies heavily on the proponent and standard 'public' engagement processes under the *Canadian Environmental Assessment Act* and the *National Energy Board Act*, and does not acknowledge potential impacts on nations downstream of the pipeline.

To contact the federal Crown, and remind federal officials of their constitutional duty to work with First Nations to design an appropriate review and decision-making process for this project that includes impacts on downstream nations, write to:

Marie-France Therrien Panel Manager
Canadian Environmental Assessment Agency
160 Elgin Street, 22nd floor
Ottawa ON K1A 0H3 Fax: **(613) 957-0941**
Email: Marie-France.Therrien@ceaa-acee.gc.ca

West Coast Environmental Law
200-2006 West 10th Ave, Vancouver, BC V6J 2B3
Tel: 604-684-7378 / 1 800 330-WCEL
admin@wcel.org / www.wcel.org

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24 Steve Neavling and Tina Lam "Feds: Enbridge aware of potential issue day before leak reported" Detroit Free Press (August 2nd, 2010).
25 Tina Lam, "Feds won't let Enbridge restart pipe" The Detroit Free Press (11 August 2010), online: <http://www.freep.com/article/20100811/NEWS06/100811030/1008/Feds-wont-let-Enbridge-restart-pipe> .
26 Tim Martin and David Runk "Past problems for company at heart of oil spill" (July 29th, 2010) Associated Press.