

Discussion Paper on Improving Marine Safety and the Formalization of a Moratorium in Northern BC

Purpose

The Minister of Transport, the Honorable Marc Garneau, has been mandated to improve marine safety on all coasts and to formalize a crude oil tanker moratorium on British Columbia's (BC) North Coast.

Transport Canada is seeking your views on questions related to marine safety to identify potential actions that would improve Canada's current system and be considered in shaping the potential parameters of a crude oil tanker moratorium on BC's North Coast.

Linkage to other Transport Canada Priorities

Improving marine safety and formalizing a crude oil tanker moratorium are part of developing a long-term agenda for marine transportation in Canada. The objective of developing this agenda is to identify actions that would support our marine transportation system and encourage long-term economic growth in a way that does not harm our marine or coastal environments. To facilitate engagement on this agenda, three themes were identified so that issues with similar trends, drivers and existing government policies will be considered in tandem. The three themes are:

1. A Ports System Optimized to Support Trade
2. A Competitive Marine Transportation Sector
3. Safe and Secure Marine Transportation

The views sought in this paper will support the third theme, Safe and Secure Marine Transportation. Engagement on the first two themes is proceeding on a separate track over summer 2016. Those interested in providing their views on the ports system or a competitive marine transportation sector are welcome to submit ideas via <http://www.tc.gc.ca/eng/future-transportation-canada-678.html>.

Shipping in Canada

The marine sector is critical to the Canadian economy. Together, Canada's domestic fleet and foreign vessels transported over \$205 billion in international trade in goods in 2015. Canadian carriers are most active in domestic commercial activities (carrying an average of 98% of domestic tonnage) as well as in trans-border trade between Canada and the United States. However, to move goods internationally, Canadian shippers rely on foreign-based carriers. The most important commodities shipped by water are crude petroleum, gasoline and fuel, grain and agricultural products. Shipping volumes, cargo and dynamics vary considerably between coasts.

West Coast

The majority of marine traffic on the West Coast is linked to foreign trade, with the Port of Vancouver and Port of Prince Rupert being the two main gateways for international trade. Vancouver is Canada's busiest port, and handled 138 million tonnes of cargo (primarily coal, grain, wood products and petroleum products) in 2015. About 3% of Canada's crude oil is shipped from Vancouver. On average, there were about 18,500 domestic and international vessels arriving at West Coast ports, with tankers accounting for about 245 of these vessels according to the most recent data (2011). A federal moratorium on oil and natural gas exploration and development off the coast of BC has been in place since 1972. A voluntary Tanker Exclusion Zone (TEZ) is in place off of BC's coast that applies to loaded oil tankers servicing the Trans-Alaska Pipeline System between Valdez, Alaska and the continental United States (US) (for more detail on the TEZ, see page 6 of this paper).

There are currently no crude oil tankers travelling to or from northern BC ports. However, a variety of vessels move oil in northern BC waters for community and industry re-supply. Of approximately 480 calls at northern BC ports in 2014, some 15 vessels were carrying heavy petroleum products as cargo (e.g., slack wax: a mixture of liquid wax and oil, and products related to aluminum production including liquid pitch: liquid tar and/or bitumen). In addition, most international vessels carry bunker fuel, a type of heavy oil, for their propulsion and/or operation.

Great Lakes and St. Lawrence

Marine operators in the Great Lakes/St. Lawrence area are primarily involved in transporting dry bulk (e.g., grain, coal, iron ore) and liquid bulk cargo (e.g., petroleum products). Several operators in this region are active in trans-border trades with the United States.

The Port of Montreal is the second busiest port in Canada, handling 32 million tonnes of cargo in 2015. Petroleum products move between the Port of Montreal and the Port of Quebec City. Approximately 97% of Canada's crude oil shipments (inbound and outbound) transit through the St. Lawrence River (14%) and from the East Coast (83%).

East Coast

The domestic marine industry on Canada's East Coast is involved in a range of activities, however the majority of the activity is related to the petroleum industry located in Saint John, New Brunswick, Come-by-Chance, Newfoundland and Labrador, and at Newfoundland's offshore oil project sites. In 2011, there was an average of 8,200 domestic and international vessels arriving at ports on the East Coast.

The Arctic

Marine transport is critical to communities and development in the Arctic. Marine shipping is the favoured option for community and industry resupply, particularly for larger and heavier goods, given the high cost associated with transporting cargo by air. Operating conditions in the Arctic are particularly challenging due to the presence of ice, extreme weather conditions, low population density, and limited marine infrastructure.

There is a limited marine industry operating in the Arctic with most activity focused around community resupply and resource development, including the carriage of fuel. While in 2011 there were approximately 400 vessels moving through Canada's Arctic waters, traffic levels are expected to increase in the medium term due to new mining projects, oil and gas exploration, increasing tourism, as well as ships transiting the Northwest Passage.

Transport Canada held engagement sessions in March 2016 to discuss the proposed Northern Marine Transportation Corridors (Corridors). The Corridors would provide a framework to help prioritize activities related to marine transportation in Canada's Arctic. Prioritized activities could include marine services and marine infrastructure to benefit community resupply and economic development. Engagement session participants, including those in Iqaluit and Yellowknife, were generally supportive of the proposed Corridors and raised a number of items for Transport Canada's consideration including minimizing impacts of shipping in environmentally sensitive areas and adjusting corridors to minimize impacts on wildlife and marine animal populations that are important for hunting.

Canada's Marine Safety System

As a trading nation, Canada relies on a safe and secure marine transportation system to support sustainable economic growth. Marine shipping is a global activity, which has important implications for how it is regulated in Canada. Because ships sail between many countries, Canada cannot act alone. Rather, Canada works with other coastal nations to agree on international standards for the safety, security, and environmental performance of international shipping. As a result, Canada has a comprehensive marine safety systemⁱ that strives to be safe, efficient, and to protect the environment.

Canada's territorial sea extends from its coastline to 12 nautical miles (NM) offshore. Ships and crew, whether foreign or domestic, must comply among others with the *Canada Shipping Act, 2001* (CSA 2001) and international conventions (e.g., *Prevention of Pollution from Ships*ⁱⁱ and *Safety of Life at Sea*ⁱⁱⁱ) when in Canadian waters. However, foreign ships that are passing through these waters can do so without requiring special approvals. Canada's Exclusive Economic Zone (EEZ) extends from 12 NM to 200 NM. Within the EEZ, foreign ships have the right to navigate freely, but must meet Transport Canada's regulations on pollution, fishing and natural resource development.

The CSA 2001 establishes comprehensive safety standards for all Canadian and foreign-flagged vessels operating in Canadian waters. These standards cover, among other things, vessel construction, crew certification, on-board equipment, inspections, and pilotage requirements.

Further, Canada's Oil Spill Preparedness and Response Regime is characterized by shared responsibility between industry and government and the polluter-pay principle. Industry assumes liability and responsibility to prevent and respond to marine oil spills while Transport Canada oversees industry in keeping with legislative and regulatory requirements. Marine safety inspectors ensure that all vessels, including tankers, meet requirements established under the CSA, 2001 and international conventions. If the polluter is unknown, unable or unwilling to respond the Canadian Coast Guard will direct the oil spill response; in other instances, the Coast Guard monitors the response effort.

Oil and liquefied natural gas tankers have mandatory double-hulls, meaning that the bottom and sides of tankers have two layers of watertight hull surface. This helps maintain a ship's watertight integrity if the outer hull is damaged and reduces the likelihood of spills.

Canada has four pilotage authorities (Pacific, Atlantic, Great Lakes, and Laurentian) which have established compulsory pilotage areas to ensure that vessels are guided by pilots onboard with specialized knowledge of the local area when in sensitive or high-traffic waterways. In addition, the navigation systems that tankers carry are extremely accurate, helping the master or pilot sail safely through our coastal waters.

These and other marine safety measures are designed to protect Canadians and the environment from pollution resulting from oil spills from ships. A series of federal programs aim to prevent oil spills from happening, maintain effective preparedness and response capacity, and ensure that there are adequate liability and compensation arrangements in place to compensate those who have suffered financial losses should a ship-source oil spill occur.

Since 2013, the federal government has been making changes to our marine safety system to prepare for growth in marine shipping. These changes have focused mainly on prevention and preparedness for large ship-source spills of oil South of 60°, with some investments to enhance marine navigation and response in the Arctic. These changes were informed by recommendations made in a Tanker Safety Expert Panel (TSEP) report issued in 2013, input from stakeholders, and independent analyses. New actions being implemented include:

- Area Response Planning pilot projects – a regional, risk-based spill preparedness and response model. This new approach is being piloted in four higher-traffic areas across Canada, including southern BC (in the Straits of Georgia and Juan de Fuca);

the St. Lawrence River, Quebec; the Bay of Fundy, New Brunswick; and the Strait of Canso, Nova Scotia;

- More inspections so that all foreign tankers are at a minimum inspected on their first visit to Canadian waters and annually thereafter;
- Expansion of the National Aerial Surveillance Program to help deter and monitor potential polluters;
- New and enhanced navigational aids in Northern BC and funding for Oceans Networks Canada's Smart Oceans Initiative^{iv} to enable oceanographic data to be transformed into navigational safety information;
- Environmental sensitivity mapping in Northern British Columbia (BC) to help inform response and clean-up operations; and
- Support for the Clear Seas Centre for Responsible Shipping, which is a leading independent source of information and best practices on the safe marine shipping of oil and liquefied natural gas.^v

In April 2015, a second TSEP report was released that provided recommendations on Canada's ship-source oil spill preparedness and response regime north of 60° and on hazardous and noxious substances across Canada.^{vi} In spring 2016, TC held engagement sessions across Canada to seek views on the recommendations in this report. The outcomes of this engagement will help prioritize potential federal actions moving forward with respect to ship-source oil spills in the Arctic and hazardous and noxious substances nationally.

Engagement Questions on Marine Safety

Based on your knowledge of the current marine safety system, Transport Canada invites you to consider the following questions as they would serve as input to developing an approach to improving marine safety.

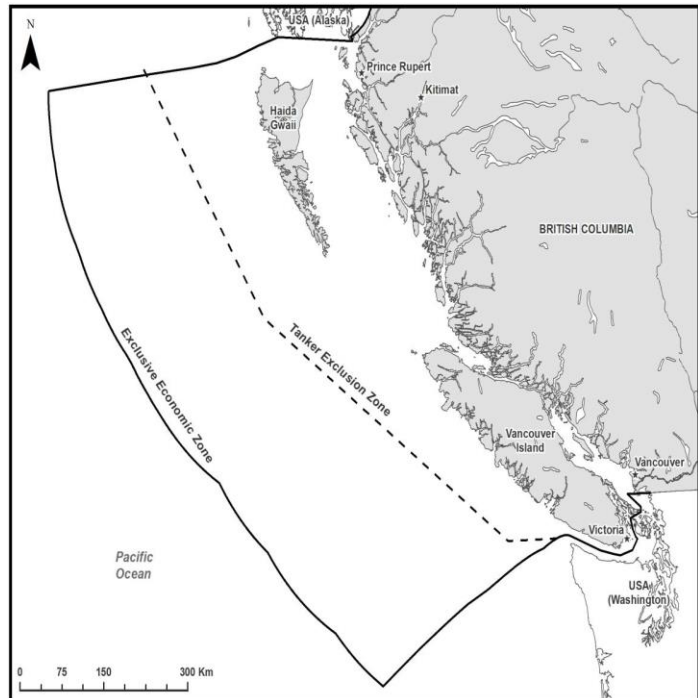
- 1) From your perspective, what are the most important issues to be addressed by the Government's commitment to enhance marine safety?**
- 2) From your perspective, what are the most important actions that could be taken to improve marine safety? For example, do we need to:**
 - Increase capacity for environmental response
 - Strengthen regulatory standards, e.g., more rapid response to ship-source spills
 - Investing in information technology to modernize navigation and marine domain awareness systems

- Clarify roles and responsibilities in the response regime
- Invest in more research for evidence-based decision-making related to spill clean-up and environmental response, including for alternative tools for spill response

Formalizing a Crude Oil Tanker Moratorium on BC's North Coast

Voluntary Tanker Exclusion Zone

Currently, there is a voluntary Tanker Exclusion Zone (TEZ) that has been in place since the 1980s that applies to loaded oil tankers transiting from Alaska to the continental US. The purpose of the TEZ is to keep loaded oil tankers that are transiting between Alaska and the continental US west of the zone boundary to protect the shoreline should the tanker become disabled. The TEZ extends up to 70 nautical miles offshore and narrows down to 25 nautical miles as tankers approach the Juan de Fuca Strait to enter US waters. More than 300 tankers transit annually along BC's coast and to date there have been no reports of non-compliance with the TEZ.



Products covered by the Moratorium

Determining the definition of crude oil is a key step in determining an approach to the Moratorium. The definition of crude oil will be used to determine the range of petroleum products that are covered by the Moratorium. Canada is a party to several international maritime conventions, which are recognized by the marine shipping community, that differentiate between crude and refined oils. The broadest definition of crude oil includes *any liquid hydrocarbon mixture occurring naturally in the earth whether or not treated to render it suitable for transportation. It also includes crude oils from which certain substances have been added or removed.*^{vii}

Another definition distinguishes between persistent and non-persistent oils because of their varying levels of environmental impact.^{viii} Persistent oil is heavier and when spilled tends to break up and dissipate slowly in the marine environment and usually requires a clean-up operation. Persistent oil includes crude oils, fuel oils, lubricating oils, and bunker fuel, which is used in most ships. In contrast, non-persistent oil tends to

dissipate rapidly through evaporation and does not necessarily require a clean-up operation. Non-persistent oil includes gasoline, light diesel oil, and kerosene.

Given the remoteness of some communities and industries located on BC's north coast, re-supply activities may include products that could be captured by the definition of persistent oils (e.g., fuel and heating oils). Any approach to the Moratorium would need to consider the potential impacts on community and industry re-supply.

Scope of the Moratorium

The types of ships that could be covered by the Moratorium could include any ships constructed or adapted to carry oil in bulk as cargo (e.g., tankers). The definition of a tanker can include a barge when it is carrying large amounts of persistent oil (over 2000 gross tonnes of oil).^{ix}

It should be noted that barges carrying over 2000 gross tonnes of persistent oil do call at ports in Northern BC for community and industry resupply. In addition, there are large ships that carry significant amounts of bunker fuel in their tanks calling at ports in Northern BC.

In deciding which vessels the Moratorium applies to, it is important to consider the potential impact on regional communities, ports, industries, and the national economy and its supply chains. Different types of vessels for resupply purposes and to move goods across Canada, to export markets and into the United States.

The geographic area for the Moratorium also needs to be determined and would need to be considered from different perspectives, including Canada's commitments under international conventions on marine shipping (e.g., United Nation Convention on the Law of the Sea).

Engagement Questions on a Crude Oil Tanker Moratorium on BC's North Coast

- 1) From your perspective, what are the most important issues to be addressed by the Government's commitment to formalize a crude oil tanker moratorium?**

- 2) From your perspective, what approach could best ensure that the environment is protected while economic impacts on communities are minimized?**

Conclusion

Transport Canada is seeking to have a national conversation and we want to hear your ideas on broader marine safety issues to identify potential actions that could improve Canada's current marine safety regime and on the potential parameters of a crude oil tanker moratorium off of BC's north coast.

All submissions should be sent to [Clean Shipping / Navigation Propre \(TC\)](#). Further engagement with Indigenous groups, coastal communities, environmental non-governmental organizations, and marine stakeholders will take place over summer 2016. The results of these sessions and your responses to this questionnaire will help guide the federal government's decision-making.

ⁱ <https://www.tc.gc.ca/eng/marinesafety/menu.htm>

ⁱⁱ <http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-%28MARPOL%29.aspx>

ⁱⁱⁱ <http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Safety-of-Life-at-Sea-%28SOLAS%29,-1974.aspx>

^{iv} <http://www.oceannetworks.ca/>

^v <http://clearseas.org/>

^{vi} Report available at: <https://www.tc.gc.ca/media/documents/mosprr/TC-Tanker-E-P2.pdf>

^{vii} Crude Oil is defined as "liquid hydrocarbon mixture occurring naturally in the earth whether or not treated to render it suitable for transportation. It also includes crude oils from which certain distillate fractions have been removed (sometimes referred to as "topped crudes") or to which certain distillate fractions have been added (sometimes referred to as "spiked" or "reconstituted" crudes)." MLA, Schedule 6, *International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage*, 1992, Article 1.3 a), p. 144, <http://laws-lois.justice.gc.ca/PDF/M-0.7.pdf>

^{viii} "Non-persistent oil is oil which, at the time of shipment, consists of hydrocarbon fractions,(a) at least 50% of which, by volume, distils at a temperature of 340°C (645°F). And (b) at least 95% of which, by volume, distils at a temperature of 370°C (700°F); when tested by the ASTM Method D86/78 or any subsequent revision thereof". International Oil Pollution Compensation Fund, Guidelines, <http://www.itopf.com/knowledge-resources/documents-guides/fate-of-oil-spills/>

^{ix} ship is define as "any sea-going vessel and seaborne craft of any type whatsoever constructed or adapted for the carriage of oil in bulk as cargo, provided that a ship capable of carrying oil and other cargoes shall be regarded as a ship only when it is actually carrying oil in bulk as cargo and during any voyage following such carriage unless it is proved that it has no residues of such carriage of oil in bulk aboard". MLA 2001, Schedule 6, *International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage*, 1992, Article 1.1, p. 132, <http://laws-lois.justice.gc.ca/PDF/M-0.7.pdf>