

**CANADA – UNITED STATES (SALISH SEA) SPILL RESPONSE ORGANIZATIONS:
A COMPARISON REVISITED**

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The Salish Sea comprises the North American inland marine waters of Washington State and British Columbia; an international border between Canada and the United States intersects it. Planning for oil spills that threaten to cross the international border is under the jurisdiction of the Canadian Coast Guard (CCG) and the United States Coast Guard (USCG) as described in the Canada-United States Joint Marine Contingency Plan. As Canadian companies gain approval to construct new pipelines to move oil-sands-derived crude oil from the landlocked province of Alberta to the tidewater province of British Columbia, governments, agencies and citizens are publicly questioning whether current levels of oil spill preparedness and response equipment will be adequate for the increased tanker traffic from Canadian ports. These stakeholders may likewise be unaware of forthcoming spill prevention and response enhancements, by the Canadian government and industry, associated with new energy infrastructure projects.

This paper will expand on a 2014 IOSC paper entitled CANADA – UNITED STATES (SALISH SEA) SPILL RESPONSE ORGANIZATIONS: A COMPARISON,¹ which was a snapshot of regulations, actual inventories and philosophies that made up the 2014 response picture for the south Salish Sea shared between Canada and the United States. In order to see the entire picture, the reader is encouraged to have both documents at hand.² The updated paper reviews changes to American Oil Spill Response Organization (OSRO) and Canadian Response organization (RO) equipment inventories, changes to the Canada Shipping Act 2001, Canada’s new Oceans Protection Plan (OPP), United States newly implemented non-floating oil ORSO classification, Washington State’s oil spill contingency plans and the future buildup of response equipment and personnel.

BACKGROUND

The approval of the Trans Mountain Pipeline expansion project, which presently carries 300,000 barrels of product per day to its Westridge Marine Terminal and loads five tankers and three barges a month, will expand to 890,000 barrels a day, resulting in 29 new tanker transits each month and the same number of barge trips: three. All things remaining equal, more than 250 large commercial vessels enter the Port of Vancouver each month. When the expansion is complete, the number will rise to 279 large commercial vessels a month. Added to the pipeline expansion is the uncertainty about the product dilbit. It is generally agreed upon that dilbit will float, but in certain instances the product can collect fine particles of sand and sink. The potential for floating oils to sink over time can occur when “floating oil that mixes with sediment after being stranded on a beach can be reworked and moved seaward by wave action to sink in the adjacent nearshore waters, floating oil can mix with sand in the surf zone and sink, without ever stranding onshore and/or some oils are lighter than water initially but become close to

¹ IOSC Proceedings, Issue 2011-2014, Volume 2014, Issue 1 (May 2014), Session 6: International Guidelines for Spill Planning. <http://ioscproceedings.org> (accessed March 16, 2017).

² IOSC Website

or even heavier than the density of freshwater once the lighter fractions are lost by evaporation. These oils can sink as either bulk oil or oil-particle aggregates on the bottom of a water body.”³This backdrop sets the stage for our comparison paper.

CURRENT LEVEL EQUIPMENT COMPARISON

Canada

Despite having adopted legislative amendments allowing oil and gas industries operating off Canada’s east coast to plan for the use of spill treating agents (dispersants) in response to oil spills, Canada continues to support only mechanical and manual tactical solutions for response to marine oil spills. As such, regulations and standards for ROs focus primarily on containment tactics, mechanical recovery and gross oil storage requirements. There is no provision in law or in practice for *in-situ* burning or dispersant application.

Western Canada Marine Response Corporation’s (WCMRC) response resources such as mobile skimming vessels (OSRVs or Oil Spill Response Vessel), boom and workboats, and primary storage barges are strategically located across the south Salish Sea. WCMRC owns all their equipment resources enabling them to meet the RO Transport Canada certification. Like response organizations worldwide, WCMRC also utilizes trained sub-contractors for additional personnel and equipment resources. Although Vessels of Opportunity (VOO) are not required by regulation, there is government guidance that allows ROs to use VOOs to augment incident response. WCMRC maintains a Vessel of Opportunity program, formerly known as the Fishermen’s Oil Spill Response Team (FOSET) program.

United States

Both MSRC and NRC are classified in five core resource categories including protective boom, effective daily recovery capacity boom, temporary storage capacity, response vessels and personnel. As

³ Sunken Oil Detection and Recovery Operational Guide, API Technical Report 1154-2, First Edition, February 2016

indicated previously, they are also classified as “dispersant OSROs,” having the capability to apply chemical agents, usually by aircraft, to aid in breaking up surface slicks and dispersing oil within the water column.

Though not a USCG OSRO classification category, both MSRC and NRC have an inventory of *in-situ* burn boom used for controlled burning. United States Federal regulations do not address a specific requirement for a Vessel of Opportunity (VOO) fleet; however, the State of Washington does. Based on the number of Washington State operating areas both companies cover, MSRC and NRC combined could call out for up to 144 Vessels of Opportunity under contract⁴.

Table 1 Current Equipment Owned by Canadian Response Organization Western Canada Marine Response Corporation / United States Oil Spill Response Organizations National Response Corporation and Marine Spill Response Cooperative

Description* Kind & Type ⁵	WCMRC	NRC	MSRC
Boom (6-18 in./15-45 cm.) Boom-B-3	24,120 feet 7,518 meters	11,200 feet 3,414 meters	7,600 feet 2,319 meters
Boom (> 18 in. < 42in./45-105 cm.) Boom-B-2	71,841 feet 22,392 meters	75,200 feet 22,920 meters	83,760 feet 25,530 meters
Boom (> or = to 42 in./105 cm.) Boom-B-1	21,672 feet 6,755 meters	8,175 feet 2,492 meters	28,440 feet 8,668 meters
Total Boom	117,633 feet 36,665 meters	95,675 feet 29,162 meters	119,800 feet 36,514 meters
Effective Daily Recovery Capacity (EDRC)	75,769 bbls 11,309 metric tonnes**	95,679 bbls 13,395 metric tonnes	255,495 bbls 38,133 metric tonnes
Temporary Storage Storage-PS-(1,2,3,4)	54,015 bbls 8,062 metric tonnes	38,273 bbls 5,358 metric tonnes	106,920 bbls 15,958 metric tonnes
Oil Spill Response Vessels (OSRVs) Vessel-OSRV-(1,2,3)	5 OSRVs (various capabilities)	7 OSRVs (various capabilities)	17 OSRVs (various capabilities)
Work Boats Vessel-WB-(1,2,3,4) Vessel-SKF-O	20 work boats	65 work boats	18 work boats 12 skiffs
Dispersant Product Dispersant-D-O	Dispersant not approved in Canada	53,530 gallons (nationwide stockpile)	104,659 gallons (nationwide stockpile)
Aerial Dispersant Application Platforms Aircraft-FW-DD-(1or 2)	Dispersant not approve in Canada	6 Aircraft Nationally (Three dedicated to NRC)	4 Aircraft Nationally (All dedicated to MSRC)

* The equipment listed for NRC and MSRC was taken from the Western Response Resource List (WRRL). The WRRL

⁴ Washington State legislation WAC 173-182-317 applies to owners and operators of covered vessels and covered vessel plan holders who are required to have a plan for the use of VOO for responding to spills.

⁵ Western Response Resource List, Kind and Type Lexicon, WRRL.US)

is a comprehensive list of spill response equipment in which participants list the majority of their response equipment. The WCMRC equipment summaries were provided by WCMRC.

** For the purposes of this paper, 1 metric tonne = 6.7 bbls (1 bbl = 42 US gallons).

**Table 2 Comparison Response Organization and Oil Spill Response Organizations
- Fire Boom and Dispersant Capability**

Description	WCMRC	NRC	MSRC
Fire Boom Boom-Bfire-O	feet/meters (500 feet/152 meters) <i>In-situ</i> burning not pre-approved in Canada	feet/meters 500 feet/152 meters	feet/meters 1,000 feet/304 meters
Dispersant Product Dispersant-D-O	Dispersants not approved in Canada	53,630 gallons*	104,659 gallons*
Dispersant Application Platforms Aircraft-FW-DD- (1 or 2)	Dispersants not approved in Canada	6 Aircraft *(Three dedicated to NRC)	4 Aircraft *(All dedicated to MSRC)

Source – National Strike Force Coordination Center and Western Response Resource List

* National stockpile or equipment

PERSONNEL COMPARISON

Canada

WCMRC's administrative headquarters and main operations hub are in Burnaby, British Columbia. Currently, the Burnaby hub provides response capability for the southern BC Mainland as well as Vancouver Harbour. In the near future, to support TMEP (Trans Mountain Expansion Project), WCMRC will significantly expand their resources beyond the Burnaby facilities with new and realigned forward operating bases. All bases will have WCMRC staff responders, trained on-call contract personnel, and equipment resources available 24/7 to address a member's marine oil spill. In addition to the staff responders listed in Table-3, WCMRC has an in-house and contracted incident management team available. Pre-trained marine contractors and VOO program members can also be dispatched to supplement response efforts with additional vessels and personnel.

United States

OSROs are required to train their personnel to take actions associated with their job responsibilities, to meet Occupational Safety and Health Administration requirements, to receive communications training and to be trained on specific response equipment owned by the OSRO.

In Washington State, MSRC has a regional office in Everett with prepositioned-equipment sites in Bellingham, Anacortes, Seattle, Tacoma, Port Angeles and Neah Bay. Each prepositioned site has dedicated personnel and equipment resources available 24/7 to respond to a member's marine oil spill. MSRC also has additional standby licensed mariners available in Washington State. This is done via a separate "augmented crew" contract used to "plus up" staff and relieve workers operating vessels should an incident be prolonged.

In Washington State, NRC has a regional office in Seattle with prepositioned-equipment sites in Anacortes, Ferndale, Neah Bay, Seattle, Pasco and Spokane. Each prepositioned site has dedicated personnel and equipment resources available 24/7 to respond to a member's marine oil spill. NRC annually trains and keeps in contact with a 120-person list of part-time staff. These personnel are available for spill response and other projects as assigned.

Table 3 Current Full-time Personnel Comparison (Staff and Responders)

WCMRC (British Columbia) Personnel-P-O	NRC (Oregon & Washington) Personnel-P-O	MSRC (Oregon & Washington) Personnel-P-O
48	127	72

Source – Western Canada Marine Response Corporation, National Response Corporation and Marine Spill Response Corporation

CANADA'S OCEANS PROTECTION PLAN (OPP)

In November 2016, Canada's Prime Minister announced the Oceans Protection Plan (OPP), a five year, \$1.5 billion dollar plan to protect and sustain the economic, environmental, social and cultural health of Canada's oceans and coasts. The plan's goal is to achieve a world-leading marine safety system that will improve Canada's ability to prevent and respond to marine pollution incidents⁶.

⁶ Office of the Prime Minister. (2016). *Canada's Oceans Protection Plan* [Press release]. Retrieved from <http://www.https://tc.gc.ca/media/documents/communications-eng/oceans-protection-plan.pdf>

Elements of the plan relating directly to preparedness and response include improved regional response planning and strengthening the polluter-pay principle by amending the Ship-source Oil Pollution Fund to ensure an adequate source of funding.

The role and capability of the CCG will be significantly enhanced under the plan. Improved command and control capabilities, including new Mobile Incident Command Posts, will allow CCG to better lead the responses to marine emergencies and intervene more quickly in situations where ship owners have been reluctant to respond. A significant modernization and replacement of much of CCG's oil spill response equipment resources nationwide and an increase in response personnel, both now underway, will allow a more effective response to spills not normally handled by the ROs. The recent re-purposing of Kitsilano CG Base in Vancouver Harbour as a combined Search and Rescue / Environmental Response facility, providing 24/7 local coverage, will significantly improve CCG's response times. The introduction of state-of-the-art spill assessment and monitoring tools as well as the addition of small Self-propelled Advancing Skimmers (SPAS) and High Speed Sweep Systems (HSS) at strategic locations will be key to more effective response to spills in Southern Georgia Basin.

In addition to other science, hydrographic and spill modeling initiatives, the plan will introduce the involvement of first nations, coastal communities, and the Coast Guard Auxiliary in marine spill response activities.

STANDARDS FOR NON-FLOATING OIL CLEANUP

United States

The USCG added a new category to the March 2016 Oil Spill Response Organization Classification Guidelines. The National Strike Force Coordination Center created a standalone classification for non-floating oil OSROs. The new United States guidelines establish three operational categories in which OSROs must demonstrate, through application and inspection, sufficient resources

to earn non-floating oil certification. The resources associated with these capabilities “can be owned or contracted.” Each category is listed below.

Detection Capability
Recovery Capabilities
Storage Capabilities

OSROs for Vessel Response Plan holders must be deployed and operating within 24 hours of a spill and, similarly, OSROs for Facility Response Plan holders must have equipment onsite within 24 hours of a spill.

Non-floating Heavy Oils and Group V oils are now combined in the single “Non-floating Oils.” category. Diluted Bitumen (Dilbit) and other heavy oils previously categorized as Group V products were identified as being at risk to submerge and/or sink under certain conditions. Research suggests that changes in seawater density and exposure to fine sediment in the presence of high mixing energy are key factors in causing certain oils to submerge and possibly sink. The Northwest Area Contingency Plan presents situational assessment guidance to help responders determine if floating heavy oil is at risk of becoming non-floating oil.⁷

The specific inclusion of Dilbit as a non-floating oil is significant to the Northwest’s international operating environment in that the projected Trans Mountain Pipeline expansion project would increase the amount of Dilbit being transported from Vancouver, British Columbia, to foreign markets through the shared waters of Canada and the United States. In fact, capacity of the expanded pipeline system is reported to increase from some 300,000 barrels of oil per day (to include all types of

⁷Northwest Area Contingency Plan, 2017, Section 9412, Non-Floating Oil Spill Response Tool, Figure 9412-2, Summary of Behaviors of Sunken or Submerged Oil

oil, not only Dilbit) to 890,000 barrels per day.⁸ Export Dilbits known to be at risk of sinking include both the Cold Lake and Access Western Blends.⁹

Canada

Though not mandated by Canadian legislation, WCMRC has voluntarily developed a non-floating oil plan that places them at parity with their United States OSRO counterparts who have achieved non-floating oil certification

MUTUAL AID COMPARISON

Canada

Although there have been some positive changes since 2014 with respect to the provision of mutual aid assistance between Canadian ROs and United States OSROs, administrative challenges remain. Both countries have statutory provisions allowing spill response vessels from the other nation to enter their waters to assist with a major spill event. Under the Oil Pollution Act of 1990, all working spill responders in the United States, including those from Canada, have “limited responder immunity” that provides responders with a legal defense for simple negligence. The same is not true for United States responders in Canada and the result is that some US OSROs will not respond into Canadian waters, even for an exercise¹⁰.

In 2014 Canadian legislation was amended to provide responder immunity to the agents and mandataries of ROs. Section 181 (2) of the CSA 2001 grants Canadian ROs immunity for civil or

⁸ Kinder Morgan, “Trans Mountain Pipeline Expansion Project.”

⁹ Federal Government Technical Report Properties, Composition and Marine Spill Behaviour, Fate and Transport of Two Diluted Bitumen Products from the Canadian Oil Sands, November 30, 2013.

¹⁰ Hawkins, Thomas, Current State of Cross-Border Response, Clean Pacific Conference, Seattle –June 2016.

criminal liability in respect to any act or omission occurring during a response operation. With the 2014 amendments, the CSA 2001 presently protects three groups of responders:

- Certified ROs and their agents/mandatorys
- Persons designated as approved responders by the Minister of Transport
- Those directed by the CCG

Although the CSA 2001 amendment appeared to include the provisions necessary to solve the responder immunity problem, the only means currently available to Transport Canada to “approve responders” and thereby allow them into Canada, is to certify them as a RO under TC (Transport Canada) standards. Equally impractical and improbable is direction of a United States OSRO by the CCG.

Possible solutions have been identified including development of an administrative tool for ROs to use to designate an American OSRO as its agent and thereby obtain Canadian level of immunity under section 181, and the need for a rapid process to be used by the Minister of Transport to designate, in writing, a United States OSRO, including its officers, directors, employees and sub-contractors, as an approved responder¹¹. Recent attempts to draft a designation form with language satisfactory to all parties have been unsuccessful. OSROs have been concerned that the language in the designation forms does not clearly provide immunity for employees and subcontractors. Continued effort among Transport Canada and potentially affected United States OSROs is required to develop an administrative process and confirm the terms and wording of the designation form.¹²

United States

¹¹ Ibid

¹² Ibid

How the Jones Act¹³ is interpreted, specifically the second prong, remains an important factor in the reciprocal movement of vessels back and forth across the border.

Notwithstanding any other provision of law, an oil spill response vessel documented under the laws of a foreign country may operate in waters of the United States on an emergency and temporary basis, for the purpose of recovering, transporting, and unloading in a United States port oil discharged as a result of an oil spill in or near those waters, if - (1) an adequate number and type of oil spill response vessels documented under the laws of the United States cannot be engaged to recover oil from an oil spill in or near those waters in a timely manner, as determined by the Federal On-Scene Coordinator for a discharge or threat of a discharge of oil; and (2) the foreign country has by its laws accorded to vessels of the United States the same privileges accorded to vessels of the foreign country under this section.

Moreover both Canada and the United States are signatories to The International Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC). International cooperation and mutual assistance are fundamental components of the convention yet the responder immunity must be addressed between cooperating countries separately.

UNITED STATES AND CANADIAN TRAFFIC-SEPARATION SCHEME

The traffic separation scheme in the Strait of Juan de Fuca requires all ships to enter through U.S. waters and depart through Canadian waters. Though Canadian and United States law requires tank and nontank vessels of a certain size to have vessel response plans to meet federal regulations, the state of Washington's Oil Spill Contingency Plan must also be met. Both the Washington State Maritime Cooperative and the National Response Corporation offer the state mandated and state approved oil contingency plans for those commercial vessels 300 gross tons or more. To permit vessels to avoid paying for response coverage for the jurisdiction in which they are only transiting by right of innocent passage, both MSRC and NRC have entered into reciprocal arrangements with WCMRC to provide response coverage, which allows vessels to be in compliance with both countries' response requirements. The reciprocal arrangement is not applicable for vessels transiting the Juan de Fuca Strait and calling on both Canadian and United States ports.

FUTURE

¹³ Jones Act TITLE 46 > Subtitle V > Part D > CHAPTER 551 > 55113

Canada

Developing the Enhanced Response Regime

The current state of response capability in the Canadian Salish Sea is projected to grow as a result of TMEP's approval. Trans Mountain has committed \$100 million (CAD) to WCMRC to fund an Enhanced Response Regime that will augment WCMRC's other resident response equipment. This program is timed to meet TMEP's 2018 in-service date; it will significantly exceed the current statutory thresholds for equipment and response times.

Prevention Measures and Voluntary Planning Standards

To complement WCMRC's expansion, Trans Mountain also committed to a series of systematic navigation procedures designed to reduce the risk of a spill from a laden tanker. These expanded procedures, bulleted below, can be viewed as proactive measures that buttress WCMRC's Enhanced Response Regime:

- Continued participation in the cooperative Vessel Traffic System
- Continued adherence to a Traffic Separation Scheme
- Development of a tanker-vetting program
- Stipulation that two licensed pilots be on the bridge aboard laden tankers
- Tugs accompany tankers in extended tethered and non-tethered modes according to geographic risk areas
- Extension of pilotage to west of Race Rocks
- Assignment of tug escorts all the way to Buoy "J," the sea buoy

WCMRC Forward Response Bases

To fulfill the voluntary planning standards associated with TMEP, WCMRC will establish seven new or realigned forward response bases along the tanker route in: Vancouver inner harbour, the lower Fraser River, Nanaimo, the Saanich Peninsula, Victoria, Beecher Bay, and Ucluelet/Port Alberni. Three of these bases will be staffed 24/7. The existing Burnaby operations hub will remain active while administrative personnel will move to a separate management headquarters.

Table 4 WCMRC Capital Acquisitions for the Enhanced Response Regime

Quantity	Type	Description
3	Mobile Skimmers	High speed / high efficiency skimming vessels
3	Boom Boats	Unsheltered water capable displacement hulled vessels
1	Offshore Supply Vessel	To provide quick response bridge storage
4	50' Landing Crafts	Rapid delivery of containment boom and shoreline cleanup support
4	36' Landing Crafts	Rapid delivery of containment boom and shoreline cleanup support
10	Boom Skiffs	Unpowered utility sleds capable of being towed at 20-knots and holding 600m of containment boom
4	Work Boats	Designed to support protective booming strategies
12	Mini-Barges	Temporary shuttle storage
2	Response Barges	Primary on-water storage and support platforms with a recovered liquid capacities of 3,000 – 5,000 metric tonnes
8	Current Busters	Best Available Technology (BAT) sweep systems
Various	Boom, Portable Skimmers, and Ancillary Equipment	Over 30,000 meters of containment boom, 5 new skimmers, and related support equipment

Source - Courtesy of Western Canada Marine Response Corporation

United States

The National Strike Force Coordination Center is presently reviewing and approving applications for the non-floating oils OSRO classification. This is a significant step forward in recognizing that heavy products are moving on the nation's waterways and that pre-identified response detection and response tools are essential for a rapid and aggressive response.

CONCLUSION

At night one can stand in Port Angeles, Washington, and look out across the Strait of Juan de Fuca and see the lights of Victoria, Canada. It's a distance by air of 22 miles or 35 kilometers. The term "shared waterways" is quite literal. As stand-alone sovereign nations, both the United States and Canada shoulder the independent responsibility to have oil spill cleanup regimes in place to protect their national interests.

As for the equipment comparison, the first line of defense is most often the Oil Spill Response Vessel (OSRV). Five dedicated OSRVs are based on the Canadian side of the border while there are 24

OSRVs of various lengths and capabilities on the U.S. side. Currently, in all categories, equipment tallies favor the United States side. This is not unexpected given that Canada has only one government-sanctioned Response Organization on the West Coast while there are two nationally recognized OSROs located in Washington State.

Experienced personnel are critical for an effective response, but in many cases, Canadian and United States spill responders may not directly employ sufficient personnel to effectively operate all of the required equipment for around-the-clock operations. NRC and MSRC have combined full-time staffs of 199 while WCMRC has 48. To address this emergency condition, both nations' response organizations plan for and have agreements in place for "surge" staff.

The United States now has three types of OSRO classifications. They encompass mechanical equipment classification standards, dispersant stockpile and dispersant application aircraft classification standards and classification standards for non-floating oil detection and recovery. Vessel and Facility Response Plan Holders handling oils will need to list OSROs that can cover all three classification standards. Canada, on the other hand, continues to focus only on mechanical and manual spill-cleanup options.

Canada's Oceans Protection Plan embodies the expectation that Canada will spend in the range of \$1.5 billion dollars to address the Canadian government's concerns over increased vessel traffic and increased dilbit transits. At present, details as to how this money will be spent are preliminary. The Canadian government's monetary engagement coupled with Kinder Morgan's promise of \$100 million dollars of new money for spill response demonstrates a commitment to being prepared when dilbit shipments, categorized by the USCG as non-floating oils, increase seven times through the shared waterways. Non-floating oils represent a greater cleanup challenge, requiring different technologies to detect and remove oil suspended in the water column or pooled on the seabed in natural collection

points. In fairness, dilbit fits in the category of Group IV oils, which float and can be recovered on the surface with mechanical recovery tools such as skimmers. What causes dilbit to sink is when it mixes with excessive sediments in the water. This can take place in a matter of days or not at all, depending on the sediment load of the water.

Presently, there is a contrast in expected spending between Canada and the United States, favoring Canada. By comparison, United States industry and OSROs ramped up on equipment- and personnel- spending after the passage of OPA-90 and again after the 2010 spill in the Gulf of Mexico.

Of significance is the adoption of the same Command and Control system on both sides of the border. Both countries use of the Incident Command System at all levels of government, which allows for a common operating language and management by objectives: ensure the safety of the public and response personnel, control the source of the spill, manage a coordinated response effort, maximize protection of environmentally sensitive areas, contain and recover spilled materials, recover and rehabilitate injured wildlife, remove oil from impacted areas, minimize economic impacts, and keep stakeholders and the public informed of response activities.

The Trans Mountain Pipeline expansion project will change the landscape of response equipment utilized in our shared waterways. We are already seeing this come to fruition in terms of Canadian-government- and industry-money earmarked for spill prevention and response enhancements. Canada's oil reserves of oil sands (dilbit) are second to only those of Saudi Arabia. To date, they have been nearly all landlocked in Alberta with the U.S. being the primary customer. This is about to change.

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