

Executive Summary

Large oil spills are low-probability/high-consequence events. This means that while they are unlikely to occur, their potential impacts are catastrophic. This is particularly true of spills occurring along marine transportation routes through the Salish Sea, where there are multiple population centres and many species and ecosystems at risk.

Effective spill response must consider effectively minimizing ecological, economic and community harm. Measures must be put in place for: spill prevention, rapid response, proficient clean-up, thorough remediation, timely and sufficient compensation, and a publicly transparent and accessible regime.

Public concern about oil spills, especially from increasing tanker traffic, has been high as revealed in a range of public polls over recent years, even among those who support expansion of marine tanker traffic¹. We applaud any effort to increase oil spill response readiness in British Columbia. The policy concepts outlined in the intentions paper of February 28, 2018² - response times, geographic response plans, loss of use regulations, and maximizing the marine application of environmental emergency regulatory powers - are all welcome additions to the spill response framework.

However, Georgia Strait Alliance remains concerned with the level and type of regulation being proposed. Our concerns include, but are not limited to:

- that the public is largely left out of decision making
- transparent, comprehensive, compulsory rules are absent
- the intentions paper is silent on independent analysis
- demonstrated effectiveness is not highlighted
- much of the language and concepts are discretionary, allowing for situations where the regulator may intervene.

The Marathassa and Nathan E Stewart spills are reminders of why British Columbians are concerned that our spill response system isn't working. We know that an effective regime can and must be built and brought to BC's coast. It is in that vein that we share five principles for an effective, made in BC response regime.

1. Those with the most to lose from oil pollution must have a voice in decisions that put their livelihoods and communities at risk

Regional Citizens Advisory Councils (RCACs), a key part of our submission, can be used to correct the asymmetry in power between communities and the fossil fuel industry. They have

¹ Angus Reid, 2018 [Pipeline Problems? Try Tanker Troubles: BC Kinder Morgan opponents want spill response assurances](#)

² Ministry of Environment and Climate Change Strategy, 2018 [POLICY INTENTIONS PAPER FOR ENGAGEMENT: PHASE TWO ENHANCEMENTS TO SPILL MANAGEMENT IN BRITISH COLUMBIA](#)

been successfully implemented in a neighbouring jurisdiction, Alaska. They also present an opportunity to incorporate the free, prior and informed consent elements of UNDRIP, and give all communities real agency throughout the entire life of transportation of liquid petroleum products.

2. The polluter must pay for the response regime but cannot be the decision makers

Much of the failure in the current regime can be attributed to the conflict of interest inherent in oil spill response, where the desire to minimize the cost to the polluter conflicts with the need to undertake the work necessary to effectively respond to a spill. RCACs must be the ones overseeing the incident response process, and funds must flow from fossil fuel shippers to pay for preparedness, clean up and compensation.

3. Regulations must be based on the best independent science and analysis

Oil spill response requires study and analysis that must be undertaken by independent expertise. Oil spill plans must be subject to non-industry analysis and public scrutiny. These response plans must cause less ecological degradation than spilled oil would. GSA is in agreement with the BC government that oils that can sink in marine environments require more scientific study and analysis.

4. Regulations must be transparent, comprehensive and compulsory

In order to restore and continue public trust in the regulations, they must be transparent, comprehensive, and compulsory. The regulations developed must work in concert with those of neighbouring jurisdictions. The development of Geographic Response Plans must be thorough and driven by local concerns and oversight. Loss of use regulations must not include discretionary language and must delineate what constitutes an impact with as much clarity as possible.

5. Shippers must be able to clean up effectively what they move

Shippers must routinely demonstrate their continued ability to clean up what they move. Industry reports currently indicate an elevated level of clean up - often upwards of 80% - while independent reports conclude much lower numbers. Assurances of clean up are not enough, and clean up ability must be assessed and demonstrated. If conditions do not allow for effective containment and cleanup under current levels of spill response resourcing and technology, then fossil fuel transits must be limited to periods where that containment and cleanup has been demonstrated to be effective.

This regulatory development process is potentially transformative for our province. As it currently stands, we have an oil spill regime that simply does not work. The principles and policy framework we have advanced can change that. These are submitted out of respect for the coast, integrity of our economy, and the safety and wellbeing of communities.

Context

Oil transits are a major risk to communities along their routes throughout British Columbia. The amount and type of risk vary widely with transport methods, geography, weather and so forth, and the potential for high-consequence (high hazard) events can only be mitigated, never eliminated. Large oil spills are low-probability/high-consequence events. This means that while they are unlikely to occur, their potential impacts are catastrophic. This is particularly true of spills occurring along marine transportation routes through the Salish Sea, where there are multiple population centres and several recovering ecosystems, such as Howe Sound³. The species vulnerable to these events, from shorebirds to filter feeders, must be considered carefully in the assessment of all activities in their habitat⁴. In the case of an oil spill, a moment of human error can result in the extinction of the southern resident killer whales, or other keystone species. It is clear that worst-case spills would be devastating to ecosystems already heavily burdened by human activities, as well as to the jobs and economies that depend on our coast, and communities whether on sea or on land.

Equally clear is that trust in oil spill response in British Columbia is low. The examples of the Marathassa and Nathan E Stewart spills are reminders of why that low trust is justified - that the system simply doesn't work. Concerns about oil spills, especially from increasing tanker traffic, have been high across a range of public polls for many years. Even among those who support expansion of marine tanker traffic, concerns for oil spills is high⁵. The lack of effective response, and the public mistrust that has resulted from it, has led many levels of government to call for "world-class" or "world-leading" spill response. To achieve such a level, we must adopt existing best practices from other jurisdictions, plug a myriad of identified holes in the current oil spill regime, and open space to consider how to develop new ideas and raise the standards in the field.

BC's government has made clear their desire to defend the coast by exploring regulatory enhancements around spills in or affecting the marine environment. We applaud this goal. In response to the intentions paper of February 28, 2018 we submit the following response to the request for engagement. It is in the spirit of defending the ecological, economic and community concerns of our province that we offer the following principles and policy recommendations.

³Ocean Watch, 2017 [Ocean Watch Howe Sound Edition](#)

⁴ Jeffrey W. Short, Ph.D., 2015 [Fate and Effect of Oil Spills from the Trans Mountain Expansion Project in Burrard Inlet and the Fraser River Estuary](#)

⁵ Angus Reid, 2018

Our current oil spill response regime

Effective oil spill regulation

To protect our province effectively, an oil spill regime must consider several basic elements:

First and foremost, it must work to minimize ecological, economic and community harm. This means that measures are put in place for spill prevention, rapid spill response, proficient clean-up, thorough remediation, timely and sufficient compensation to those impacted, and that the entire regime must be accessible and transparent to the public.

Secondly our oil spill regime must not undermine or burden the rules and regimes in jurisdictions neighbouring us, with particular attention paid to those jurisdictions with whom we share waterways.

Finally, an oil spill regime must also have public credibility and legitimacy. This means the regime must provide the public real agency, have transparent workings, and result in just outcomes. While an oil spill regime that is operationally capable can exist without public trust, it will be experienced as an outside force. Political, legal and cultural confrontation will always be the result.

Recent high profile incidents in BC

Our province is not prepared for a major oil spill. The current regime is full of gaps and deficiencies, something well understood within the BC Ministry of Environment⁶. We use two recent high profile spills, specifically the Marathassa fuel leak and Nathan E Stewart sinking, as specific examples to highlight where the current regime is lacking.

Prevention

Whatever assurances are provided around spill prevention, marine incidents will always happen, and basic human error will always be present. Between 1999 and 2009 there were 1,200 reported marine vessels incidents along the B.C. coast⁷. The trend for incidents is not decreasing consistently, and in 2016 more than half of the reported incidents in Canadian waters were in the Pacific Region⁸. The sinking of the Nathan E Stewart involved a sailor asleep behind the wheel, with key safety equipment turned off⁹. Further, the waiving of

⁶ Ministry of Environment, Director of Environmental Emergency Program, 2014; [Freedom of Information request email](#)

⁷ Living Oceans Society, 2011 [Shipping on the British Columbia Coast. Current Status. Projected Trends. Potential Casualties. and Our Ability to Respond: A Briefing Report](#)

⁸ Transportation Safety Board of Canada, 2017 [Statistical Summary – Marine Occurrences 2016](#)

⁹ National Transportation Safety Board, 2016 [Marine Accident Brief Grounding of Articulated Tug and Barge Nathan E Stewart/DBL 55](#)

standard prevention practices like the requirement to have a pilot on board call into question the effectiveness of the overall marine safety regime to prevent incidents¹⁰.

Rapid response

Rapid response in both the Nathan E Stewart and Marathassa incidents was distinctly lacking and are representative of deep weaknesses in the area of rapid response. The Nathan E Stewart case demonstrated the difficulty of mobilizing equipment and labour to rugged and remote locations. There was a 16 hour gap between notification and the arrival of cleanup crews on the scene, which came just in time for darkness to set in. There was poor communication with motivated locals, and a lack of local resourcing for spill response¹¹. The 2015 Marathassa fuel spill in Vancouver's harbour, alternately, took place in a nearly best-case scenario. Even with relatively calm weather, ample spill monitoring resources and a spill response base nearby. It still took four and half hours to begin clean-up¹², and over 10 hours just to identify the source of the spill.

Proficient clean-up

Independent observers do not refer to the clean up of either the Nathan E Stewart or the Marathassa as proficient, though the lack of transparency around clean up makes it difficult to gauge what actually happened in both cases. Clean-up was a failure in the area near Bella Bella following the Nathan E Stewart sinking. The containment booms deployed after a long wait were rendered ineffective by wave action, and illustrate the futility of current clean up methods under adverse coastal conditions¹³. In the case of the Marathassa, the polluter's representative "appeared focused on minimizing costs to the polluter rather than trying to reach an appropriate standard of assessment and remedial actions", with some members of the spill response command feeling the need to take their own samples and hire their own experts to validate information¹⁴. After response operations had concluded, Western Canada Marine Response Corporation claims to have cleaned up 80% of spilled product¹⁵ but the Coast Guard Independent Report pegs the number at 50%¹⁶. This is a dramatic difference in estimates and only further undermines public faith in clean-up and our ability to assess their effectiveness

Remediation

Remediation is hampered by poor baseline science, an unwillingness on the part of polluters to engage in thorough impact assessments, and no mandatory requirement that this type of work is done. In the case of the Nathan E Stewart, the polluter has refused to engage in the science needed to determine what remediation is needed¹⁷. The Heiltsuk Nation are

¹⁰ HEILTSUK TRIBAL COUNCIL, 2017 [INVESTIGATION REPORT: The 48 hours after the grounding of the Nathan E. Stewart and its oil spill](#)

¹¹ HEILTSUK TRIBAL COUNCIL, 2017

¹² Globe and Mail, 2017 [In plain sight: How the Marathassa oil spill took hours to find](#)

¹³ Global News, 2017 [First Nation releases report on Nathan E. Stewart oil spill](#)

¹⁴ Canadian Coast Guard, 2015 [Independent Review of the M/V Marathassa Fuel Oil Spill Environmental Response Operation](#)

¹⁵ Western Canada Marine Response Corporation (WCMRC), 2015 [WCMRC RESPONDS TO MV MARATHASSA SPILL](#)

¹⁶ Canadian Coast Guard, 2015

¹⁷ Heiltsuk Tribal Council, 2017 [Response to statements by Ministry of Environment, Kirby Corporation](#)

proceeding with their own assessment, but communities without the resources necessary to pursue this course will be left without the baseline science to begin a proper remediation program. The Marathassa environmental impact assessment study was unable to differentiate the impact of that relatively small spill from the chronic issues in the area. This was due to several factors, including the lack of comparable baseline data, limited post spill monitoring and assessment in the weeks after the spill to note changes, and the reality that in an area which suffers multiple types and concurrent incidents such differentiation is difficult at best. In the context of shippers taking responsibility for remediation in or around crowded transportation channels, this is an indication that post-incident accountability measures are likely unenforceable and remediation specific to a one time event is impossible under the current regime¹⁸.

Compensation

Compensation to communities is far from adequate and timely. In the case of the Marathassa leak, the \$500,000 the City of Vancouver has spent on spill response has yet to be repaid by the polluter, while affected organizations claim that the polluter is offering 20 cents on the dollar for expenses caused by the spill. In the case of the Nathan E Stewart, the Heiltsuk Nation has yet to be repaid for \$150,000 in costs directly incurred by the spill. They are preparing for a lawsuit against the polluter, making it clear that they do not consider the current compensation regulations sufficient for the damage caused to their community¹⁹. Neither incident has seen compensation for difficult to differentiate and evaluate, long term ecosystem of impacts.

Transparency

There is a clear lack of transparency in the reporting of these incidents. In the case of the Marathassa, WCMRC reports 80% clean up of the spill²⁰, while the Coast Guard independent report reports clean up at 50%²¹. This is a substantial difference. It would be difficult to imagine a case where a maritime shipper would accept a 30% difference in delivery volume, and yet the public is asked to accept this in the case of a toxic substance spilled in close proximity to residential, recreational areas and food harvest areas.

Credibility and legitimacy

Under the current regime public concern, especially around marine spills, is very high. Even among those who support expansion of tanker traffic, a significant portion of British Columbians are lack confidence in our preparedness²². The level of concern is likely due to insufficiencies and lack of agency for those directly impacted to be able to use their voices to prevent incidents. For example, the Heiltsuk Nation weren't informed that the Nathan E Stewart was operating under reduced oversight due to a waiver until after it sank, and that waiver system is still in place²³. Each element of effective spill regimes failed in our reference

¹⁸ Hemmera Envirochem Inc., 2015 [M/V Marathassa Fuel Spill Environmental Impact Assessment](#)

¹⁹ CBC News, 2018 [Years after oil spills, money still owed to Vancouver, aquarium and Heiltsuk Nation](#)

²⁰ WCMRC, 2015

²¹ Canadian Coast Guard, 2015

²² Angus Reid, 2018

²³ DeSmog Canada, 2017 ['Nothing Has Changed': B.C.'s Botched Oil Spill Response Haunts First Nation](#)

cases either directly, or as an inability to confirm success through a lack of transparency and reporting. Given the ensuing legal challenges and political uproar after these incidents, the cleanup cannot be said to have resulted in just outcomes.

From prevention to compensation, these cases together put into question the effectiveness of every stage of spill response. The current regime has both failed and been seen to fail.

These two spills are minor compared to events like the Exxon Valdez in Alaska in 1989. It is difficult to imagine the extent of destruction which would have occurred around Bella Bella had the Nathan E Stewart been connected to a barge load of product, instead of being attached to an empty one. For a significant segment of the public, credibility has been entirely lost and must be rebuilt. In developing new regulations, the province must address as many issues as are within its jurisdiction to rebuild trust and protect our coast.

The intentions paper is an extension of the current regime

We applaud any effort to increase oil spill response readiness in British Columbia. Response times, geographic response plans, and loss of use regulations are all welcome additions to the spill response framework. However, we remain concerned with the level and type of regulation being proposed. The public is largely left out as substantive public engagement is relegated to a side issue in a single policy concept. Transparent, comprehensive, compulsory rules are absent. For example, the intentions paper rules out unannounced drills and spill plan approval. The intentions paper is also silent on independent analysis of spill response plans. Demonstrated effectiveness of the response plan is not highlighted. Much of the language and concepts are discretionary, allowing for situations where the regulator may intervene or choose not to.

We acknowledge that industry and government have interests outside of the environmental, economic and social risk of spills. However, discretionary policy puts decision makers at risk of regulatory capture. Regulatory capture is defined as “the result or process by which regulation, in law or application, is consistently or repeatedly directed away from the public interest and toward the interests of the regulated industry, by the intent or action of the industry itself.”²⁴ Examples of this phenomenon include climate targets for BC being revised by industry in closed door meetings with the oil and gas industry²⁵; an NEB pipeline approval process tainted by secret meetings with industry representatives, including a former Quebec premier²⁶; NEB reports about pipeline ruptures being shared with the polluter, Enbridge, ahead of public release, resulting in numerous changes of conclusions and the covering up

²⁴ Carpenter and Moss, as quoted in MacLean 2016, [Striking at the Root Problem of Canadian Environmental Law: Identifying and Escaping Regulatory Capture](#)

²⁵ Global News, 2017 [Investigation claims B.C.'s climate plan was influenced by oil and gas industry](#)

²⁶ National Observer, 2016 [Not only Charest. Energy East panel held private meetings with Quebec business leaders](#)

of internal Enbridge reports²⁷. Further examples of spill-specific issues abound, some referenced in various sections below. The appearance is of the fossil fuel industry trying to circumvent public processes, with regulators and political decision makers going along rather than directing. This erodes public trust around regulation of the fossil fuel industry as a whole.

While upgrades to the regime under the Ocean Protections Plan are underway, the industry still refuses to discuss better clean-up, preferring to focus on the speed of deployment, especially in public relations exercises²⁸. Were a major oil spill to occur, it's unlikely the public would accept rapid deployment as a substitute for effective response. The reality is we cannot wish away the likelihood of a major spill with token investment and better catchphrases. We need a significant upgrade in the resourcing and labour of oil spill response, and technological and tactical upgrades. These will only be possible with a major shift in regulatory approach. Otherwise the 10-15% on water clean up average²⁹ will prevail in any major marine spill, condemning a portion of our coast to be a sacrifice zone. This should not be acceptable to our provincial government, as it will not be acceptable to impacted communities.

We are not the first jurisdiction to face a collapse of public trust in oil spill regulation. Following the Exxon Valdez disaster, a process was undertaken by various US bodies charged with oil spill oversight. The US Congress noted that “only when local citizens are involved in the process will the trust develop that is necessary to change the present system from confrontation to consensus.”³⁰ Part of the new regime that came out of this experience included the creation of Regional Citizens' Advisory Councils, models for the kind of public agency and engagement a new oil spill regime in BC can bring forth. As the Prince William Sound RCAC, puts it:

A moral imperative also emerged from the Exxon Valdez spill: those people with the most to lose from oil pollution must have a voice in the decisions that put their livelihoods and communities at risk.³¹

We need not wait until a major spill happens to heed that call. The centerpiece of any new set of oil spill regulations must be independent oversight by the communities that stand to be affected by a spill.

²⁷ National Observer, 2016 [Pipeline watchdog hid evidence of secret Enbridge reports](#)

²⁸ CBC, 2016 [Is Canada ready for an oil spill?](#)

²⁹ THE INTERNATIONAL TANKER OWNERS POLLUTION FEDERATION LIMITED, 2018 [Containment & Recovery](#)

³⁰ US Congress, Oil Spill Act of 1990, [US Public Law 106-580. Section 5002](#)

³¹ [Prince William Sound Regional Citizens Advisory Council](#)

Maximizing the marine application of regulatory powers

BC, like all provinces, has clear regulatory jurisdiction to the low-water mark in tidal areas.³²

³³ Provinces also have the authority to enact legislation to protect the health of their residents³⁴.

The Supreme Court has further recognized that the province of British Columbia is the owner of the seabed and water columns of the Strait of Georgia, Johnstone Strait, Juan de Fuca Strait, and Queen Charlotte Straits,³⁵ indicating that it is within the province's ability, and responsibility to maintain these resources. Environmental protection is understood to be an area of shared responsibility between provincial and federal governments³⁶. BC must maximize the protections extended under its jurisdiction to ensure the unique nature of our coast is defended.

In the end, oil spills are physically unlikely to respect constitutional dividing lines between federal and provincial jurisdiction. An open water spill off the BC coast is almost certain to impact the coastal shoreline itself.

Therefore, the principles and policies we advance in this submission take it as given that provincial oil spill regulations should be apply fully to both terrestrial and marine environments.

Five principles of effective oil spill response

Principle one: Those with the most to lose from oil pollution must have a voice in decisions that put their livelihoods and communities at risk

There is a fundamental asymmetry in power between fossil fuel shippers and communities. The industry can call on significant financial resources, being able to marshal and deploy scientific, legal and technical resources at a level that local communities, marine interests and concerned members of the public are not. There is a significant imbalance in access to information, with the current spill response regime being opaque for members of the public. Plans are not easily accessible by the public, there is no clear path for their participation in the development of plans, no way to communicate or assert local interests, and no clarity around what plans are intended to achieve, how decisions will be made, or responsibility assigned. When things go wrong, as they did with the Nathan E Stewart and Marathassa

³² The Nauticapedia, 2013 [Who's In Charge of These Waters?](#)

³³ Natural Resources Canada, 2016 [Water boundaries on Canada Lands: that fuzzy shadowland](#)

³⁴ Schneider v. The Queen [1982] [2 S.C.R. 112](#)

³⁵ Reference re: Ownership of the Bed of the Strait of Georgia and Related Areas, [1984] [1 S.C.R. 388](#)

³⁶ R. v. Hydro-Québec [1997] [3 SCR 213](#)

spills, there is no clarity around accountability. Barring the occasional press release, plain language updates on post-spill outcomes are rare. The language of discretion abounds, and closed door negotiation is the rule. This opaqueness is a barrier to the public developing the kind of collaborations and relationships that would build trust.

For these reasons, British Columbians experience the industry as hostile and invasive, and that resistance to fossil fuel transits is both high and entrenched. It is a large, powerful industry, that is operating in our communities without our prior informed consent. It transports large volumes of toxic product, with those operations mostly concealed from public view. Safety systems put in place have failed, prominently, in a number of recent cases. Mechanisms of accountability are opaque. Nowhere is consent sought; indeed, in such a power dynamic, meaningful consent is impossible. The gap in information and agency is vast, with the public having no ability to review, modify, or reject fossil fuel transit plans.

This regulatory development period is an opportunity for change. There is an already-existing model for public oversight of spill response, built on informed community consent and effective agency. Regional Citizens Advisory Councils, modelled along the lines of the Sullem Voe and Alaska examples below, give communities and citizens the transparency and information necessary to be able to consent, and effective agency to monitor, modify or reject transits. The bar for acceptance of large scale fossil fuel movement must be high, given the devastating impacts that spills can have.

The commitment of the BC government to implementing UNDRIP also requires elevated participation in regulatory framework for indigenous communities. Indigenous communities will determine their own standards for free, prior and informed consent, but an RCAC could form part of that consent process for fossil fuel transits through traditional territories.

At present, advisory panels are mentioned in the intentions paper as a discretionary element of the regulations. In keeping with our belief that effective regulation is transparent, comprehensive and compulsory, these must be made a mandatory element of the spill regime. The existence, composition and timeline for inauguration of RCACs must be explicit in regulations, as well as the scope of their oversight.

The Alaskan RCAC model has a number of key characteristics (Integrated Area Response Planning in BC) that allow for better industry oversight and community involvement, and which we recommend:

Of particular note, there is the breadth of membership and the size of the board. Alaskan RCACs include representatives from local and indigenous governments, commercial fishing interests, recreational groups, environmental NGOs and the tourism industry. In the British Columbia context, group composition can be broadened to include representatives of marine shipping, the labour unions that represent marine workers, and positions for independent academics in relevant fields. This will result in more multi-faceted, deliberative bodies representing a broad set of interests and values. The fossil fuel industry itself is excluded from this body, to guard against undue influence.

Alaskan RCACs also have a geographic scope that is sub-regional, which aligns interests, risk, and available resources for concerned parties. In BC regional administration boundaries could align with Emergency Management BC boundaries, with sub-regions identified out of a mixture of bioregional, geographic features, and cultural concerns, on the one hand, and fossil fuel transits and risk profile on the other. Likely sub-regions in a South West BC planning area, as an example, would include Burrard Inlet, the Fraser Estuary, the Fraser Valley, Haro Strait, and so forth. The process for exact criteria and boundaries is best developed with the participation of those groups that will make up the RCACs, thereby allowing groups to enter the RCAC process with familiarity and a working relationship.

We also recommend that the scope of operations of each council be laid out clearly in a charter document, providing clear guidelines for what activities the council can fund. A made-in-BC model would:

- oversee environmental monitoring, which would include a program of baseline studies as well as spill impact and remediation monitoring
- provide leadership on proactive public engagement on oil spill planning, response, and loss of use, with a focus on seeking out a wide variety of relevant community perspectives
- oversee spill prevention activities, including identifying areas of concern for local communities, risk analysis for transits in within the GRP boundaries, planning evaluation of spill plans within their geographic boundaries, evaluation of drills, geographically-specific spill doctrine development, and long-term training evaluations
- assess spill response operations, evaluating them against planning and clean up standards, operational expectations in plan and in general doctrine, and reporting out with recommendations to the general public
- oversee loss of use assessment, actions and payment processes triggered by spills
- reject or limit transits for plans that do not meet assessment, drilling or operational standards

The differing composition, interests and scope of each RCAC would result in differing approaches in different sub-regions. This diversity of approach within designated operational and geographic frameworks would likely result in a wide variety of practical outcomes, allowing for the development of best practices as well as their application in region-specific approaches.

As much as possible, RCACs must deliberate and act in public view. Easily accessible public meetings are to be held monthly, with calendars detailing subject matter and agendas available ahead of time. When public input is being sought for GRP plan development and assessment, thearing-style proceedings should be adhered to, with evidence submitted being tested with cross-examination. Thorough records must be easily accessible online, with paper versions for communities underserved with internet access. To maximize accessibility, the business of RCACs, assessments and evaluations must require the inclusion of both technical documents and a plain language summary. These should also be

available both online and in paper versions for communities underserved with internet access.

In Alaska, RCACs are mandated to exist for as long as oil transit operations are underway. In BC, RCACs must be provided with a similar mandate, providing a body for long-term oversight. Given climate commitments at the provincial, federal, and international levels, this long-term is likely to have an end date, and the existence of such councils can be tied to the clear path to fossil fuel phase out that is likely to emerge in the medium-term.

Alaskan RCACs are also certified and audited by the US federal government, through the Coast Guard. In the BC context, such outside oversight must be assigned to a body with experience, such as the BC Auditor General's office.

The made-in-BC RCAC we recommend would have a number of advantages over the current regime.

- The communities facing risk will have both a direct say and responsibility for the entire sweep of the spill regime. This means those who are most motivated to protect their areas are charged with that task, that local concerns will lead the process, and that the public has real agency.
- Oil transit oversight will be visibly in the hands of the public, rather than industry or secretive regulators. A broad-based, diverse and large board makes RCACs more resistant to political pressure and regulatory capture.
- Being rooted in communities, RCACs can provide insightful proactive and meaningful public engagement that is missing from the current oil spill regime. This includes both tailored outreach to specific communities and interests and effective communication with the general public before, during, and after a project comes online or when there is an incident.

Principle two: The polluter must pay for the response regime but cannot be the decision makers

The polluter pays principle is a foundational element of environmental law in Canada. It is one that must underpin any spill regime. In this context, it means shippers of liquid petroleum products will be paying for the elements of a successful oil spill regime, from preparatory elements to equipment to post spill assessments and including direct pay outs in the event of a spill. Another key elements is that going forward, industry must also be following regulations rather than driving the regulatory process.

None of these are the case in the context of the current regime in BC. Fossil fuel interests appear to have subverted this principle, both through avoiding paying for adequate pollution prevention, the spill response regime, and for appropriately assessing and paying in the wake of incidents.

In the case of the Marathassa spill, reports from the Environmental Unit are that the private company hired by the polluter was seen to be in conflict of interest, and their “efforts appeared focused on minimizing costs to the polluter rather than trying to reach an appropriate standard of assessment and remedial actions.”³⁷. The clean up effort may have been less effective because of this conflict of interest.

In both the Marathassa and Nathan E Stewart spills, compensation from the polluters to local communities and organizations that incurred spill cost have not yet come. For the Marathassa, the responsible party is still being determined in the courts³⁸.

In the case of the Nathan E Stewart, no environmental impact assessment has been conducted in the wake of that spill, meaning proper payments cannot be assessed. Instead, according to the Heiltsuk Nation, secret negotiations have been conducted between the BC Ministry of the Environment and Kirby, the polluter³⁹, raising concerns that compensation will be limited and not linked to the environmental, economic and social damage caused by the spill.

These issues in the case of small spills raise concerns about how compensation would work in the event of a major spill, given the way fossil fuel shippers have conducted themselves in past large-scale spills in other jurisdictions. In the wake of the Exxon Valdez spill, for example, what the polluter paid was subject to significant legal attrition. The original punitive damages award, granted in a jury verdict in 1994, was reduced by 90% over the course of 14 years from \$5 billion USD to \$500 million. Exxon leveraged hundreds of millions of dollars and its ability to appeal as a form of combat by attrition, a resource intensive path of resistance unavailable to communities and fishermen devastated by the spill^{40 41}.

There are also questions about who is paying for the regime as a whole. Recent federal efforts at oil spill regime change have seen direct investments from the Canadian government, in the form of the Oceans Protection Plan, putting in \$1.5 billion of public money to mitigate additional risks to BC’s coast. This government commitment, however welcome in operational terms, seriously erodes the polluter pay principle. This funding not only constitutes a subsidy to the fossil fuel industry, it disincentivizes innovation and precaution from private actors.

These examples of the fossil fuel industry working to circumvent and erode public processes, and regulators and political decision makers going along, undermines and

³⁷ Canadian Coast Guard, 2015

³⁸ CBC, 2018

³⁹ Heiltsuk Tribal Council, 2017

⁴⁰ New York Times, 2008 [In Alaska, Rage and Sorrow Over Decision](#)

⁴¹ Mother Jones, 2008 [Supreme Court Overturns Exxon Valdez Verdict](#)

erodes public trust around the fossil fuel industry as a whole. Though only one of these examples are about spill response, that mistrust extends across regulatory categories to the relationship between government and the fossil fuel industry as a whole.

To have legitimacy, BC's regulations must ensure that the polluter pays for the entire regime, and follows rather than leads process. The intentions paper states that "[i]n the future, government may pursue industry funding to support the EEP's preparedness activities, including compliance and enforcement, to ensure its preparedness requirements are met." Rather than push that off to the future, this round of regulatory development can deal directly with the issues of payment. BC must require not only that the polluters advance payments for preparatory purposes, but that those payments be directed by an independent body, with RCACs providing the requisite independence. Funding from industry must be regular and substantial, with contributions by shippers proportional to their volume of transits and product in a given area. This money must be directly given to RCACs, who will then oversee its disbursements in the fashion outlined in the above section. RCACs should be regularly audited to ensure they are achieving their organizational goals.

Finally, to ensure that the polluter cannot avoid payment in worst case scenario spills, they must be required to post a bond sufficient to cover a worst-case scenario spill under loss-of-use regulations. This will require loss-of-use calculations to have a standard baseline to work from (see below).

Principle three: Regulations must be based in the best independent science and analysis

At present, oil spill regulation is a largely closed-door environment, without transparency or independent science or analysis. The entire regime needs to be brought into the light, and subjected to outside scrutiny. From prevention and planning to post-spill impact assessment and loss-of-use, governance must be in the hands of the public, and evaluation in the hands of scientists and analysts who are not paid for by industry. Environmental frameworks that emphasize private sector oversight have proven to be deeply flawed in BC. Deregulatory models are a poor choice for situations involving environmental, health and safety risks, risks to third party interests, decisions involving trade-offs; values vs expertise situations; conflicts of interests; and basic government functions⁴². Given public concerns around regulatory capture, inappropriate political influence, and the weight governments place on the potential for fossil fuel revenues, RCACs can act for the public at large in overseeing analysis.

To improve the current practice, there must be thorough vetting of science and analysis produced within the regime. There will always be a place for technical submissions made by fossil fuel shippers. Scientific, economic or legal work commissioned by the industry must be clearly marked as such, and subject to peer review and, where relevant, cross-examination,

⁴² Environmental Law Centre of Victoria, 2015 [Professional Reliance and Environmental Regulation in British Columbia](#)

by RCAC technical staff. This should also be the case for other reports, studies and evaluations

We recognize that given the types of expertise required to oversee fossil fuel transits, it would be almost impossible to have RCAC technical staff without industry connections, in particular in early phases. Therefore, efforts must be made to minimize and eventually close the revolving door effect between industry and regulators. Individuals acting as technical staff for RCACs should have at least two years of employment separation from fossil fuel interests, and possible conflicts with previous employers must be flagged.

Although there is a significant body of science around spilled oil, some specific areas must be the focus of more thorough scientific inquiry. GSA is in agreement with the province of BC that oils that can sink, like dilbit, would be a priority for more scientific study and analysis to understand their fate and behaviour. This includes more research and development for better technologies and techniques for the recovery of sunken oil, especially in moving water contexts⁴³. Until the issue of provincial powers for limiting increases in settled, transits of oil that can sink must require the demonstrated ability of shippers to detect, contain, and recover submerged and sunken oil to planning and clean-up standards. Washington State Group 5 Oil planning standards require “[s]onar, sampling equipment or other methods to locate the oil on the bottom or suspended in the water column” and “[d]redges, pumps, or other equipment necessary to recover oil from the bottom and shoreline”, as well as more generic categories of “[e]quipment necessary to assess the impact of such discharges” and “[o]ther appropriate equipment necessary to respond to a discharge involving the type of oil handled, stored, or transported.”⁴⁴ BC should adopt these standards, and add the ability to mobilize divers trained in the location and removal of sunken oils sufficient to deal with a worst case scenario spill.

In this context, the response planning recommendations found in the National Academy of Science, Engineering and Medicine Chapter 7 of Spills of Diluted Bitumen from Pipelines should also be incorporated⁴⁵. These include requiring elevated reporting from shippers transporting diluted bitumen and elevated scrutiny for spill plans. Following these recommendations, plans “should detail areas most sensitive to the effects of a diluted bitumen spill, including the water bodies potentially at risk, and...response strategies and resources necessary to mitigate the impacts of spills of diluted bitumen, including capabilities for detection, containment, and recovery of submerged and sunken oil.”

Oil spill plan assessments

⁴³ National Academies of Sciences, Engineering, and Medicine, 2016 [Spills of Diluted Bitumen from Pipelines A Comparative Study of Environmental Fate, Effects, and Response](#)

⁴⁴ Washington State Legislature, 2011 [Planning Standards for Group 5 Oils](#)

⁴⁵ National Academies of Sciences, Engineering, and Medicine, 2016

The intentions paper currently rules out thorough vetting of spill plans, both in terms of unannounced drills and spill plan approval. We consider both of these to be unacceptable concessions to industry. Plans of all kinds should not only require sign-off, but detailed analysis before that approval is in place. To achieve that level of scrutiny requires testing the operational assumptions that plans are built on. This must include spill modelling, response and logistics analyses, as well as thorough drill evaluation. Drilling under a variety of conditions, including no-notice at both the table-top and physical deployment levels, must be a regular part of the regime. This independent analysis and sign off must be housed in an RCAC framework, giving communities and citizens transparency and agency in the process.

Spill modelling must be undertaken for effective spill response planning and evaluation. These spill models should be developed by shippers, but thoroughly assessed by independent analysts attached to RCACs. Spills must be modelled at key risk areas for transits, with each form of product modelled independently. As seasonality is a key factor in effective spill modelling, spill response plans must include a variety of likely environmental scenarios for operations.

Spill plans must also be assessed through response gap and response capacity analysis, as well as logistics tests. This type of analysis would require critical operational assumptions around logistics deployment and travel and response times for both responders and equipment to be made clear in spill plans. This is also an opportunity to test spill response plans against local concerns, including traditional indigenous knowledge, and to make specific changes in the plan.

Response gap analysis “models the impact of environmental conditions on... oil spill response and evaluates the frequency and duration that such conditions would preclude the safe and effective deployment or operation of mechanical oil spill recovery systems” and “estimates the percentage of time during which environmental conditions such as wind, visibility, and waves would prevent or limit oil spill response operations.” (Technical Analysis of Oil Spill Response Capabilities and Limitations for Trans Mountain Expansion Project). These modelled constraints delineate some of the operational limits of a shipper’s spill response plan. Plans must be assessed using response capacity analysis, which “compares response effectiveness by location and season, and considers the difference to overall recovery based on differences in force composition, delays in response mobilization, and incorporation of night operations.” (Technical Analysis of Oil Spill Response Capabilities and Limitations for Trans Mountain Expansion Project). Though these are primarily marine frameworks, similar models can be applied to terrestrial response. The technical analysis referenced above includes, for example, a river-based logistics analysis of response possibility.

Once a plan is independently assessed, a schedule of drills must be mandated to test plan assumptions in something approaching real-world conditions. Assessment of drills should be

carried out against the planning and clean-up standards, spill modelling, and response analyses. Areas where assumptions are shown to be in error must be addressed and resolved.

It is possible that gaps shown in analysis or drilling will not be able to be addressed in the short term. Recovery and response estimates and/or drill outcomes below an adopted clean standard indicate a spill plan that requires significantly more resourcing or transit limits. If response is not possible for a significant portion of a transit route under specific environmental conditions, RCACs must have the power to limit transits to periods where response is possible. For example, in the *Technical Analysis of Oil Spill Response Capabilities and Limitations for Trans Mountain Expansion Project* referenced above, open-water spill response in the Georgia Strait was found to be not feasible 59% of the time in winter. The conditions that create a reduced ability to respond must be clearly identified and transits controlled during them. If recovery is below that threshold because of a lack of equipment and labour, shippers must be required to invest to a level that will ensure the safety of the areas in which they operate, with curtailed movement of fossil fuels until they do. This combination will provide a strong financial incentive for shippers to invest in better equipment, more personnel, and further research and development, strengthening the oil spill regime in both the short- and long-term.

It is vital that oversight and assessment of spills is both independent and seen to be so. After-incident reporting must be a requirement for releases of over 200L of liquid petroleum product. Accuracy around volumes of spilled and recovered product, and thorough spill evaluations including post-spill environmental impact assessments, are important for an oil spill regime to have legitimacy. A body of technical experts attached to RCACs will have the skills required to make informed clean up estimates and post-spill impact assessments and must be charged with reporting these in both plain language and technical documents.

Tactical prescriptions

Spill clean-up techniques should cause less biological damage than spilled oil would. This means two standard clean up techniques require deeper investigation and a prescriptive framework for use. In-situ burning and chemical dispersants, although effective at removing oil spills from immediate view, both come with a number of impacts that require further scientific and operational scrutiny. Although Transport Canada would like to see elevated use of both techniques⁴⁶ (Transport Canada 2013 report), there are serious questions around the use of both.

In-situ burning has all of the problems of combusting fossil fuels: carbon emissions, the release of harmful air pollutants, and toxic residues. Carbon emissions have climate-destabilizing impacts. Thick clouds of black smoke and toxic residue are a risk to

⁴⁶ Transport Canada, 2013, [A REVIEW OF CANADA'S SHIP-SOURCE OIL SPILL PREPAREDNESS AND RESPONSE REGIME Setting the Course for the Future](#)

local ecosystems and to human health. While the effects of large clouds of toxic smoke are generally understood, residues in water from in-situ burning are under-studied in terms of containment and recovery⁴⁷, and chronic toxicity⁴⁸. Further research is needed to understand the tradeoffs involved in using this technique, and those studies must be completed before in-situ burning is considered in oil spill plans.

Chemical dispersants were used at scale in the wake of the Deepwater Horizon disaster, with a number of scientific studies done in its wake. In these studies, dispersants were shown to cause adverse health effects on spill responders⁴⁹; to inhibit the effect of oil-eating microbes, diminishing the natural response to oil spills⁵⁰; to increase the toxicity of oil to deep-sea coral⁵¹; is highly toxic to plankton⁵², with one study pegging increased oil toxicity 52 at times normal levels⁵³. There is also evidence that dispersants are rendered less effective by sunlight⁵⁴. Taken together, this evidence indicates a high burden of proof must be met around the biological, economic and human health trade offs before the use of chemical dispersants can be allowed.

Principle four: Regulations must be transparent, comprehensive and compulsory

Transparency is a necessary component in building public trust in regulatory schemes as it provides the ability to verify the outcomes of the oil spill regime. Comprehensive requirements allow for more contingencies to be planned for with greater effectiveness. Compulsory regulations will ensure that the interests of British Columbia are always at the front rank of concerns. Elements of the transparency, comprehensiveness and compulsory nature of effective oil spill response have been detailed above. Below these principles are

⁴⁷ Shigenaka, G., Overton, E., Meyer, Buffy, Gao, Heng, Miles, Scott., 2015 [PHYSICAL AND CHEMICAL CHARACTERISTICS OF IN-SITU BURN RESIDUE AND OTHER ENVIRONMENTAL OIL SAMPLES COLLECTED DURING THE DEEPWATER HORIZON SPILL RESPONSE](#)

⁴⁸ NOAA Office of Response and Restoration, [Residues from In Situ Burning of Oil on Water](#)

⁴⁹ McGowan, Craig, Kwok, Richard, Engel, Lawrence, Stenzel, Mark, Stewart, Patricia, Sandler, Dale, 2017 [Respiratory, Dermal, and Eye Irritation Symptoms Associated with Corexit™ EC9527A/EC9500A following the Deepwater Horizon Oil Spill: Findings from the GuLF STUDY](#)

⁵⁰ Kleindienst S, Seidel M, Ziervogel K, Grim S, Loftis K, Harrison S, Malkin SY, Perkins MJ, Field J, Sogin ML, Dittmar T, Passow U, Medeiros PM, Joye SB, 2015 [Chemical dispersants can suppress the activity of natural oil-degrading microorganisms](#)

⁵¹ Ruzi-Ramos, Fisher, Baums, 2017 [Stress response of the black coral *Leiopathes glaberrima* when exposed to sub-lethal amounts of crude oil and dispersant](#)

⁵² Almaeda, Hyatt, Buskey, 2014 [Toxicity of dispersant Corexit 9500A and crude oil to marine microzooplankton](#)

⁵³ Rico-Martinez, Snell, Shearer, 2013 [Synergistic toxicity of Macondo crude oil and dispersant Corexit 9500A® to the *Brachionus plicatilis* species complex \(Rotifera\)](#)

⁵⁴ National Sciences Foundation, 2018 [Sunlight reduces effectiveness of dispersants used to clean up oil spills](#)

further examined through the lens of Geographic Response Plan development, assessment, and oversight; and loss of use.

GRP development

GRPs, whether marine or terrestrial, must be in-depth and include critical detail. Washington State detailed requirements⁵⁵ include:

- description of the sensitive areas and detailed strategies to protect the resources
- information on natural resources, coastal and aquatic habitat types and sensitivity by season
- breeding sites, presence of state or federally listed endangered or threatened species, and presence of commercial and recreational species
- physical geographic features, including relative isolation of coastal regions
- beach types and other geological characteristics

In light of content in Washington State GRPs and Alaskan Geographic Response Strategies, BC GRPs should further contain, in both written and map-based form, the following critical detail:

- location coordinates for plan sites like bases
- equipment caches
- staging areas
- at-risk resources
- boom and anchor points
- potential oil spill points and spill modeling conclusions
- internal division points for spill response strategies and response areas
- issues of local concern
- weather and climate considerations
- seasonal factors
- potentially confounding hazards and risks in the area
- notification and public engagement plans
- cross-boundary provisions
- inventories of remediation resources

The development of GRPs will require several stages of input and analysis. Operational elements of these plans will focus in on key local concerns and features, planning and clean-up standards, seasonality, spill modelling, resourcing response limits, and heaviness of oil. Outreach to the public during plan development must be both proactive and expansive, and led by RCACs. Public perspectives and specific interests must be actively sought, and all deliberations and assessments must be made public in both technical and

⁵⁵ Washington State Legislature, [Requirements for response and protection strategies](#)

plain language forms. That commitment to transparency should be maintained throughout the life cycle of fossil fuel transit operations in a GRP area.

GRPs must be devised in such a way as to harmonize and coordinate with other plans. We have detailed area response planning characteristics concepts in a past submission⁵⁶.

Once approved, spill plans must be open for public scrutiny, as should plan assessments and evaluations of drills and incidents. To maximize accessibility, assessments and evaluations must include both technical documents and a plain language summary, and be available online with paper versions for communities underserved with internet access. Summary data must harmonize as best as possible with classifications and taxonomies to make it easy for national and international comparison.

Plan reassessment

The regulations must designate clear guidelines for re-assessment. These should include a periodic assessments and of re-approval spill plans on a cycle of 5 years, as is done in Washington State⁵⁷. There must also be a number of triggers for immediate reassessment within that period. These triggers should include, but not be limited to:

- changes of 20% or more in type and/or volume of liquid petroleum products transported or stored;
- more than 5 incidents of over 200L of liquid petroleum products released in a calendar year, or 10 incidents of over 200L within a 5 year period;
- release of >10,000 L of liquid petroleum products in a single incident;
- clean up of less than 80% of spilled liquid petroleum products during an incident

Public engagement during reassessments must be a proactive seeking out of specific interests and perspectives within a geographic area, as well as a more general public outreach effort.

Loss of use

Loss of use processes must be made explicit in the regulations, have no discretionary components, and must be housed within the RCAC framework. In the event of spills above 2000L, or where specific damage can be assessed from smaller spills, loss of use processes must begin. Loss of use process must have clear and mandatory timelines, milestones, and reporting. This includes the dimensions of the incident itself, including volume of spill, the percentage of product recovered, specific impacts to ecosystems, the economy, and cultural/social features. Loss of use assessments require significant proactive outreach to the public.

⁵⁶ DeCola, 2016 [Integrated Area Response Planning in BC Best Practices for Engaging Communities and Harmonizing Oil and Hazardous Materials Spill Planning and Response](#)

⁵⁷ Washington State Legislature, [Submitting a contingency plan](#)

Categories of ecological impacts must be made as detailed as possible, with bounds, ranges and rationale as clearly delineated as possible. Loss of use assessments must include categories for ecosystem services, wildlife impacts, and damages to rare natural processes and endangered species. We also recommend that a category of damages for particularly egregious damage should be created, including the extirpation of a species or similar. As placing a value on such an outcome is impossible, it must reflect the priceless nature of the natural world and be extraordinarily high in monetary terms.

Communities impacts must be delineated with as much clarity as possible. Economic compensation must be 1:1 with lost revenues, wages, and other economic benefits that would have accrued from damaged resources, property and equipment, with further payments covering the costs of economic adaptation, like retraining, education, equipment replacement, rebuilding and the like. This should be determined from a combination of historic data and comparisons against similar areas and economic activity in BC and other jurisdictions.

Loss of use must also address the devastating social dislocation that comes in the wake of major oil spills. Included in this must be payment for significant and proactive support outreach into affected communities, to minimize the PTSD, social anxiety, and depression rates in the community⁵⁸

The size of the posted bond required to be given by polluters must take into account the costs of worst-case scenario spills involving the method of transit and types of oil in other jurisdictions, estimates of economic and ecological damage, as well as social service costs in the wake of those spills. Recent issues with polluters paying for spills, cause us to emphasize the importance of acquiring posted bonds from potential polluters.

Finally, loss of use penalties can have no maximum. A major spill is an existential threat to ecosystems, economies and communities; if that threat is realized, it must have an equally existential cost for fossil fuel shippers.

Principle five: Shippers must be able to clean up what they move

Large shippers must be required to meet the highest standards. Assurances are not enough: shippers must demonstrate their spill response effectiveness. This means meeting a specific standard for what constitutes a worst case spill, unannounced drills and thorough testing of equipment to ensure that large shippers are prepared to deal with worst-case events.

The intentions paper outlines a planning standard, with specific timelines for spill response actions to be taken. While a timeline standard is important, it is not sufficient to meet the

⁵⁸ Sandhu, 2001 [Faces of Violence](#)

standard of “world-class” or “world-leading” oil spill response advocated for by several levels of government. To have truly world-leading spill response, British Columbia must go beyond the standards of other jurisdictions and introduce a spill clean-up standard, mandating a minimum threshold for removing spilled oil from the environment.

We have an important reminder to our north as to why removal of spilled oil from the natural world is so important, in the case of the Exxon Valdez spill. Spill oiled from the Exxon Valdez disaster still lingers in Prince William Sound, and researchers working for the Exxon Valdez Oil Spill Trustee Council concluded that “[a]fter more than 25 years of natural removal processes (sediment reworking on beaches, tidal flushing, and microbial degradation), it is expected that natural removal rates going forward will be very low.”⁵⁹ The consequences for the natural world are stark: “exposure to lingering oil had effects that spanned decades for some vulnerable species” (Ibid); and lingering oil on beaches and in streams “strongly [suggest] that lethal ecological impacts continue to plague the fish and wildlife in the spill impact area.”⁶⁰ For orca pods in Prince William Sound, researchers found that the “[t]imeline to recovery for this species is unknown, and it is possible that the transient pod will never recover.”⁶¹ Salmon stocks took 13 years to recover to pre-spill levels⁶², and pacific herring stocks have yet to recover⁶³. The latter means an important local fishery valued at \$8 million/year has simply vanished from economic consideration. From 1980 to 2002, annual fisheries earnings in Prince William Sound declined from \$30 million to \$10 million⁶⁴. Human recreation and tourism are still considered “recovering” from the spill, partially because of lingering oil in the environment⁶⁵. Subsistence harvests were “severely disrupted” by the Exxon Valdez disaster, and the “massive ecological contamination and destruction of ecological resources resulted in ‘collective trauma’ for Alaska Natives” that persists to this day⁶⁶. This summary of chronic effects indicates the need for a high standard for the removal of spilled oil from the environment.

Consistently, we have seen the industry and regulators put forward clean up percentages of 80% or higher in high profile spills (see below). We advance the idea that for large shippers of oil, regardless of method of transport, they must demonstrate that they can clean up 80% of spilled product, and then must meet this recovery standard in a spill incident. Put simply, the business model of fossil fuel transportation cannot be built on putting their risk on our province as an alternative to adequate spill response. If shippers are unable to meet this standard, fossil fuel transits should be limited to times and locations that they are able to operate safely in.

⁵⁹ Michel, Esler, Nixon, 2016, [Studies on Exxon Valdez Lingering Oil: Review and Update on Recent Findings](#)

⁶⁰ Picou and Martin, 2007, [Long-Term Community Impacts of the Exxon Valdez Oil Spill: Patterns of Social Disruption and Psychological Stress Seventeen Years after the Disaster](#)

⁶¹ Michel, Esler, Nixon, 2016

⁶² Exxon Valdez Oil Spill Trustee Council, [Status of Restoration, Commercial Fishing](#)

⁶³ Exxon Valdez Oil Spill Trustee Council, 2014 [Exxon Valdez Oil Spill Restoration Plan 2014 Update Injured Resources and Services](#)

⁶⁴ Prince William Soundkeeper, [History, Culture and Economy](#)

⁶⁵ Exxon Valdez Oil Spill Trustee Council, [Status of Restoration, Recreation and Tourism](#)

⁶⁶ Picou and Martin, 2007

We begin with looking at the upper limit for spill response, the worst case scenario. Spill response regulations in this case should at least meet the standard set by Washington State⁶⁷. In all cases, the Washington State definitions involve largest possible releases complicated by adverse weather. This standard sets an important bound for preparation, and we believe that BC should at least adopt this type of standard for an upper limit.

Current practises have mixed results in cleaning up fossil fuels in marine environments, and our technological capacities are constantly evolving and growing. We have the opportunity to learn from devastating disasters, and understand that current technology weathers and reacts in the environment in ways that were not predicted in the lab or during planning. A joint scientific panel between the federal and provincial government (as suggested by Catherine McKenna, April 2018⁶⁸) could work collaboratively to foster and lay the groundwork for technological advances that can raise the bar from the 10-15% recovery on open water that the industry currently considers acceptable⁶⁹. It is possible that the goal of 80% may not be achievable with current practises and equipment. Our intention is to set the target without prescribing methods of reaching it, recognizing that the industry may not be able to achieve the level of clean up in all cases. Work is yet to be done to develop Canadian technology and practises appropriate for our legal and cultural context. This work must be iterative, ongoing, and continually improve upon itself and the work in ongoing in other jurisdictions.

The clean-up standard that BC sets must make clear that liquid petroleum products must be removed from the environment. This means directly accounting for removal and recovery, and also factor in the best independent estimates around evaporation and biodegradation. This standard must apply to the environment as a whole, meaning that stranded or sunken oil would qualify as failures of clean up.

According to Canadian regulators and the industry, this standard is achievable. After-spill reports routinely record substantial clean-up volumes of spilled product. According to Dr Kevin Timoney, AER records indicate that 53% of spills in Alberta result in 100% clean up (as compared to 3.4% in North Dakota reporting⁷⁰). In the case of the Husky pipeline spill in the North Saskatchewan River in 2016, the Saskatchewan Ministry of Environment⁷¹ reported a year later that 90% of the 225,000L spilled had been recovered. In the case of the Marathassa spill, WCMRC claimed that 80% of the volume of the 2800L spill was recovered, with less than 1L of product left on the water⁷² (this is complicated by the fact that the Coast Guard independent report puts recovery at 50%⁷³). In the case of the 2007 Kinder Morgan

⁶⁷ Washington State Legislature, [Definitions](#)

⁶⁸ Environment and Climate Change Canada, 2018, [Dear Minister George Heyman](#)

⁶⁹ ITOPF, [Containment and Recovery](#)

⁷⁰ CBC, 2017,

['Estimates of convenience': researcher says Alberta spills data too positive](#); Timoney, 2017, [A Forensic Investigation of Crude Oil and Saline Spills: Detecting Fiction, Determining Facts](#)

⁷¹ Global, 2017 [Husky oil spill cleanup continues on Sask. river one year after pipeline leak](#)

⁷² WCMRC, 2015

⁷³ Canadian Coast Guard, 2015

spill in Burrard Inlet, Transport Canada reports that 89%, or 210 m³ of the 234 m³ spill was recovered.⁷⁴

We recognize that these numbers, especially in the case of the Alberta incidents, strain credulity. The likelihood that a clean up recovered 100% of what was spilled is small, and Dr Timoney's Benford analysis revealing both spill and clean up volumes are questionable. His analysis lead him to conclude that "We don't know how much is spilled and we don't know how much is left in the environment."⁷⁵ In the case of the Marathassa spill, it offends principles of public transparency that WCMRC can announce a clean up 30% greater than that estimated by the Coast Guard. With that said, regulators and industry have demonstrated, through these reports, their awareness that Canadians demand a high-level of clean up.

Accuracy around volumes of spilled and recovered product is a key component in public trust. Along with accurate spill evaluations, clean up must be vigorously monitored and publicly reported. A body of technical experts attached to RCACs will have the skills required to make informed clean up estimates, and must be charged with reporting those volumes and how they are calculated in plain language reporting.

There are arguments made by the industry that they cannot contain and clean up more than weather conditions allow, and that they should be judged on the speed of their response⁷⁶. We doubt that British Columbians will be greatly comforted by rapid response that watches waves render containment booms useless. Oil spill theatre is not in the best interests of British Columbia. Demonstrated effectiveness is.

Limits on transits if shipper cannot meet standards, under specific bad weather conditions

Once a standard is established, regulations must begin to limit the scope and scale of fossil fuel transits until it can be met. If conditions do not allow for effective containment and cleanup under current levels of spill response resourcing and technology, then fossil fuel transits must be limited to periods where that containment and cleanup has been demonstrated to be effective. Using a combination of response gap and response capacity analysis, previous incident data, and information about the specific product being transported, a map-based index of operations can be constructed to limit transits in treacherous areas under specific environmental conditions, and shared with the general public. This will lower the periods of greatest risk, while also opening the door for industry to invest in research and development for equipment and technology that can operate in adverse conditions. The incentive will be for shippers to demonstrate they can contain and clean up spills, and to reap the competitive advantage of being safe and effective movers of product. To accentuate that incentive, there must be a cost to shippers for failing to meet the standard. Each percentage point of recovery below the 80% must incur escalating fines, with

⁷⁴ Transport Canada, 2007, [Pipeline Investigation Report P07H0040](#)

⁷⁵ CBC, 2017,

['Estimates of convenience': researcher says Alberta spills data too positive](#)

⁷⁶ CBC, 2016 [Is Canada ready for an oil spill?](#)

the formula linked to loss of use calculations. Like loss of use, such fine can have no upper bound.

Conclusions

This regulatory development process is potentially transformative for our province. As it currently stands, we have an oil spill regime that simply does not work. If the the principles and policy framework we have advanced are adopted, this can change. By placing individuals and communities with the most to lose at the centre of the oil spill regime, we answer the moral imperative that emerged from past oil spills. By ensuring the polluter pays but does not direct, we can ensure that oil spill regulations are driven by the concerns of the public and spill outcomes, not the profit motive. Independent analysis and science will result in better preparation, spill outcomes and understanding of spill impacts. Transparent, comprehensive and compulsory regulations will make sure the rules are clear to everyone, and are thorough enough to ensure that plans are strongly conceived and compensation is both sufficient and just. By adopting the principle that shippers must be able to clean up what they move, we can prevent incidents where spill response is impossible, and incentivize better spill response.

Large oil spills are low-probability/high-consequence events. We must strengthen the oil spill regime before the next devastating misstep occurs.