



FRIENDS OF ECOLOGICAL RESERVES
BOX 8477, VICTORIA, B.C. V8W 3S1
CANADA

To: Trans Mountain from the Board of Friends of Ecological Reserves December 17, 2018

Re: Information Request in the NEB Reconsideration Hearing Trans Mountain Pipeline Expansion Project (TMX) Hearing Order MH-052-2018 Board File of-Fact-Oil-T260-2013-03 59

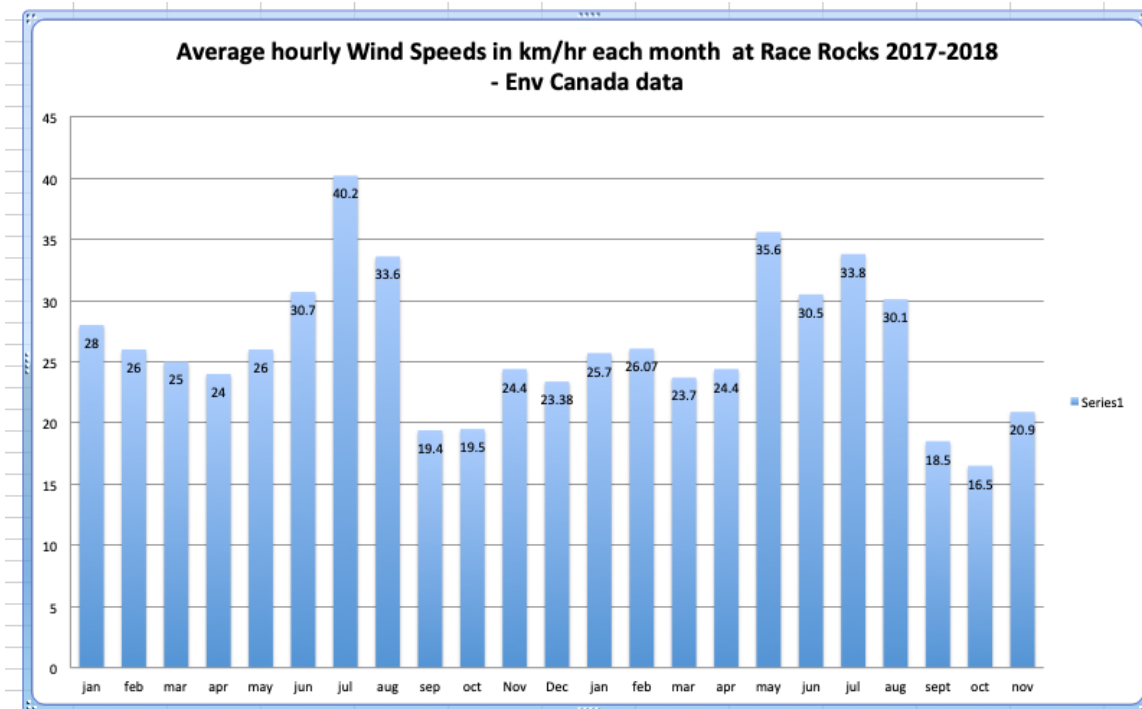
WIND SPEED DATA

Context

The Board of Friends of Ecological Reserves [Direct evidence of Dec 5 2018](#), (page 29) showed graphs for the wind speeds in the eastern entrance of the Strait of Juan de Fuca, Trial Island and Race Rocks Ecological Reserves that are situated in areas most vulnerable for ship collision. On page 80 of the same report, we show examples of graphs on wind gusts take from Government of Canada websites. From this we determined that on most days of the year, the use of booming and clean up equipment in the event of an oil spill would not be possible. Claims by WCMRC and TMX that they will be able to deal with a catastrophic oil spill are, in our opinion, just not accurate.

The following graph is from hourly wind data available from the [Environment Canada wind speed records for Race Rocks](#). The bar graphs are monthly means of this data. We bring to the attention of these hearings as the Board of FER graphs show a huge seasonal difference in wind intensity compared to the records from Neah Bay relied upon by TMX in their modelling.

Table of Average Hourly Wind Speeds at Race Rocks 2017 - 2018



Given that the hourly means of wind speed in January, June, July and August of 2017 and May, June, July and August of 2018 are 28 km/h and above on average, this indicates that it is not possible to deal with an oil spill during those times. Given that on the days when the hourly means are below 28 km/h there were almost always times of the day when wind speeds exceeded 28km/hr . The graph we presented in our evidence of December 5, 2018 shows that wind speed gusts recorded on most days at any time of year exceed 28km/h. See page 80 of [FER Final report A96487](#).

It is obvious that one cannot generalize from data obtained at the western entrance of the Strait of Juan de Fuca at Neah Bay, and conclude that that represents the profile for the whole of the Juan de Fuca tanker route.

From the TMX attachment [A96612-Attachment-5.2.6-A6L9V2.pdf](#)

Subject: *Wind Conditions at Neah Bay, Western Juan de Fuca Strait*

“Tetra Tech Canada Inc. (Tetra Tech) was retained by Trans Mountain to review Evidences submitted by Interveners as part of the NEB Reconsideration IR Process of December 2018.

Following a request from Captain Bikramjit Kanjilal, a statistical analysis of wind speeds recorded at Neah Bay weather buoy at the western end of Juan de Fuca Strait was conducted. Data from 2004 to 2013 was considered and binned into four seasons: winter (January-March), Spring (April-June), Summer (July-September), and Fall (October-December). Table 1 below presents the results, using the same wind speed bins that were used in the Trans Mountain spill modeling report. “

Table 1: Wind Conditions per Season at Neah Bay (2004-2013)

Season	Wind Conditions			
	< 16 knots (29.6 km/h)	16 – 21 Knots (29.6-38.9 km/h)	21 – 27 Knots (38.8- 50 m/h)	> 27 knots (50 km/h)
Winter	70.07%	19.11%	8.85%	1.97%
Spring	92.79%	5.74%	1.38%	0.09%
Summer	98.50%	1.27%	0.19%	0.04%
Fall	72.42%	18.50%	7.26%	1.83%

IR to TMX on wind speeds used to model oil spill and WCMRC ability to Respond.

IR- 162 Will you present the statistical analysis using a number of resources including Environment Canada for wind speeds throughout the Strait of Juan de Fuca, especially in the areas of inter-crossing traffic lanes to the East of Race Rocks. Perhaps they could request Tetra Tech Canada to do a statistical analysis using data available from Environment Canada recorded at Race Rocks.

IR- 163 Will TMX present a revised estimation of the number of days when equipment can realistically be deployed in the Strait of Juan de Fuca for oil spill clean-up.

IR- 164 Will you explain to the NEB, intervenors and the public the reality of the risk and the probability of being able to adequately protect the marine and coastal environment including the critical habitat of sensitive species including the SRKW, others on the SARA registry, and commercially and non-commercial important species in the Georgia Strait and the Strait of Juan de Fuca .

In addition to this IR related to wind speeds and response windows, the Board of FER also reviewed the IR and the correspondence between TMX and the Board of Friends of Ecological

Reserves. Transmountain has relied heavily on older reports and some of the responses to IRs dating to that time remain unclear. In the table below we restate this IRs.

Context for IR on Species at risk.

The Board of Friends of Ecological Reserves is concerned about the interpretation given by TMX as reflected in their Reply Evidence quoted in this evidence. As background, we provide first a section of the NEB directive—

[A94793-3 NEB HO - Trans Mountain Expansion - Reconsideration - A61718](#) ☆

List of Issues for the Reconsideration Hearing :The National Energy Board’s (Board) Reconsideration hearing will consider any necessary changes or additions to its May 2016 [Recommendation Report](#) (Report), in light of the inclusion of Project-related marine shipping between the Westridge Marine Terminal and the 12-nautical- mile territorial sea limit in the “designated project” under the Canadian Environmental Assessment Act, 2012 (CEAA 2012). This includes issues related to factors described in paragraphs 19(1)(a) through (h) and subsection 19(3) of the CEAA 2012, and to section 79 of the Species at Risk Act (SARA).

1. The environmental¹ effects of Project-related marine shipping, and the significance of these effects. ^[17]_[SEP]This includes adverse effects on species at risk, the environmental effects of malfunctions or accidents that may occur, and any cumulative environmental effects. ^[17]_[SEP]
2. Measures to avoid or lessen the adverse effects of Project-related marine shipping on SARA-listed wildlife species and their critical habitat, monitoring of the measures, and consideration of how to ensure the measures and monitoring are undertaken. ^[17]_[SEP]

In the [TRANS MOUNTAIN REPLY EVIDENCE December 11, 2018 A96612](#), page 16-17 the following TMX reply was made in which TMX as stated several factual errors:

4.0 MARINE BIRDS

4.1 New SARA-listed Species and Potential for Adverse Effects of Marine Transportation ^[17]_[SEP]

In the filing requirements directed to Trans Mountain and to the federal departments and agencies, the Board requested that Trans Mountain, ECCC and DFO provide information on any SARA-listed species that are likely to be affected by Project-related marine shipping and have been newly listed or that have seen a change to their designation since the date of the NEB’s report [A61718]. In response, Trans Mountain provided a table of marine bird species that are listed on Schedule 1 of

SARA, including two new species (western grebe and horned grebe) [A6J6F4, PDF p.13].

Trans Mountain notes that in ECCC's response to the Board's request for copies of the latest recovery documents (Recovery Strategies, Action Plans, and Management Plans) for all likely affected SARA-listed species, ECCC erroneously included red-necked phalarope [A6J6L9, PDF p.134] which is not SARA-listed. ECCC also included the SARA-listed common nighthawk, barn swallow, and bank swallow which are not marine birds, and PCA included several non-aquatic SARA-listed bird species known to occur in Gulf Islands National Park Reserve or Pacific Rim

³ A6L4W6, A6L7T6, A6L4U2, A6L5S6, A6L6V8, A6L6G7, A6L6I6 16

National Park Reserve [A6J6L9, PDF p.232-236]. Trans Mountain does not predict adverse environmental effects related to mortality or sensory disturbance for common nighthawk, bank swallow, barn swallow, and other non-aquatic birds in relation to marine transportation because those species are not marine bird species. “

For those of us who spend a lot of time on and near our coastline it is obvious that there could be many species that TMX may not consider to be marine bird species but nevertheless they stand to lose when the catastrophic oil spill of dilbit occurs on our shores. Bank swallows nest on many cliffs in the spray zone, in our example noted, with a photo taken at Race Rocks the barn swallow nests under a stairway that is less than 100 metres from the shoreline. At Race Rocks Ecological Reserve the whole island is in the spray zone in a storm.

Trans Mountain may not predict that these species will not be affected by adverse environmental effects related to mortality or sensory disturbance, but ignorance of the realities of habitat location is no excuse for negating the risk.

The statement about the red-necked phalarope not being SARA-listed is also wrong since the SARA Public Registry clearly states that it is, in almost all provinces of Canada, of Special Concern on the COSEWIC list ... which happens to be included on the SARA registry. It may not be on Schedule I , which seems to be the only species TMX thinks it is responsible for even though the NEB directive (see above, clearly states: *information on any SARA-listed species that are likely to be affected by Project-related marine shipping*)

The same definition of SARA-listed, not SARA Schedule 1 listed applies to the examples in the paragraph below.

TMX goes on to say:

Three intervenors, namely BC Nature and Nature Canada (“BC Nature”), FER, and NS NOPE, have expanded the definition of ‘species at risk’ in their evidence to include species that are not on

Schedule 1 of SARA. BC Nature refers to provincially listed species and species designated by the Committee on the Status of Endangered Wildlife in Canada (“COSEWIC”) [A6L6H2, PDF p.4-5 and p.9], but which are not on Schedule 1 of SARA. The FER identified 21 “SARA-listed species at Race Rocks ER” [A6L7T6, PDF p.161-162], yet ten of them are not listed on Schedule 1 of SARA (i.e., northern elephant seal, double-crested cormorant, harlequin duck [western population], Caspian tern, red-necked phalarope, snowy owl, boreal owl, quillback rockfish, Chace’s wentletrap, and mist maidens). NS NOPE erroneously included green heron on its list of SARA-listed species [A6L5F8, PDF p.5 and p.21].

The appendix referred to by the TMX statement : “The FER identified 21 “SARA-listed species at Race Rocks ER” [A6L7T6, PDF p.161-162],” contains images and names with SARA registry designations on 19 species and indeed 2 species that are just considered rare,(and note that SARA has not yet even dealt with rare marine invertebrates.)

7 of the species are on the Sara Registry, (and 1 of those as COSEWIC listed as Special Concern)

7 are on SARA registry as **Special Concern**

3 are on the SARA registry as **Threatened**

2 are on the SARA registry as **Endangered.**

For TMC to state “yet ten of them are not listed on Schedule 1 of SARA” is an incorrect conclusion.

Perhaps more of an effort could be exerted by TMX to appreciate the degree of seriousness that members of the public and non-governmental organizations who are very familiar with their local environments take when it comes to potential catastrophic disruptions of ecosystems.

In the ensuing paragraphs of the TMX statements on page 17, the nit-picking attitude taken to address what should be taken as a serious threat to sensitive ecosystems posed by the proposed marine transport component of their planned project is not constructive. Their conclusion:

“In Trans Mountain’s view, none of the evidence submitted by intervenors on marine birds identifies new threats or effects on species that were not already considered and assessed in the OH-001-2014 proceeding and in Trans Mountain’s direct evidence [A6J6F4].

Perhaps they should be reminded that the impact on the Marine Component was not part of the previous set of hearings. Perhaps efforts to suggest mitigation for these and many other ecosystem threats could have assisted in rationalizing the legitimacy of their proposal.

Inadequate responses 2016

6, 7, 8, 9, 13, 15, 17, 19, 20, 28,

IR#2-6 Please clarify why the “credible worst case scenario” (CWC) modelled and referenced above assumes that only a relatively low percent of a medium size tanker capacity is spilled and provide equivalent modelling for informed risk management, using future potentials as has been done in the research from George Washington University, 2013

Context: In the VTRA 20Int 10 – SYNOPSIS OF RMM SCENARIO COMPARISON APPLIED TO CASE T: GW– KM – DP (George Washington University, 2013), <http://www.seas.gwu.edu/~dorpir/VTRA/PSP/CASES/VT\RA%202010%20Master%20Co mparison%20-%20T%20-%20RMM.pdf> . A completely different set of models is presented because they do not follow from historical data but rather consider 2010 as the base Case year and a base case year is evaluated. Following that, What-if scenarios are developed from the base case by adding additional hypothetical traffic (upcoming if major vessel transport projects go ahead) and a “What-if” potential is evaluated and compared relative to the base case to inform risk management.

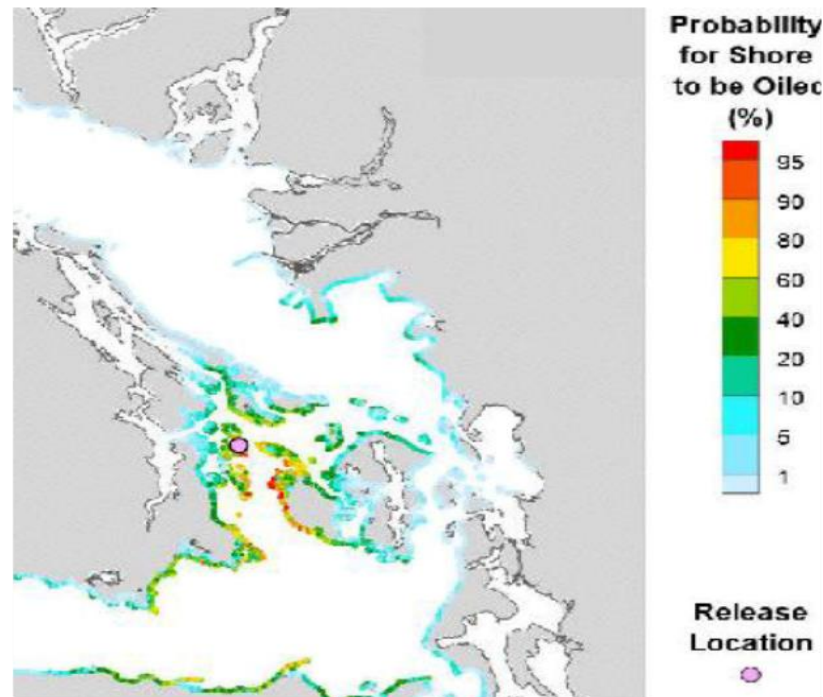
IR#2-7 How much shoreline will be oiled with spills of the 25, 50 and 75% of tanker capacity for the size of the tankers KM anticipates it will contract to transport the proposed 890,000 bbl. /daily production?

Context: In the report Document #REP- NEB-TERA- 00031 Ecological Risk Assessment of Marine Transportation

<https://docs.neb-one.gc.ca/ll-eng/llisapi.dll/fetch/2000/90464/90552/548311/956726/23>

[92873/2451003/2393244/ B19-14 -](#)

[V8B TR 8B7 01 OF 24 ERA MAR SPILL - A3S4K7.pdf?nodeid=2393426&vernum=-2](#)) it is concluded that the “Results for the CWC spill indicate a high to very high probability (≥50%) of between 143 km and 458 km of shoreline oiling, with the greatest spatial extent of shoreline oiling occurring during winter conditions. The smaller spill case predicts a high to very high probability of shoreline oiling between 94 km and 248 km.” One of the shoreline impacts modelled is shown below for Archane Reef based on a CWC winter spill



IR#2-8 Will KM provide a model that shows a release point closer to Victoria and the Oak Bay Islands ER to understand how much oil can potentially reach the shore in this section of the shipping route?

Context. Three release points were modelled Strait of Georgia, Archane Reef (near Swartz Bay) and Race Rocks west of Victoria. To understand and develop world class spill preparedness a worst case scenario off Oak

	Bay Islands will be needed. New modelling has to reflect a new Worst Case oil spill based on increases in tanker sizes and daily output to be considered credible.
IR#2-9	<p>Please clarify why the “credible worst case scenario” modelled and referenced above assumes that only a relatively low percent of tanker capacity is spilled.</p> <p>Context:</p> <p>The Exxon Valdez lost most of its cargo.</p>
IR#2-13	What is the KM plan to share and invite input by the public to the Oil Spill Response plan?
IR#2-15	<p>Will KM make available the spill preparedness plans so that the public can understand what will be in place? Context:</p> <p>The Board of FER has requested information to understand spill volumes used in the Credible Worse Case scenarios. The Board of FER is also seeking information on changes in volume of shipping of dilbit and probable changes in size of tankers that will be contracted to understand what is reasonable to maintain as oil spill cleanup infra-structure. FER is concerned about oil spills and transparency and disclosure and the serious disconnect between what WCMRC professes as a Corporation and as stated in their 2012 handbook (http://wcmrc.com/wp-content/uploads/2013/06/WCMRC-Information-Handbook-2012.pdf) which states:</p> <p>We (Western Canada Marine Response Corporation) values</p> <ol style="list-style-type: none"> 1. Open and honest communication that fosters a climate of trust. 2. Integrity in all our business practices 3. Being a steward of the environment 4. Success through competency, creativity and teamwork 5. Celebrating individual and team successes. <p>To have these good values announced as the corporate culture does mean a great deal with regard to social license. There is duplicity when TM seeks to deny access to the public and intervenor that are at undisclosed financial, environmental and cultural risk and need disclosure of the WCMRC Oil Spill Response Plan</p>
IR#2-17	<p>What baseline studies of sensitive ecological areas does TMX plan to establish or use as scientific evidence to quantify ecological restoration or recovery trends, in the event of an oil spill?</p> <p>Context: A fundamental tenant of restoration or recovery is to understand reference ecosystems which is why Ecological Reserves have been designated and exist within the Salish Sea and along the tanker route</p>
IR#2-19	<p>Please provide a clear account of from where the distillate to make Dilbit is imported, how much volume, and how often tankers laden with distillate or other compounds used to make Dilbit transit inbound in the Strait of Juan de Fuca, on their way to the Westbridge Terminal?</p> <p>Context: Board of FER is unsure how much distillate is being imported and how it will impact the environment and public health in the event of a marine spill of distillate</p>
IR#2-20	<p>What specific measures does KM plan to implement directly or through WCMRC affiliates for safe transit of Dilbit through the human communities and sensitive ecological communities along the proposed tanker routes?</p> <p>Context: This information is requested and is in keeping with provincial objectives to see this project meets world class spill standards.</p>

IR#2-
28

What are the current requirements for speed of tankers in the different sectors of the tanker route for the transit of outgoing and incoming vessels? The modelling done on potential mechanical malfunctions such as loss of rudder shows that a tanker can be grounded within 14 minutes. Please provide similar modelling such as this for the Eastern entrance of the Strait of Juan de Fuca, off Race Rocks Ecological Reserve and for Haro Strait off Oak Bay Islands Ecological Reserve. Also please include possible scenarios with a 7 knot current running off Race Rocks in both flood and ebb conditions with wind driven scenarios of up to 80 knots, from both easterly and westerly directions in the Strait of Juan de Fuca. It was also unclear from the modelling what the acceptable speed of tankers are in Canadian waters. Please explain the rationale why the WCRMC Handbook indicates that it will take 72 hours to respond to a spill at Race Rocks. (Source <http://wcmrc.com/wp-content/uploads/2013/06/WCMRC-Information-Handbook-2012.pdf>) SOURCE NOT FOUND Context. The modeling done on potential mechanical malfunctions such as loss of rudder shows that a tanker can be grounded within 14 minutes. It was unclear from the modelling what the acceptable speed of tankers is in Canadian waters. [https://docs.nbc-](https://docs.nbc)

[one.gc.ca/lleng/llisapi.dll/fetch/2000/90464/90552/548311](https://docs.nbc-one.gc.ca/lleng/llisapi.dll/fetch/2000/90464/90552/548311)

[/956726/2392873/2451003/2503819/B259-13_-](https://docs.nbc-one.gc.ca/lleng/llisapi.dll/fetch/2000/90464/90552/548311/956726/2392873/2451003/2503819/B259-13_-)

[_Juan_de_Fuca_Strait_Proposed_Tug_Escort_Simulation_Study_%2829_Aug_2014%29_-](https://docs.nbc-one.gc.ca/lleng/llisapi.dll/fetch/2000/90464/90552/548311/956726/2392873/2451003/2503819/B259-13_-/_Juan_de_Fuca_Strait_Proposed_Tug_Escort_Simulation_Study_%2829_Aug_2014%29_-)

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Below is the full correspondence between Board of Friends of Ecological Reserves and the rational provided by the Board of Friends of Ecological Reserves on why the earlier responses were inadequate.

Hearing Order OH-001-2014

Trans Mountain Pipeline ULC (Trans Mountain) Application for the Trans Mountain Expansion Project
 Motions to compel full and adequate responses to the second round of intervenor information requests (IRs)

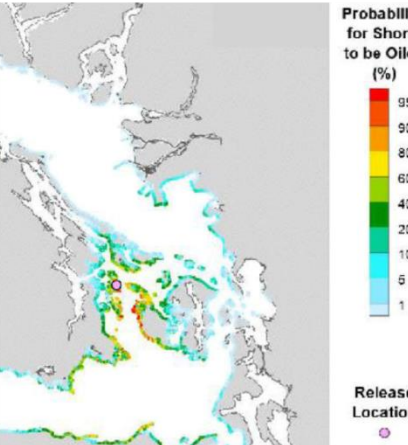
IR #	IR Wording	Trans Mountain's response to IR	Intervenor's explanation for claiming IR response to be inadequate	Trans Mountain's response to motion	Intervenor's Reply
IR#2-6	<p>Please clarify why the "credible worst case scenario" (CWC) modelled and referenced above assumes that only a relatively low percent of a medium size tanker capacity is spilled and provide equivalent modelling for informed risk management, using future potentials as has been done in the research from George Washington University, 2013.</p> <p>Context: In the VTRA 20Int 10 – SYNOPSIS OF RMM SCENARIO COMPARISON APPLIED TO CASE T: GW – KM – DP (George Washington University, 2013), http://www.seas.gwu.edu/~dorpir/VTRA/PSP/CASES/VT%202010%20Master%20Comparison%20-%20T%20-%20RMM.pdf .A completely</p>	<p>The identification of credible worst case scenario follows direction from the NEB's "Filing Requirements Related to the Potential Environmental and Socio-economic Effects of Increased Marine Shipping Activities, Trans Mountain Expansion Project" (Filing ID A3V6I2).¹ Please see Volume 8C, Termpol 3.15, Section 9 (Filing ID A3S5F8)² for more information on the credible worst case scenario. Robyn Allan, 28 May 2014, TheTyee.ca Kinder Morgan Pipeline Expansion Designed to Carry Much More Oil Trans Mountain would be built with room to largely increase export capacity.</p>	<p>This is not an adequate answer.</p> <p>Concern: Two references provided do not mention CWC scenario.</p> <p>We re-read the Hearing process order referenced in the answer (footnote 6). We find no reference to tanker capacity or limits on modeling credible worse case scenarios in the filing order. We are unclear where or who defined the size of the spill for the CWC scenario. It is implied that KM TMX was directed by the NEB but that direction has not been provided. Where NEB has determined that a CWCS is 15% of an Aframax tanker's capacity?</p> <p>It is unclear whether the NEB could advise a risk strategy given the Ocean Act direction (End Note ii)</p> <p>We remain unclear about the size and number of tanks and capacity of the project.</p>	<p>In accordance with Board Ruling No. 33 (Filing ID A63066), Trans Mountain's response provided sufficient information and detail for the Board in its consideration of the application and no further response is required.</p> <p>There was an error in one of the NEB ID links. Please note that the corrected section of our IR round 2 response should read:</p> <p>The identification of credible worst case scenario follows direction from the NEB's "Filing Requirements Related to the Potential Environmental and Socio- economic Effects of Increased Marine Shipping Activities, Trans Mountain Expansion Project" (Filing ID A3V6I2). Please see Volume 8C, Termpol 3.15, Section 9 (Filing ID A3S5F6) for more information on the credible worst</p>	

¹ Hearing Order <https://docs.neb-one.gc.ca/ll-eng/llisapi.dll/fetch/2000/90464/90552/548311/956726/2392873/2449981/2445930/A15-3 - Hearing Order OH-001-2014 - A3V6I2.pdf?nodeid=2445615&vernum=-2>

² Route Segments. <https://docs.neb-one.gc.ca/ll-eng/llisapi.dll/fetch/2000/90464/90552/548311/956726/2392873/2451003/2393359/B21-3 - V8C TR 8C 12 03 OF 03 TERMPOL 3.15 RISK ANAL - A3S5F8.pdf?nodeid=2393795&vernum=-2>

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	<p>different set of models is presented because they do not follow from historical data but rather consider 2010 as the base Case year and a base case year is evaluated. Following that, What-if scenarios are developed from the base case by adding additional hypothetical traffic (upcoming if major vessel transport projects go ahead) and a "What-if" potential is evaluated and compared relative to the base case to inform risk management.</p>		<p>This concern is heightened by the article in footnote³</p> <p>The second reference (footnote 7) provides no mention of CWC scenario. It is a summary of observation and photos made by an observer on a passage of an out- bound laden Greek tanker. The reference appears to bear no relevance to the request.</p>	<p>case scenario.</p>	

³ 28 May 2014, TheTyee.ca Kinder Morgan Pipeline Expansion Designed to Carry Much More Oil Trans Mountain would be built with room to largely increase export capacity. <http://thetyee.ca/Opinion/2014/05/28/Kinder-Morgan-Pipeline-Expansion/>

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IR#2-7	<p>How much shoreline will be oiled with spills of the 25, 50 and 75% of tanker capacity for the size of the tankers KM anticipates it will contract to transport the proposed 890,000 bbl. /daily production?</p> <p>Context: In the report Document #REP- NEB-TERA-00031 Ecological Risk Assessment of Marine Transportation</p>  <p>https://docs.neb-one.gc.ca/llisapi.dll/fetch/2000/90464/90552/548311/956726/2392873/2451003/2393244/B19-14 -_V8B_TR_8B7_01_OF_24_ER_A_MAR_SPILL -_A3S4K7.pdf?nodeid=2393426&vernum=-2 it is concluded that the "Results for the CWC spill indicate a high to very high probability (≥50%) of between 143 km and 458 km</p>	<p>Please refer to responses to FER IR No. 2.05 and No. 2.06. A loss of cargo oil more than the credible worst case scenario is not a viable scenario for a double hull tanker with multiple subdivided cargo tanks as proposed by the Project and has not been modeled. Trans Mountain is confident that the evaluation of potential environmental effects at representative locations as described in the Application fulfill National Energy Board requirements and describe the range of environmental effects that could result from an oil spill along the marine shipping route.</p>	<p>Not an adequate response.</p> <p>The responses to question 6 did not address why 15% of a tanker's hold is considered a credible worse case scenario. Even at that there are estimates of hundreds of kilometres of shoreline that will be oil impacted. The Board of Friends of Ecological Reserves and members of the public are concerned about the contingency planning. We are concerned that there may be too little infrastructure to meet a spill of greater than 15% of an Aframax tanker's capacity.</p> <p>The approach to minimized the worse case scenario is not in keeping with precautionary direction embedded in the Ocean's Act. [see end note 2] for the explicit wording of that direction.</p>	<p>In accordance with Board Ruling No. 33 (Filing ID A63066), Trans Mountain's response provided sufficient information and detail for the Board in its consideration of the application and no further response is required.</p> <p>There was an error in one of the NEB ID links. Please note that the corrected section of our IR round 2 response should read:</p> <p>The identification of credible worst case scenario follows direction from the NEB's "Filing Requirements Related to the Potential Environmental and Socio-economic Effects of Increased Marine Shipping Activities, Trans Mountain Expansion Project" (Filing ID A3V6I2). Please see Volume 8C, Termpol 3.15, Section 9 (Filing ID A3S5F6) for more information on the credible worst case scenario.</p>	

IR #	IR Wording	Trans Mountain's response to IR	Intervenor's explanation for claiming IR response to be inadequate	Trans Mountain's response to motion	Intervenor's Reply
IR#2-8	<p>Will KM provide a model that shows a release point closer to Victoria and the Oak Bay Islands ER to understand how much oil can potentially reach the shore in this section of the shipping route?</p> <p>Context. Three release points were modelled Strait of Georgia, Archane Reef (near Swartz Bay) and Race Rocks west of Victoria. To understand and develop world class spill preparedness a worst case scenario off Oak Bay Islands will be needed. New modelling has to reflect a new Worst Case oil spill based on increases in tanker sizes and daily output to be considered credible.</p>	<p>From a practical perspective, the strength of the stochastic approach is that it shows where spilled oil could go in the event of an accident, but the resulting probability contours are not a reliable guide as to where crude oil would go in the event of a single unique accident. However the probability contours generated through stochastic modelling are valuable for informing spill response and preparedness planning. They also provide a transparent and defensible basis for describing the range of environmental effects that could result from a spill along the marine shipping route. It is not practical to assess every conceivable accident and malfunction scenario. Evaluation of potential environmental effects at other sites would not have changed assessment conclusions or identified the need for additional preparedness and response planning measures. Therefore a model that shows a release point closer to Victoria and the Oak Bay Islands ER is not contemplated. Trans Mountain is confident that the evaluation of potential environmental effects at representative locations fulfills National Energy Board filing requirements (Filing ID A3V6I2) and describes the range of environmental effects that could result from an oil spill along the marine shipping route.</p>	<p>This is not acceptable answer.</p> <p>We understand that KM may not wish to complete additional modeling of oil spills having completed modelling for Archane Reef and Race Rocks. However there remains a need to model an oil spill closer to Victoria and the Oak Bay Island Ecological Reserve.</p> <p>We believe this to be true first because the report by DNV advising TMX did identify several potential accident sites one of which is off the Victoria water front. [see end note for a map of accident sitesiii] DNV anticipated an accident off the Victoria waterfront but none was modelled. This is not appropriate.</p> <p>In addition Archane Reef is 32 km east of Oak Bay Islands ER and Race Rocks ER is 23 km west of Trial islands. FER does not understand why an oil spill off shoreline of the most densely populated stretch of tanker route on Vancouver Island was not modelled.</p> <p>Therefore we believe it is a responsibility of KM to model a CWCS close to where most of the people on Vancouver Island live. [See End note for distance from the currently modelled spills to the Oak Bay Island ER which is nearer the Victoria water front. [See endnote iv.]</p>	<p>In accordance with Board Ruling No. 33 (Filing ID A63066), Trans Mountain's response provided sufficient information and detail for the Board in its consideration of the application and no further response is required.</p>	

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IR#2-9	<p>Please clarify why the “credible worst case scenario” modelled and referenced above assumes that only a relatively low percent of tanker capacity is spilled.</p> <p>Context: The Exxon Valdez lost most of its cargo.</p>	Please refer to responses to FER IR Questions 05 and 06	<p>Not an adequate answer in light of how questions 5 and 6 were responded to.</p> <p>The question of why a minor percentage of tanker capacity has been defined as a ‘Credible Worse Case’ remains unanswered. We fail to understand the rationale for the definition of CWCS at 15% of an Aframax tanker’s capacity. Is their evidence that an Aframax tanker has never spilled more than 15% of its cargo?</p>	<p>There was an error in one of the NEB ID links. Please note that the corrected section of our IR round 2 response should read:</p> <p>The identification of credible worst case scenario follows direction from the NEB’s “Filing Requirements Related to the Potential Environmental and Socio-economic Effects of Increased Marine Shipping Activities, Trans Mountain Expansion Project” (Filing ID A3V612). Please see Volume 8C, Termpol 3.15, Section 9 (Filing ID A3S5F6) for more information on the credible worst case scenario.</p>	
IR#2-13	What is the KM plan to share and invite input by the public to the Oil Spill Response plan?	Over and above consultation with emergency management professionals and first responders in communities along the pipeline corridor, Trans Mountain has endeavoured to engage with the general public about pipeline safety and emergency response. Numerous public consultation events were held in Burnaby, BC, the neighbouring communities, and around BC’s Lower Mainland since 2012. Emergency planning and response was consistently a topic presented on information boards at public events. In addition, Kinder Morgan Canada Inc. (KMC) staff with Emergency Management responsibilities attended the public events to answer questions about the emergency management	<p>This is not an adequate or full response.</p> <p>The response focuses primarily on the consultations that were done on the pipeline portion of project. Friends of Ecological Reserves has been focused on the tanker route portion of the project.</p> <p>We re-read the references provided in support of KM public consultations.⁴ The clarification for Coastal Community begins on page 209 and only forest health was mentioned as a concern identified for Coastal island communities. The names of the Islands’ coastal communities along the tanker route</p>	In accordance with Board Ruling No. 33 (Filing ID A63066), Trans Mountain’s response provided sufficient information and detail for the Board in its consideration of the application and no further response is required.	

⁴ Consultation Update No 3. <https://docs.neb-one.gc.ca/ll-eng/llisapi.dll/fetch/2000/90464/90552/548311/956726/2392873/2451003/2671531/B306-13 - Trans Mountain Response to NEB IR No. 3.005a-Attachment 1-Part 2 - A4H1W3.pdf?nodeid=2671214&vernum=-2>

IR #	IR Wording	Trans Mountain's response to IR	Intervenor's explanation for claiming IR response to be inadequate	Trans Mountain's response to motion	Intervenor's Reply
		<p>program. The general public continues to engage with Trans Mountain to ask questions about emergency response via the toll free information line (1-866-514-6700) and general email (info@transmountain.com). Trans Mountain also hosted a Twitter Town Hall on the topic of pipeline safety and emergency response on October 27, 2014. A record of the tweets can be found in Consultation Update No. 3 (Filing ID A4H1W3)[see footnote16]. Trans Mountain's engagement is ongoing. Trans Mountain will continue to ensure the public have an ability to engage and ask questions about Trans Mountain's pipeline safety and ERPs in the continued engagement. Additionally, Trans Mountain's Westridge plans may not address areas of specific community interest in the Burrard Inlet. Trans Mountain encourages Metro Vancouver local governments and communities to participate with WCMRC in exercises and on the development of oil spill emergency response plans including Geographic Response Strategies (GRS) and Geographic Response Plans (GRP) for the Burrard Inlet and, based upon the community's interest, other locations in the Salish Sea.</p>	<p>are not identified. The greater Victoria area has 13 municipalities and a population of 360,000 that can be affected by an oil spill.</p> <p>There was no mention in the answer or a reference to the open houses held on Vancouver Island, even the one that FER Board members attended at the Cedar Hill Recreation Centre in Victoria Dec 6th 2012. [Times Colonist article⁵ and ⁶] The encouragement to work with WCMRC and the transfer of all responsibility to them for on spill preparedness does not match the KM message that the spill plans do not need to be public (KM⁷) The rationale and the need for secrecy and keeping information proprietary to KM has not been made, nor does it match what WCMRC states. (see question 15 on transparency and consultations).</p>		
IR#2-15	Will KM make available the spill preparedness plans so that the public can understand what will be in place? Context:	Please refer to response to FER IR No. 2.13	This is not considered an adequate or full response. See 13 for evidence to support this assessment.	In accordance with Board Ruling No. 33 (Filing ID A63066), Trans Mountain's response provided sufficient information and detail for the Board in its consideration of the application and	

⁵ Times Colonist article on KM open house in Victoria. <http://www.timescolonist.com/news/local/jack-knox-what-s-in-kinder-morgan-pipeline-for-victoria-1.17624#ixzz2EiYTLomD>

⁶ <http://www.timescolonist.com/news/local/kinder-morgan-takes-its-case-for-a-pipeline-to-the-people-1.35597>

⁷ KM president says plans do not need to be public. <http://www.ctvnews.ca/politics/kinder-morgan-president-says-b-c-spill-plan-doesn-t-need-to-be-public-1.2246048>

IR #	IR Wording	Trans Mountain's response to IR	Intervenor's explanation for claiming IR response to be inadequate	Trans Mountain's response to motion	Intervenor's Reply
	<p>The Board of FER has requested information to understand spill volumes used in the Credible Worse Case scenarios. The Board of FER is also seeking information on changes in volume of shipping of dilbit and probable changes in size of tankers that will be contracted to understand what is reasonable to maintain as oil spill cleanup infra-structure. FER is concerned about oil spills and transparency and disclosure and the serious disconnect between what WCMRC professes as a Corporation and as stated in their 2012 handbook (http://wcmrc.com/wp-content/uploads/2013/06/WCMRC-Information-Handbook-2012.pdf) which states:</p> <p>We (Western Canada Marine Response Corporation) value:</p> <ol style="list-style-type: none"> 1. Open and honest communication that fosters a climate of trust. 2. Integrity in all our business practices 3. Being a steward of the 			no further response is required.	

IR #	IR Wording	Trans Mountain's response to IR	Intervenor's explanation for claiming IR response to be inadequate	Trans Mountain's response to motion	Intervenor's Reply
	<p>environment</p> <p>4. Success through competency, creativity and teamwork</p> <p>5. Celebrating individual and team successes.</p> <p>To have these good values announced as the corporate culture does mean a great deal with regard to social license. There is duplicity when TM seeks to deny access to the public and intervenor that are at undisclosed financial, environmental and cultural risk and need disclosure of the WCMRC Oil Spill Response Plan</p>				

IR #	IR Wording	Trans Mountain's response to IR	Intervenor's explanation for claiming IR response to be inadequate	Trans Mountain's response to motion	Intervenor's Reply
IR#2-17	<p>What baseline studies of sensitive ecological areas does TMX plan to establish or use as scientific evidence to quantify ecological restoration or recovery trends, in the event of an oil spill?</p> <p>Context: A fundamental tenant of restoration or recovery is to understand reference ecosystems which is why Ecological Reserves have been designated and exist within the Salish Sea and along the tanker route</p>	<p>In 2013, WCMRC initiated the development of a new coastal mapping system. This new system, still under development, will house not only coastal sensitivities and associated Geographic Response Strategies (GRS) but also all associated logistical support information. Shoreline sensitivities, as noted above, form part of WCMRC's mapping database. GRS is a plan used for the initial nearshore response in an emergency situation. The program utilizes local knowledge to assist in shoreline sensitivity classification to possible oiling. As for shoreline protection strategies, these are built, in conjunction and/or reviewed with local stakeholders (e.g., Emergency Planners/First Nations) to address the sensitivities that have been identified as part of the coastal mapping project. Each sensitivity has a corresponding geographic response strategy and protective assignment developed and ready to be implemented in the event of a spill. Each feature is then field-tested and a two-page reference document is developed and reviewed with government agencies. The goal of a GRS is to protect sensitive natural and cultural features while reducing decision-making time during an actual spill. GRSs are designed to provide all the necessary information required to carry out an efficient and rapid shoreline response. Cleanup endpoints and post-spill monitoring regarding ecological restoration or recovery are typically set to best restore habitat use. These incident-specific goals are determined by a Net Environmental Benefit Analysis as detailed in the response to FER IR No. 2.01</p>	<p>The is a partial response and not adequate.</p> <p>We are pleased to hear about a new inventory system WCMRC is involved with but request more details of the proposed new system and who is involved and a time line.</p>	<p>In accordance with Board Ruling No. 33 (Filing ID A63066), Trans Mountain's response provided sufficient information and detail for the Board in its consideration of the application and no further response is required.</p>	

IR #	IR Wording	Trans Mountain's response to IR	Intervenor's explanation for claiming IR response to be inadequate	Trans Mountain's response to motion	Intervenor's Reply
IR#2-19	<p>Please provide a clear account of from where the distillate to make Dilbit is imported, how much volume, and how often tankers laden with distillate or other compounds used to make Dilbit transit inbound in the Strait of Juan de Fuca, on their way to the Westridge Terminal?</p> <p>Context: Board of FER is unsure how much distillate is being imported and how it will impact the environment and public health in the event of a marine spill of distillate</p>	<p>By "distillate", Trans Mountain assumes that the intervenor is referring to the typically diluted bitumen diluent, which is natural gas condensate (condensate). Condensate is a low-density mixture of hydrocarbon liquids that are present as gaseous components in the raw natural gas produced from many natural gas fields. It condenses out of the raw and is collected in liquid form. Producers of diluted bitumen products obtain condensate from national and international sources to use as a diluent in diluted bitumen products. Westridge Marine Terminal is not equipped to receive any hydrocarbon product other than jet fuel and Trans Mountain does not produce or supply condensate to diluted bitumen producers.</p>	<p>Inadequate answer because the source and transport of diluent remains undisclosed. Is this transported by rail and where does it originate?</p> <p>We believe that the KM project is responsible for disclosing and addressing the environmental impact of distillate as well as export dilbit. We understand from an article From The Tyee that:</p> <p><i>Until 2005, Canada produced enough of its own condensate to export the tarry product. But as raw bitumen exports grew by leaps and bounds, industry experienced a widespread diluent shortage. At first industry imported condensate from the U.S. When that didn't satisfy demand, a hefty volume of "non-NAFTA diluent began entering the western Canadian diluent pool," or more than 78,000 barrels a day. Much of it poured through the port of Kitimat, B.C. There it was loaded on train cars and shipped to Fort McMurray. A lot of this condensate came from Asia, the Middle East, Venezuela, Peru, Bolivia and even Pakistan.*</i></p> <p>Is TMX saying that all the condensate that will be used for the TMX pipeline will be found on site in Alberta?</p> <p><i>In the event of a spill to water, it is possible that large portions of dilbit will sink and that submerged oil significantly changes spill response and impacts. We also recommend that the Final EIS include means to address the additional risks of releases that may be greater for spills of dilbit than other crudes.</i></p>	<p>In accordance with Board Ruling No. 33 (Filing ID A63066), Trans Mountain's response provided sufficient information and detail for the Board in its consideration of the application and no further response is required.</p>	

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			<p><i>For example, in the Enbridge spill, the local health department issued voluntary evacuation notices based on the level of benzene measured in the air.</i></p>		
IR#2-20	<p>What specific measures does KM plan to implement directly or through WCMRC affiliates for safe transit of Dilbit through the human communities and sensitive ecological communities along the proposed tanker routes?</p> <p>Context:</p> <p>This information is requested and is in keeping with provincial objectives to see this project meets world class spill standards.</p>	<p>From the background to this information request Trans Mountain assumes that the information requested pertains to marine oil spills. Based on an evaluation undertaken by Western Canada Marine Response Corporation (WCMRC), Trans Mountain has proposed an enhanced marine oil spill response regime in the Application to the National Energy Board which will be implemented by WCMRC. A summary of proposed improvements to WCMRC's capacity can be found</p> <p>in Volume 8A, Table 5.5.3 (Filing ID A3S4Y6).⁸</p>	<p>This is not an Adequate response.</p> <p>Table 5.5.3 PROPOSED IMPROVEMENTS TO WCMRC'S EMERGENCY RESPONSE CAPACITY is not reassuring as the maintenance of MPV capacity is MPV centred for WCMRC whereas the risk is on Vancouver Island. This does not match need to have a majority of the deployments for WCMRC be located in Sidney on Vancouver Island and further west in the Sooke Area. There is no recognition of a need to centre infra structure on Vancouver Island.</p> <p>We were quite specific in asking about human safety and harm to the environment from release of toxic substances.</p> <p>We also remain concerned that the toxic elements and human health are unstated. As Pointed out by another intervenor :</p> <p>http://docs.neb-one.gc.ca/fetch.asp?language=E&ID=A662961.16</p> <p>ii. Unpublished Canadian Department of Fisheries and Oceans Report:</p>	<p>In accordance with Board Ruling No. 33 (Filing ID A63066), Trans Mountain's response provided sufficient information and detail for the Board in its consideration of the application and no further response is required.</p>	

⁸ <https://docs.neb-one.gc.ca/ll-eng/llisapi.dll/fetch/2000/90464/90552/548311/956726/2392873/2451003/2393783/B18-32 - V8A 5.4.4.7.2 TO T5.5.3 MAR TRANS ASSESS - A3S4Y6.pdf?nodeid=2393683&vernum=-2>

IR #	IR Wording	Trans Mountain's response to IR	Intervenor's explanation for claiming IR response to be inadequate	Trans Mountain's response to motion	Intervenor's Reply
			<p><i>"Ecotoxicological Impacts of Aquatic Contaminants Related to Oil and Gas Resource Development" prepared by Aquaponika Ltd. that focuses most of its attention on what's not known about bitumen's properties including: no peer-reviewed reports on possible toxic biological effects; little on how bitumen or dilbit behaves in water; no studies on how the different concentrations of metals in bitumen behave</i></p> <p><i>compared with those in conventional oil; little known on how condensate used to dilute bitumen for transport behaves in a body of water; no studies on the specific ways bitumen interact with living organisms; not enough research on airborne toxicity associated with the tar sands not enough research on the interaction of bitumen, the environment and dispersants; and little known about behavior of bitumen in the icy, dark waters of the Canadian Arctic.</i></p> <p>Although this appears to deal with the Arctic it appears that uncertainty may easily extend to other scientific research on Dilbit.</p> <p>Can you please provide access to this document and indicate how its recommendations are different from those you have presented.</p> <p><i>"We have learned from the 2010 Enbridge spill of oil sands crude in Michigan that spills of diluted bitumen (dilbit) may require different response actions or equipment from response</i></p>		

IR #	IR Wording	Trans Mountain's response to IR	Intervenor's explanation for claiming IR response to be inadequate	Trans Mountain's response to motion	Intervenor's Reply
			actions for conventional oil spills. These spills can also have different impacts than spills of conventional oil. [...]		
IR#2-28	<p>What are the current requirements for speed of tankers in the different sectors of the tanker route for the transit of outgoing and incoming vessels? The modelling done on potential mechanical malfunctions such as loss of rudder shows that a tanker can be grounded within 14 minutes. Please provide similar modelling such as this for the Eastern entrance of the Strait of Juan de Fuca, off Race Rocks Ecological Reserve and for Haro Strait off Oak Bay Islands Ecological Reserve. Also please include possible scenarios with a 7 knot current running off Race Rocks in both flood and ebb conditions with wind driven scenarios of up to 80 knots, from both easterly and westerly directions in the Strait of Juan de Fuca. It was also unclear from the modelling what the acceptable speed of tankers are in Canadian waters. Please explain the rationale why the WCRMC Handbook</p>	<p>This information request is answered in several parts:</p> <p>a) What are the current requirements for speed of tankers in the different sectors of the tanker route for the transit of outgoing and incoming vessels? All vessels across the world, including Canada, requires under law that mariners follow the International Regulations for Preventing Collisions at Sea (COLREGS).</p> <p>Rule 6 mandates that "Every vessel shall at all times proceed at a safe speed so that she can take proper and effective action to avoid collision and be stopped within a distance appropriate to the prevailing circumstances and conditions". Safe speed is determined by the master and pilot. Tanker speed in Vancouver harbour is kept to about 6 knots. Speed of tankers along the shipping route are generally expected to be in the range of 10-14 knots, depending on weather conditions, requirements of escort tugs, maneuvering conditions, etc.</p> <p>b) Please provide similar modelling such as this for the Eastern entrance of the Strait of Juan de Fuca, off Race Rocks Ecological Reserve and for Haro Strait off Oak Bay Islands Ecological Reserve. Also please include possible scenarios with a 7 knot current running off Race Rocks in both flood and ebb conditions with wind driven</p>	<p>This has not been adequately answered.</p> <p>Please explain the rationale why the WCRMC Handbook indicates that it will take 72 hours to respond to a spill at Race Rocks. (Source http://wcmrc.com/wp-content/uploads/2013/06/WCMRC-Information-Handbook-2012.pdf)"</p> <p>From our question : "The modelling done on potential mechanical malfunctions such as loss of rudder, shows that a tanker can be grounded within 14 minutes. Please provide similar modelling such as this for the Eastern entrance of the Strait of Juan de Fuca, off Race Rocks Ecological Reserve and for Haro Strait off Oak Bay Islands Ecological Reserve. It was unclear from the modelling what the acceptable speed of tankers is in Canadian waters." For the Race Rocks or Oak Bay Islands Ecological Reserve this essentially means there is no protection possible and no possibility of any mitigation in the event of a catastrophic event. We find this to be totally unacceptable.</p> <p>Further, mentioning all the information about PMV along the tanker route, is not relevant to us. It makes for further unnecessary reading to reply to the question asking about the Strait of Juan de Fuca. Please be more direct. If you cannot ensure protection (for instance tethered tug assistance well beyond Race Rocks), be</p>	<p>In accordance with Board Ruling No. 33 (Filing ID A63066), Trans Mountain's response provided sufficient information and detail for the Board in its consideration of the application and no further response is required.</p>	

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	<p>indicates that it will take 72 hours to respond to a spill at Race Rocks. (Source http://wcmrc.com/wp-content/uploads/2013/06/WCMRC-Information-Handbook-2012.pdf)</p> <p>Context. The modeling done on potential mechanical malfunctions such as loss of rudder shows that a tanker can be grounded within 14 minutes. It was unclear from the modelling what the acceptable speed of tankers is in Canadian waters. https://docs.neb-one.gc.ca/lleng/llisapi.dll/fetch/2000/90464/90552/548311/956726/2392873/2451003/2503819/B259-13 - Juan de Fuca Strait Proposed Tug Escort Simulation Study - Aug 2014 - A4A7R2.pdf?nodeid=2504221&vernum=-2</p>	<p>scenarios of up to 80 knots, from both easterly and westerly directions in the Strait of Juan de Fuca. A Project-related tanker losing propulsion or steering or both in the vicinity of Race Rocks is a very low likelihood event. However, in order to ensure due diligence and explore the consequence of such an occurrence, navigation simulation modeled upon extremely conservative but credible assumptions was carried out and submitted to TERMPOL. The simulation results have been considered and addressed in the additional precautionary measures proposed by Trans Mountain including the expansion of escort tug use. Trans Mountain believes that diligent evaluation and determination of the consequence of machinery failure onboard a partly loaded Aframax tanker as proposed by the Project has been conducted, which meets the National Energy Board's filing requirements. Further modeling as requested by the intervenor will therefore not be undertaken. It was also unclear from the modelling what the acceptable speed of tankers are in Canadian waters. Please refer to response to FER IR No.2.28a.</p> <p>d) Please explain the rationale why the WCMRC Handbook indicates that it will take 72 hours to respond to a spill at Race Rocks. (Source http://wcmrc.com/wp-content/uploads/2013/06/WCMRC-Information-Handbook-2012.pdf)</p> <p>Western Canada Marine Response Corporation (WCMRC) must demonstrate compliance with Transport Canada (TC) regulations governing certified Response Organizations (RO). To</p>	<p>straight up about it and indicate so.</p> <p>Your statement <i>"Trans Mountain believes that diligent evaluation and determination of the consequence of machinery failure onboard a partly loaded Aframax tanker as proposed by the Project has been conducted, which meets the National Energy Board's filing requirements. Further modeling as requested by the intervenor will therefore not be undertaken."</i></p>		

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		<p>become a certified RO, WCMRC must adhere to planning standards published by Transport Canada (TC). Planning standards are established benchmarks around which ROs build their response systems. Planning standards are not performance standards. A summary of current federally mandated response times and capacity requirements is provided in the Table below:</p> <table border="1" data-bbox="668 681 1243 997"> <thead> <tr> <th data-bbox="668 681 730 762">Area Type</th> <th data-bbox="730 681 864 762">Response Organization Tier 1 150 tonnes</th> <th data-bbox="864 681 1019 762">Response Organization Tier 2 1,000 tonnes</th> <th data-bbox="1019 681 1143 762">Response Organization Tier 3 2,500 tonnes</th> <th data-bbox="1143 681 1243 762">Response Organ Tier 4 10,000 tonnes</th> </tr> </thead> <tbody> <tr> <td data-bbox="668 762 730 842">Designated Port (PMV)</td> <td data-bbox="730 762 864 842">Deployed on-scene in Designated Port (dedicated resident equipment) 6 hours from time of notification</td> <td data-bbox="864 762 1019 842">Deployed on-scene in Designated Port 12 hours from time of notification</td> <td data-bbox="1019 762 1143 842">Not Applicable</td> <td data-bbox="1143 762 1243 842">Not Applicable</td> </tr> <tr> <td data-bbox="668 842 730 913">Inside PAR/ERA</td> <td data-bbox="730 842 864 913">Not Applicable</td> <td data-bbox="864 842 1019 913">Not Applicable</td> <td data-bbox="1019 842 1143 913">Delivered on-scene within the PAR/ERA from time of notification 18 hours</td> <td data-bbox="1143 842 1243 913">Delivered on-scene within the PAR/ERA from time of notification 72 hours</td> </tr> <tr> <td data-bbox="668 913 730 997">Outside PAR/ERA Inside Outside PAR/ERA : Inside GAR</td> <td data-bbox="730 913 864 997">Not Applicable</td> <td data-bbox="864 913 1019 997">Not Applicable</td> <td data-bbox="1019 913 1143 997">Delivered on-scene 18 hours from time of notification plus travel time</td> <td data-bbox="1143 913 1243 997">Delivered on-scene 72 hours from time of notification plus travel time</td> </tr> </tbody> </table> <p>Under the proposed response system enhancements to support the Project, the following voluntary response times have been proposed:</p> <ul data-bbox="668 1205 1243 1727" style="list-style-type: none"> • Within the Port of Vancouver (existing boundaries including Delta Port) - two hours to commence response on a spill up to 2, 500 tonnes size. • Outside Port of Vancouver to "J" Buoy - six hours to commence response on a spill up to 2, 500 tonnes size. • Additional equipment necessary to deal with a 20,000 tonne oil spill will be cascaded in within 36 hours of initial notification for entire IRA. • Offshore of Buoy "J" (outside IRA) existing legislated response time (72-hours + travel time) will remain in effect. 	Area Type	Response Organization Tier 1 150 tonnes	Response Organization Tier 2 1,000 tonnes	Response Organization Tier 3 2,500 tonnes	Response Organ Tier 4 10,000 tonnes	Designated Port (PMV)	Deployed on-scene in Designated Port (dedicated resident equipment) 6 hours from time of notification	Deployed on-scene in Designated Port 12 hours from time of notification	Not Applicable	Not Applicable	Inside PAR/ERA	Not Applicable	Not Applicable	Delivered on-scene within the PAR/ERA from time of notification 18 hours	Delivered on-scene within the PAR/ERA from time of notification 72 hours	Outside PAR/ERA Inside Outside PAR/ERA : Inside GAR	Not Applicable	Not Applicable	Delivered on-scene 18 hours from time of notification plus travel time	Delivered on-scene 72 hours from time of notification plus travel time			
Area Type	Response Organization Tier 1 150 tonnes	Response Organization Tier 2 1,000 tonnes	Response Organization Tier 3 2,500 tonnes	Response Organ Tier 4 10,000 tonnes																					
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Board of FER thanks the NEB for their support in these older but pertinent IRs.