

**MH-052-2018**

**Trans Mountain Pipeline ULC (Trans Mountain)  
Reconsideration of the Trans Mountain Expansion Project (Project)  
File Number OF-Fac-Oil-T260-2013-03 59**

**District of North Vancouver  
Information Request No. 1 to the Department of Justice  
(on behalf of various Federal Departments and Agencies)**

**1. Recreational Boating**

**Reference:** A95299-20, Department of Justice (on behalf of various Federal Departments and Agencies), Opening statement and direct evidence, 2.B.1 Enhanced Maritime Situational Awareness

**Topic 6: Marine safety, navigation, and disturbance – Transport Canada p.7**

**Preamble:** Parks in the District of North Vancouver (District) provide significant recreational benefits and attract local, regional and international visitors. The District has 1.48 kilometres of shoreline at Cates Park/Whey-ah-Wichen (the Park) (including the Indian Arm side) which is the largest waterfront park in North Vancouver. Waterfront access in the parks is highly used and highly valued by residents and visitors. The Park is highly used for special events as well as for its waterfront access and boat launch. The Park boat launch is regionally significant as there are limited boat launching options for recreational boats in the Burrard Inlet/Indian Arm. The Park is also used for non-power boat activities, such as kayaking and canoeing.

The Oceans Protection Plan (OPP) has a number of initiatives that relate to recreational boating, including: Enhanced Maritime Situational Awareness, Proactive Vessel Management, Reducing the Threat of Vessels on Marine Mammals, and Abandoned Boats.

**Request:**

- a) Do any of the updated initiatives in the OPP, in light of the Trans Mountain Expansion Project, address or affect recreational boating in the District?

- b) Are there any plans to look at recreational boating access for Burrard Inlet from a socio-economic perspective?

## 2. Anchorages

**Reference:** A95299-20, Department of Justice (on behalf of various Federal Departments and Agencies), Opening statement and direct evidence, 2.B.8 Anchorages

**Preamble:** As part of the OPP, Transport Canada is developing a national anchorages initiative for the identification of anchorages and best practices for the behavior at anchor (outside of the jurisdiction of a Canada Port Authority or a public port). The goal is to ensure that no one coastal community is overwhelmed with large freighters in their near shore waters. This initiative will lead to the development of a national anchorage framework and best practices guide for ships at anchor.

**Request:**

- a) Are there any changes planned to the existing anchorages in Burrard Inlet in the vicinity of the District? This includes any new anchorages or changed use of existing anchorages.
- b) It is noted that the anchorage initiative will develop a best practices guide for ships at anchor outside of ports. Will any new approaches identified in the proposed best practice guide for ships at anchor be reviewed for potential application within the port?

## 3. Regional Response Planning

**Reference:** A95299-20, Department of Justice (on behalf of various Federal Departments and Agencies), Opening statement and direct evidence, 2.B.12 Regional Response Planning p.16

**Preamble:** Regional Response Planning is a key element of the OPP that will bring together results from other initiatives and apply them to planning, preparedness and response for marine oil spills. The pilot project is building integrated plans that include notification and alerting procedures. The plans will include risk assessment based on a methodology developed collaboratively.

The guidance document prepared by Health Canada (2018) is directed primarily at public health and emergency management practitioners responsible for the public health management of chemical incidents. It is intended to assist in the development of emergency preparedness plans and in the design of scenarios for emergency exercises.

The Health Canada (2018) section on evacuation and sheltering in place notes that public safety should be the over-riding priority.

**Request:**

- a) How are Health Canada recommendations being incorporated into regional response planning for the Lower Mainland?
- b) Will there be a specific annex in the Greater Vancouver Integrated Response Plan (“GVIRP”) and an emergency exercise which provides information for first responders and the environmental unit in the Unified Command regarding air quality considerations for public and first responder safety?
- c) Will there be emergency exercises for a marine spill scenario which includes air quality issues and coordination with local governments and appropriate local health authorities for making evacuation or shelter in place decisions?
- d) What real-time air quality data will be provided to local emergency planners in the event of a large or credible worst-case scenario spill and how quickly will it be provided?
- e) When a marine spill happens, who decides what area comprises the initial hazard risk area for immediate response?
- f) Is Health Canada planning to utilize the national public emergency alert system in the event of a significant marine oil spill in Burrard Inlet?
- g) What are the expected time frames for acute exposure limits for air quality contaminants to be within safe categories in the event of a large-scale marine spill? How long might a shelter in place order be required?

#### 4. Spill Response Cost Recovery

**Reference:** A95299-20, Department of Justice (on behalf of various Federal Departments and Agencies), Opening statement and direct evidence 2.B.18 Legislative Amendments to Key Legislation

##### **Modernize Canada's Ship-Source Oil Pollution Fund p.25**

**Preamble:** A number of amendments to the Marine Liability Act are discussed by the Federal Departments and Agencies to ensure that Canada's Ship-Source Oil Pollution Fund is suitably adapted to provide effective and adequate compensation to all Canadians.

Both Canada's and the international frameworks are based on the principle of "polluter pays" which makes the polluter liable for all response costs and damages associated with an oil spill (Transport Canada). In the event of an oil spill from a tanker in Canadian waters, the owner of the tanker (*i.e.* the Responsible Party) would be liable for the cost of clean-up and compensation to affected parties subject to the limits of their liability.

To ensure that funds can be provided more quickly to responders, the amendments to the Marine Liability Act would allow the Fund to provide emergency funding to the Canadian Coast Guard to respond to a significant oil spill. The Canadian Coast Guard would use these funds to respond to the oil spill as well as compensate third parties for their response activities under its direction. These amendments are intended to create a simplified and expedited process for small claims.

The GVIRP advises that local governments are responsible for collecting information on their costs incurred in responding to the spill and pursuing cost recovery from the Responsible Party as required.

District staff are familiar with the Emergency Management BC Disaster Financial Assistance (DFA) program and have experience with the emergency response and recovery measures and limits to recovery claims as well as administration of processing.

**Request:**

- a) Are there outstanding expense claims by local governments that were affected and responded to the MV Marathassa spill in 2015? What percentage of expense claims have been paid to date? What is the anticipated timeline to have any outstanding expenses resolved?
- b) Please provide details on the simplified and expedited process for small claims through the Coast Guard. Does the claim process include recovery of the direct and indirect economic impacts to District residents from a spill, including compensation for restrictions to quality of life and enjoyment of property, impacts to property values as the result of a spill and claims related to health care concerns.
- c) How would these amendments proposed in the OPP assist local governments in recovering expenses arising from the direct and indirect economic impacts from an accidental spill, including impacts to public property and infrastructure, first responder response costs, loss of workforce and productivity as a result of response costs, health-care and litigation costs? What is the anticipated timeline for processing a small claim for local government? What is the threshold to define a small claim?
- d) Is there a role for the Province in assisting with cost recovery for local governments? If yes, what is the role of the Province in processing the claims.

**5. Health-related Spill Concerns**

**Reference:** A95299-20, Department of Justice (on behalf of various Federal Departments and Agencies), Opening statement and direct evidence Reference: 2.E. Pillar 4: Investing in oil spill research and spill response methods

**Topic 5: Marine oil spills – Environment and Climate Change Canada/Fisheries and Oceans Canada/Natural Resources Canada p.43-44**

**District of North Vancouver Climate Change Adaptation Strategy (July 2017)**

**Preamble:** The update from the federal agencies includes investments in oil spill research and spill response methods to ensure that decisions taken in emergencies are

evidence-based. Since the initial NEB review, new information has become available and the federal government has improved its understanding of the fate and behavior of petroleum products, including diluted bitumen, should they spill into fresh or marine waters. With respect to diluted bitumen specifically, federal scientists have communicated that they have made considerable progress, including peer-reviewed and guidance documents on oil fate and behavior, physical/chemical properties, petroleum forensics, spill countermeasures, field response, remote sensing, and oil spill modelling.

The District has submitted its Climate Change Adaptation Strategy that was finalized in July 2017 as evidence in the Reconsideration. The District is experiencing climate change now. Since 1980, temperatures have increased by approximately 1.2 °C and in recent years, the District has experienced a number of extreme climate-related events, including record-setting summer temperatures and multiple heat-wave warnings. The major types of climate change projected for the 2050s relative to a 1980s baseline includes:

- Average annual temperatures are projected to increase by approximately 2.9°C
- The average number of hot summer days (above 30°C) is expected to increase from 2 to 13 days per year
- The temperature of extreme hot days expected to happen once every 20 years (a 5% chance of occurring any year) is projected to increase from 33°C to 38°C

The GVIRP identifies response partner roles for Burrard Inlet in Appendix 1.

Health Emergency Management BC (HEMBC-Lower Mainland) specifically supports Fraser Health, the Provincial Health Services Authority, Vancouver Coastal Health and Providence Health Care. HEMBC-Lower Mainland would be involved if the health and safety of human populations is impacted by a spill. Vancouver Coastal Health would provide expertise through input into decisions for protecting human health and advising the public, including but not limited to the need for evacuation or shelter in place for air exposure to contaminants in initial hours of a spill and establishing criteria for lifting an evacuation/shelter in place order.

**Request:**

- a) Has there been new research specifically on the air contaminants that will result from a spill in fresh or marine waters? Does this research include evaporation rates

during summer high temperature events? Does it include summer temperatures that are projected to occur in the Project area in the 2050s?

- b) Does this improved understanding of the fate and behavior of diluted bitumen in the context of human health considerations change anything from previous assessments by Health Canada?
- c) Have HEMBC-Lower Mainland, Vancouver Coastal Health and/or Fraser Health been asked for input into areas of research that could assist them in providing expertise into decisions to protect human health in a marine spill scenario?

## 6. Risks of Dispersants

**Reference:** A95299-20, Department of Justice (on behalf of various Federal Departments and Agencies), Opening statement and direct evidence Reference 2.E.2 Oil Spill Fate, Behavior and Response Technology

### **Health Canada Guidance for the Environmental Public Health Management of Crude Oil Incidents (2018)**

**Preamble:** The OPP alternate response measures (ARMs) program includes spill treating agents, including dispersants, surface washing agents and other chemical treatments to mitigate the environmental impacts of a spill. There is a recognition that that these approaches include a different suite of benefits and risks. It is our understanding that a science-informed analysis of the risks associated with each available option (i.e. net environmental benefits analysis (NEBA)) would be evaluated as part of the spill response.

The intended purpose of dispersants is to break up oil slicks on the water's surface by increasing the rate at which oil droplets form and move into the water column. Chemical dispersion does not reduce the amount of oil entering into the marine environment; rather, it changes where it goes and how quickly it gets there. The District previously asked questions on the use of Corexit and was advised that it was not approved for use in Canada and was not likely to be used in Burrard Inlet.

There is new information that Corexit was approved for use in Canada in June 2016.

The Health Canada Guidance for the Environmental Public Health Management of Crude Oil Incidents (2018) notes that chemical dispersants used to break up oil spills in water may pose risks to human health either directly or as a result of exposure routes for and bioavailability of various toxic chemicals contained in the dispersed oil.

**Request:**

- a) How is the potential impact to human health taken into account in the NEBA analysis for the potential use of a dispersants?
- b) Is there information available from the recent research on the dispersants in the ARMs program that has been reviewed by Health Canada or local health authorities? Were any concerns identified for human health if dispersants are used near populated areas?
- c) Is there new research available for human health risk assessment specifically on the acute and chronic toxicity for a combination of dispersant(s) and the diluted bitumen products expected to be transported in the Trans Mountain Expansion Project?

**7. GHG Emissions and Climate Change Goals**

**Reference:** A95299-20, Department of Justice (on behalf of various Federal Departments and Agencies), Opening statement and direct evidence 5.C.1. Greenhouse gas emissions (GHGs) p.92

**Katowice Climate Package, December 15, 2018**

**<https://unfccc.int/news/new-era-of-global-climate-action-to-begin-under-paris-climate-change-agreement-0>**

**Preamble:** In the September 26, 2018 letter to Intervenors and others, the NEB requested information on four specific topics, stating that “Given the Board found four significant adverse effects related to project-related marine shipping in its original assessment (i.e. greenhouse gas emissions, Southern resident killer whale, traditional Aboriginal use associated with Southern resident killer whale, and the

potential effects of a large or credible worst-case spill), the consideration of mitigation measures will focus on these four matters. This will include consideration of whether the mitigation measure will change the Board's previous significance findings". As noted in the List of Issues in the direction for Reconsideration, the Board does not intend to consider the environmental and socio-economic effects associated with upstream activities, the development of oil sands, or the downstream use of the oil transported by the pipeline expansion. Any comments provided outside of the construction and operational GHGs for the actual pipeline expansion were not considered

On October 8<sup>th</sup>, 2018, the Intergovernmental Panel on Climate Change (IPCC) released its "Special Report on Global Warming of 1.5<sup>o</sup>C" which the District submitted as evidence in the Reconsideration. The IPCC report notes that limiting global warming to 1.5<sup>o</sup>C would require rapid, far-reaching and unprecedented changes in all aspects of society. The report reviews the benefits to people and natural ecosystems in limiting global warming to 1.5<sup>o</sup>C compared to 2<sup>o</sup>C. This special report was a key scientific input into the Katowice Climate Change Conference in Poland in December 2018 when governments review the Paris Agreement from 2015 to tackle climate change. Officials from nearly 200 countries including Canada agreed to a set of guidelines to implement the 2015 Paris agreement – this agreement is referred to as the Katowice Climate Package.

The Katowice Climate Package is designed to operationalize the climate change regime for the Paris Agreement. Countries are encouraged to factor the outcome of the dialogue into efforts to increase their ambition to reduce GHGs and to update their nationally determined contributions, which detail nations' climate actions in 2020.

The International Maritime Organization (IMO) sets marine vessel emissions standards with global application under the International Convention for the Prevention of Pollution from Ships (MARPOL Annex VI) Convention. P.92 (Federal parties' response to NEB questions, October 31, 2018). Transport Canada notes that Canada has been working with the IMO, of which Canada is a member state, to address GHG emissions in the international maritime sector. In 2018, the IMO agreed to an initial strategy on the reduction of GHGs and a path to reduce total annual GHG emissions from marine shipping by at least 50% by 2050. There is a vision to phase emissions out entirely in alignment with the Paris Agreement.

Table 1. p. 94 of the federal evidence notes that project emissions for tankers to the 12-mile limit are 76,200 tonnes CO<sub>2</sub> annually and identifies options for tanker speed reduction. There is additional discussion on the potential reduction of GHG emissions based on penetration rate of Energy Efficient Design Index (EEDI) for Aframax size tankers calling at Westridge Marine Terminal.

**Request:**

- a) Does the approval of the Trans Mountain Expansion Project and its associated increase in GHG emissions as a result of marine shipping allow Canada to meet its international commitments in the Paris Agreement and the Katowice Climate Package to reduce GHGs?
- b) Will there be any new consideration of GHG emissions associated with the Project to include upstream and downstream GHG emissions in light of the IPCC Special Report (2018) and the recent COP24 UN Climate Change Conference 2018 in Katowice, Poland? If yes, is there data on the increased emissions that will result from the project approval?
- c) Can Canada make its emission reduction targets needed in the next 12 years to limit global warming to 1.5<sup>0</sup>C if the Trans Mountain Expansion Project is approved?

**8. Updating Risk Assessments**

**Reference:** A95299-20, Department of Justice (on behalf of various Federal Departments and Agencies), Opening statement and direct evidence 5.C.3 Marine Oil Spills p.102

**Final Argument District of North Vancouver**

**Preamble:** The final argument of the District to the NEB on January 12, 2016 identified significant environmental and public health risks to the District and sensitive ecological areas on its waterfront. The key issues of concern to the District are:

- a) Environmental impacts of the project, including air quality, human health, parks, natural environment and ecology; and
- b) Emergency spill response, both planning and execution.

It is appreciated that the Government of Canada has several ongoing science and research initiatives related to oil spill preparedness and response. There is an issue of timing as a number of the efforts underway that will inform the District's assessment of whether its concerns have been addressed will not be completed before the Reconsideration process is completed.

**Request:**

- a) Has the risk assessment for the original Trans Mountain Expansion Project Application been updated to reflect the marine safety improvements proposed as part of the OPP?
- b) Have the comments from Health Canada (letter of comment 2015) been addressed in the Human Health Risk Assessment consideration?

**9. Risks to Mudflats and Wildlife**

**Reference:** **A95299-20, Department of Justice (on behalf of various Federal Departments and Agencies), Opening statement and direct evidence, 6.C.2.1 Summary of Previous ECCC Written Evidence p.110**

**Preamble:** The District is a municipality with a land area over 160 km<sup>2</sup> located on the North Shore of Burrard Inlet, directly across from the Westridge Marine Terminal. The District's natural features, including rivers, wetlands, forests and marine waterfront, provide a spectacular setting and strong community identity from socio-economic, recreational and environmental perspectives. The waterfront contributes immensely to the values and lifestyle of 85,238 District residents. There are over 40 kilometers of shoreline frontage comprised of District-owned, private residential and commercial land, all of which border on Burrard Inlet and Indian Arm. This includes the Conservation Area at Maplewood Flats, operated by the Wild Bird Trust, which is the last remaining undeveloped waterfront wetland on the North Shore - its importance as bird habitat is internationally recognized.

In its written evidence for the original Project review, Environment and Climate Change Canada (ECCC) provided expert information and knowledge in relation to the potential for Project impacts on marine birds from spills. It remains ECCC's view in 2018 that a large scale spill resulting from the Project has the potential to result in significant impacts to marine birds.

The District had previously asked a number of questions related to the potential impacts to wildlife as the result of a marine spill. The response was that the Application, Volume 7, Section 4.8 outlined the process to enhance Kinder Morgan Canada Inc.'s (KMC) existing emergency management programs as they relate to the Trans Mountain Pipeline system to address the needs of the Project and that the final programs would be developed in a manner consistent with the NEB's draft conditions related to emergency response (Filing ID A3V8Z8). The response stated that "Although the information requested is not within the scope of this proceeding and not relevant to the NEB List of Issues, Trans Mountain Pipeline ULC (Trans Mountain) offers the following response to your question:

Recovery and treatment of impacted wildlife is a very specialized discipline requiring specific training and equipment. KMC has a wildlife recovery contractor with federal migratory permits and provincial rehabilitation permits on contract for immediate response to an incident across the TMPL system. The contractor will respond with the appropriate scale of equipment and trained personal as the situation requires.

**Request:**

- a) Does the ECCC expert knowledge identify new specific concerns related to air quality impacts to marine birds in the event of a spill?
- b) Is there a need for air quality monitoring equipment to identify air contaminants in the vicinity of the Maplewood tidal mudflats for wildlife and human health purposes and any mitigation measures that could limit exposure during the first 6 hours of an oil spill?
- c) Have there been any changes or updates to the wildlife rescue and recovery programs available in the Project area in the past 3 years? Is there adequate wildlife emergency response capacity available in our region in the event of a worst case spill?
- d) Please provide any new details on the specific facility requirements for the successful care of oiled wildlife. Please provide any updates on pre-planning and pre-identification of potential sites for the Wildlife Care Centre.

## 10. Dilbit Cleanup

**Reference:** A95299-20, Department of Justice (on behalf of various Federal Departments and Agencies), Opening statement and direct evidence 6.C.3.2 ECCC Response – Information on Research and Findings related to the Fate and Behavior and Clean-up of Oil Spilled in Marine Environments p. 118

**A3S5G2, Application of Volume 8C, TERMPOL Reports, TR 8C-12, S7. – A study of Fate and Behavior of Diluted Bitumen Oils on Marine Waters**

**Preamble:** The update provided by the federal agencies notes ECCC is conducting work to evaluate the physiochemical properties of diluted bitumen through the OPP and as part of its research activities. The evidence provided summarizes the finding of several studies that look at the efficacy and applicability of traditional spill countermeasures for the unique composition of the engineered products created by blending condensate and crude oils with the heavy bitumen from the oil sands.

**Request:**

- a) In ECCC's expert opinion, has the recent research on the cleanup considerations for dilbit informed the risk assessment associated with a large marine spill?
- b) Does ECCC have an updated opinion as to the feasibility of cleaning up diluted bitumen on the sediment types identified in the District's previous evidence submitted in OH-001-2014?
- c) Are there any updates in the past 3 years on the clean-up strategies that could be deployed in Burrard Inlet, particularly for mudflat substrate environments?
- d) Based on known spill clean-up technologies available at this time, what is the estimated % recovery of dilbit product on the shoreline types identified in the District's previous evidence submitted in 2015?

## 11. Spill Response Hazard Assessment

**Reference:** A95299-20, Department of Justice (on behalf of various Federal Departments and Agencies), Opening statement and direct evidence 6.C.3.2 ECCC Response –

**Information on Research and Findings related to the Fate and Behavior and Clean-up of Oil Spilled in Marine Environments p. 128 Emergency preparedness p. 188**

**Heath Canada, 2018. Potential Health and Safety Concerns for Oil Spill Responders working in proximity to spills of unconventional crude oil**

**Preamble:** A recent literature search study completed in 2017 examined health and safety concerns and identified tools for government personnel that are required to work in close proximity to dilbit spills. It was noted that characteristics of dilbit can differ from conventional crude oils largely as result of the small molecular weight of the condensate portion of dilbit. It notes that evaporation of the dilbit could result in the rapid transfer of 12-16% by weight of the mass to air within the first 6 hours of a spill. It is noted that there is a potential inhalation and contact threat to first responders under certain significant spill scenarios.

Recommendations for air quality monitoring instrumentation, chemical protective clothing, medical monitoring and decontamination protocols were put forth. The literature search study was followed by work to (1) undertake a task hazard analysis for ECCC personnel and then develop safe work procedures; and (2) undertake training guidance documents for on-site safety planning, including protective equipment and other tools for use by ECCC staff.

The update provided by the federal departments notes that the Canadian Coast Guard launched the Regional Response Planning Oceans Protection Plan initiative, which is piloting a collaborative, transparent, integrated, holistic and risk-based approach to planning and preparing for marine oil spills in Northern British Columbia. The methodology being developed and lessons learned in the Northern British Columbia Pilot are applicable to ongoing environmental response planning efforts in the rest of the country, including southern British Columbia.

The GVIRP for marine pollution incidents is designed to serve as a guide for multi-agency on-water response to serious oil pollution events in the area of English Bay and Burrard Inlet.

**Request:**

- a) Is there a change to the potential air quality impacts in the original assessment with the evaporation of the dilbit could result in the rapid transfer of 12-16% by weight of the mass to air within the first 6 hours of a spill?
- b) Has the work been completed for the task hazard analysis and safe work procedures for ECCC personnel? If yes, when?
- c) Has the work been completed for the training guidance documents for on-site safety planning including protective equipment and other tools for use by ECCC staff? If yes, when?
- d) Have the recommendations for air quality monitoring instrumentation, chemical protective clothing, medical monitoring and decontamination protocols been shared with other first responders including local governments and indigenous communities?
- e) Are the task hazard analysis and guidance documents planned to be a reference or appendix in the GVIRP?

**12. New Health Canada Guidance re. Spill Response**

**Reference:** A95299-20, Department of Justice (on behalf of various Federal Departments and Agencies), Opening statement and direct evidence 8A. p.195

**Health Canada's 2015 Letter of Comment (Exhibit A4S0Z6)**

**New HC Guidance for the Environmental Public Health Management of Crude Oil Incidents – A guide Intended for Public Health and Emergency Management Practitioners published in 2018.**

**Preamble:** Health Canada (HC) is the federal department responsible for helping Canadians maintain and improve their health. HC provided the NEB with specialist or expert knowledge for air quality, drinking and recreational water quality, noise, contamination of country foods and human health risk assessment. Consistent with subsection 5(1)(c) of CEEA 2012, HC focused its analysis on impacts of the

Project on the health of indigenous peoples and paid special attention to health concerns raised by indigenous peoples during the assessment process.

There is a reference to the new HC Guidance for the Environmental Public Health Management of Crude Oil Incidents – A guide Intended for Public Health and Emergency Management Practitioners published in 2018.

**Request:**

- a) Does the information in the 2018 HC Guidance change the findings and recommendations in the Health Canada Letter of Comment for first responders and general public health risks?

**13. Human Health Exposure in Spill Response**

**Reference:** A95299-20, Department of Justice (on behalf of various Federal Departments and Agencies), Opening statement and direct evidence, 8A. p.195

**A56004, Application Volume 5B, 7.2.8, Community Health p.7-198**

**Health Canada's 2015 Letter of Comment (Exhibit A4S0Z6)**

**Preamble:** Health Canada is the federal department responsible for helping Canadians maintain and improve their health. HC provided the NEB with specialist or expert knowledge for air quality, drinking and recreational water quality, noise, contamination of country foods and human health risk assessment.

The most densely populated communities in British Columbia live on the shores of Burrard Inlet. The District has approximately 13,000 residents living within 4 kilometres of Westridge Marine Terminal. Burrard Inlet is a waterway that is used by recreational boaters and commercial boat traffic. It is surrounded by commercial, industrial and residential properties as well as several popular parks. There are also District residents who reside in water-access-only properties in Indian Arm. In the event of a land-based or marine spill that results in product entering the marine environment, there is the potential for on-water exposure to the spill for recreational boaters, other commercial water traffic and near-shore residents.

The potential for contaminant, noise and odour effects, both under normal construction/operations conditions and in the context of spills, have been raised repeatedly by health officials, local residents and other stakeholders and were specifically raised during a panel presentation on the Project hosted by the District in September 2013.

It was our previous understanding in the 2015 review that within 2-3 hours of a spill, the lighter fractions of oil begin to evaporate. Depending on temperature, wind and the volume of the spill, there are air quality, health and potential fire concerns. In particular benzene, H<sub>2</sub>S and 10% LEL are of concern. If a spill is large enough, public evacuations may be required. In order to understand the potential requirement for public evacuations and to allow for pre-plans to be updated, advance spill modelling and air quality modelling should be done over several different spill scenarios and volumes up to and including the worst case scenario as recommended by the Tanker Safety Expert Panel (complete discharge of tanker oil cargo and bunker fuel). The results of such air quality modelling are needed to assess the potential health effects which in turn would provide guidance for the planning and prediction of when evacuations or shelter in place decisions may be needed.

**Request:**

- a) In the event of a spill, please provide updated details on how the concerns of District residents who have health concerns related to their potential exposure to air contaminants (i.e. benzene) will be addressed. In the event of a marine spill, are there adequate medical resources available to address these concerns?
- b) Please provide updated details on how the emergency plan will address human health risk exposure for recreational boats on the water, including boat launches in parks and marinas.
- c) Please provide updated details on the availability and time required for set-up of the air quality monitoring equipment listed in the Emergency Response Plan for Westridge Terminal. Please provide details specific to the District.

## 14. Updating Spill Response

**Reference:** A95299-20, Department of Justice (on behalf of various Federal Departments and Agencies), Opening statement and direct evidence

**Emergency Response Plan - Westridge Marine Terminal (A4D3F1)**

**A Review of Canada's Ship-Source Oil Spill Preparedness and Response Regime - Setting the Course for the Future, Nov. 2013, Transport Canada, pp. 14-15**

**Preamble:** The most densely populated communities in British Columbia live on the shores of Burrard Inlet. The District has approximately 13,000 residents living within 4 kilometres of Westridge Marine Terminal. A land based or marine spill and/or vessel fire in Burrard Inlet has the potential to affect the residents and surrounding environment in the District.

Both references above allude to acquiring local government assistance in the event of an emergency. Reference (i) – Public Evacuation specifically states that “...duties will be turned over to local response agencies as soon as possible”. This indicates that the North Shore Emergency Management Office (NESEM), RCMP and the District Fire Department are expected to play a primary role in responding to an emergency relating to Trans Mountain’s operations. All three North Shore municipalities work together collaboratively on emergency planning and response. NSEM currently maintains evacuation pre-plans for the three municipalities.

Recommendation #1 from the Tanker Safety Expert Panel states that Transport Canada should require response organizations to have in place the arrangements for cascading resources and mutual assistance agreements necessary to address a worst-case discharge in their areas of response. The Panel defines a “Worst-Case Discharge” as "a complete discharge of a tanker's oil cargo along with its bunker fuel, or for a non-tanker vessel, the complete release of its bunker fuel".

The MIDOSS Project is a model of the impact of dilbit and oil spills in the Salish Sea that is a three year project funding by the Marine Environmental Observation, Prediction and Response (MEOPAR) Network of Centres of Excellence and by

Ocean Networks Canada (ONC). This project seeks to improve scientific knowledge and tools to support evidence-based planning for oil spills. The Salish Sea and coastal communities are at risk of marine oil spills from various ship sources, including tankers carrying diluted bitumen (dilbit), which are projected to increase.

The initial NEB review identified that there were two different models that look at spill modelling and air quality impacts – the work undertaken by Trans Mountain and the work undertaken by Metro Vancouver. There are different results and the modelling is based on different size spill events.

**Request:**

- a) Will spill modelling currently underway with the MIDOSS Project (OPP) be conducted for a worst-case scenario? Will there be a review of Trans Mountain's Emergency Response Plan using these scenarios to review the requirements specified by the federal Tanker Safety Expert Panel for a worst-case spill response scenario?
  
- b) In light of updates from the federal agencies and increased knowledge of the fate and behavior of dilbit, would an emergency related to a marine vessel in Burrard Inlet, such as an oil spill into the water and/or vessel fire on the water, have any updated requirements for public evacuations or shelter in place in the District? If so, please provide details on the range of emergency scenarios that could require public evacuation or shelter in place in the District.

**15. Air Quality Risk and Response**

**Reference: A95299-20, Department of Justice (on behalf of various Federal Departments and Agencies), Opening statement and direct evidence**

**A96510-1 Condition 6 Commitment Tracking Table V.20 Nov 2018 A6L8G8**

**Air Quality and Emergency Evacuations / Shelter in Place**

**Reference:**

- (i) **Planning Protective Action Decision-Making: Evacuate Or Shelter-In-Place?**  
**[http://emc.ornl.gov/publications/PDF/ornl\\_2002\\_144.pdf](http://emc.ornl.gov/publications/PDF/ornl_2002_144.pdf)**

**(ii) Emergency Response Plan - Westridge Marine Terminal: Sections 8 & 9 (A4D3F1)**

**Preamble:** The most densely populated communities in British Columbia live on the shores of Burrard Inlet. The District has approximately 13,000 residents living within 4 kilometres of Westridge Marine Terminal. Ref. (i) states, “Deciding whether to evacuate or to shelter-in-place is one of the most important questions facing local emergency planners responding to a toxic chemical release. That such a complex decision with such important potential consequences must be made with such urgency places tremendous responsibility on the planners and officials involved.”

The Table of Commitments (Nov 2018) includes:

112. Trans Mountain is committed to engaging with the District of North Vancouver on the notification process regarding an unlikely event of a release. This has been superseded by the Emergency Response Plans.

774. Trans Mountain committed to the Province of BC that as part of the Emergency Management Program (EMP), Trans Mountain will review information regarding shelter-in-lace to ensure suitable messaging is incorporated into response plans and public awareness materials. It is noted that this has been superseded by NEB Conditions and that the planning process for NEB C-123 and C-125 will include the review of public safety messaging and the appropriate updates to response plans and public awareness materials.

309. Trans Mountain made a commitment to the District of North Vancouver to install a new ambient air quality monitoring station at the Westridge Marine Terminal related to District of North Vancouver I.R. No. 1.5.03d. This has been superseded by NEB Condition 52. There is a requirement for an Air Quality Management Plan for Westridge Marine Terminal. DNV has significant concerns about possible vapour cloud or plume that would result from oil spill in Burrard Inlet and would pose significant risk to health and safety of first responders and the public. Ongoing air quality monitoring and mechanism for rapid communication of any risk to local government must be in place with consultation with the North Shore Emergency Management input.

In terms of long-term health effects related to the Trans Mountain Expansion Project, diesel particulates from increased marine traffic are significant and are a concern for the Burrard Inlet air shed. Increased marine traffic will increase the

population's exposure to hydrocarbon particulate matter. Diesel particulates are carcinogenic, linked to respiratory illness, and are responsible for 66% of the lifetime cancer risk in the Metro Vancouver region. Fugitive vapours from tankers are also of concern.

**Request:**

- a) What is the updated plan for air quality monitoring equipment as requested by the District?
- b) What is the proposed timing of the planning process for NEB C-123 and C-125? Will the review of public safety messaging and the appropriate updates to response plans and public awareness materials be included?
- c) What is the planned timing for consultation with local governments on the Westridge Air Quality Monitoring Plan (NEB Condition 52)?

**Preamble:**

With respect for the need for computer modelling, Ref. (i) states, "Computer simulation models may be necessary to support these detailed analyses because the problem is too complex or has too many dimensions to analyze on paper. If models are utilized, it is important that the analyst and people using the results of the analysis are familiar with the assumptions of the model(s), understand the general nature of how the model works and understand the limits and uncertainty of the model and its results. This includes the person(s) legally responsible for making the protective action recommendation and decision. If this decision maker(s) does not understand or trust the analyses that were performed during planning, an inappropriate recommendation could result".

**Request:**

- a) In the event of an emergency, what detailed analyses will be done by Trans Mountain to provide input to local emergency planners to inform the decision making for evacuation or shelter-in-place for District residents who could be exposed to potential health impacts?
  - (i) How will this information be provided to first responders during an emergency?

- (ii) What is a time estimate for the availability of outputs from the computer simulation models?
  - (iii) How many different scenarios have already been tested and do they include a worst case scenario as defined by the Expert Panel for Tanker Safety under challenging weather conditions?
- b) Please provide additional details on how decisions would be made for District residents to evacuate or shelter in place. Who makes this decision in the first few hours of the emergency response?

## 16. Submerged Oil Response

**Reference: A95299-20, Department of Justice (on behalf of various Federal Departments and Agencies), Opening statement and direct evidence**

- (i) Application Volume 7, Risk Assessment and Management of Pipeline and Facility Spills, Section 4.8.2.5 Spill Response Tactics Properties (A3S4V5)
- (ii) Composition and Marine Spill Behaviour, Fate and Transport of Two Diluted Bitumen Products from the Canadian Oil Sands: [http://www.ec.gc.ca/scitech/6A2D63E5-4137-440B-8BB3-E38ECED9B02F/1633\\_Dilbit%20Technical%20Report\\_e\\_v2%20FINAL-s.pdf](http://www.ec.gc.ca/scitech/6A2D63E5-4137-440B-8BB3-E38ECED9B02F/1633_Dilbit%20Technical%20Report_e_v2%20FINAL-s.pdf)
- (iii) Emergency Response Plan; Westridge Marine Terminal; Section 4.6 Response Tactics for Shorelines p. 8 of 15 Section 4.7 Response Tactics for Sunken or Submerged Oil (A4D3F1)

**A77045-1 NEB Board Report Recommendation for Trans Mountain Expansion Project – OH-001-2014**

**Preamble:** “The Board is of the view that depending on weathering state and environmental conditions, spilled diluted bitumen could be prone to submergence in an aquatic environment. A number of parties filed evidence confirming this view. This potential for submergence must be considered in response planning.”

The District is located along Burrard Inlet and Indian Arm. Water circulation in the Burrard Inlet-Indian Arm system is basically estuarine with lower salinity surface

waters flowing down the inlet overlying more saline waters at depth entering from the Strait of Georgia. There are a number of unique conditions in the Burrard Inlet-Indian Arm system, including areas of turbulent mixing in the vicinity of the First and Second Narrows. In Reference (ii), the information on the composition and marine spill behavior of diluted bitumen indicates that it has the potential to sink when mixed with sediments and organic matter with wave action. Reference (iii) differentiates between submerged oil (lies below the surface of the water) and sunken oil (product on the bottom). Oil that has fallen below the surface can also resurface elsewhere.

As new information available since the initial NEB review, the federal government has improved its understanding of the fate and behavior of petroleum products, including diluted bitumen, should they spill into fresh or marine waters. With respect to diluted bitumen specifically, federal scientists have communicated that they have made considerable progress, including peer-reviewed and guidance documents on oil fate and behavior, physical/chemical properties, petroleum forensics, spill countermeasures, field response, remote sensing, and oil spill modelling.

**Request:**

- a) Please provide an updates on the expected behavior of diluted bitumen based on the additional research undertaken by the federal departments on the expected fate and behavior of diluted bitumen in the event of marine spill. Does this change the original assessment in the discussion of the potential for submerged or sunken diluted bitumen product in the vicinity of Cates Park, the Conservation Area at Maplewood Flats, in and around the First and Second Narrows Bridges and in the entrance to Indian Arm.
- b) Please describe the anticipated efficacy (e.g. % of submerged and sunken oil recovered) and limitations (conditions in which it cannot be used, (e.g. depth of water, weather, etc.) for the cleanup techniques.
- c) Please provide any updated details on field studies or documented examples that demonstrate the physical recovery of submerged or sunken diluted bitumen from an actual spill event.

- d) What is the status of the completion of the Geographic Response Plans for all areas of the North Shore? Has this work included adequate outreach to all appropriate communities to properly identify sensitive environmental areas, high public use areas, culturally significant areas and other features?