

**Trans Mountain Pipeline ULC  
Trans Mountain Expansion Project  
NEB Hearing Order MH-052-2018  
Responses to Information Request to  
Federal Departments regarding  
NEB Reconsideration of Aspects of its Recommendation Report  
as directed by Order in Council P.C. 2018-1177 from  
District of North Vancouver**

**08. 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?

**Response:**

- a) None of the various risk assessments have been updated to reflect any of the marine safety improvements proposed in the Ocean's Protection Plan.

In its original Project Application, and outlined in its Direct Evidence (Filing ID [A6J6F4](#)) in this proceeding, Trans Mountain submitted extensive risk assessments including a detailed environmental and socio-economic assessment (ESA), a Human Health Risk Assessment as well as a quantitative assessment of effects resulting from potential oil spills in the marine environment. No consideration was given to possible mitigation such as oil spill response activities, or any future marine safety regime improvements, in the

assessment of the initial damage to the environment that could result from an oil spill. These risk assessments, including their underlying assumptions, were tested and adjudicated in the OH-001-2014 proceeding.

It is Trans Mountain's view that any improvements identified within the Oceans Protection Plan, if implemented, would theoretically reduce the risk assessed in the OH-001-2014 proceeding. However, Trans Mountain's risk assessments do not require any changes as these have been prepared taking a more conservative approach to assessing risk, including risk of oil spill, from Project-related marine shipping.

### 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:

- 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.

**Response:**

- b) The health and safety of employees, responders and the public are paramount in all incidents. Immediate notification and the timely assessment of the condition of air quality provide valuable information, allowing for assessment of public health risk and protection of neighbouring communities.

Applicable response plans that may be activated in the event of a spill at the Westridge Marine Terminal (WMT) include Western Canada Marine Response Corporation's (WCMRC) Oil Spill Response Plan, Trans Mountain's WMT Emergency Response Plan, and the Greater Vancouver Integrated Response Plan (GVIRP). All of these plans are available publicly and employ a consistent approach with regards to spill response and incident management.

In the unlikely event of a spill, including incidents occurring at the WMT, a coordinated response will be initiated, and a Unified Command established. The Unified Command will include representation from the Responsible Party (e.g., the vessel operator for ship-source spills), the directly impacted Indigenous community, as well as relevant federal, provincial and local government authorities. Unified Command's purpose during an incident is to identify response priorities, set key objectives and provide overall guidance through an inclusive decision-making process. Unified Command makes strategic decisions, such as the actions required to protect public safety and human health.

Westridge Marine Terminal is a manned facility, with equipment on-site, such as the containment boom, which will be deployed during tanker loading, or equipment that would be deployed immediately in the unlikely event of a spill, so that the spilled oil would be contained quickly and recovery initiated quickly. Facility personnel would immediately take action, including alerting people in the immediate vicinity and instructing and assisting them, as needed, to move upwind and away from the spill; securing the perimeter of the facility; and restricting any further access of the public to the facility and surrounding property.

Upon notification of an incident at the WMT, the Air Monitoring Team is mobilized immediately. The Air Monitoring Team comprises pre-identified third-party contractors who are selected based on technical knowledge, relevant experience, and response times. Air quality monitoring surveys would be initiated to measure hydrocarbon and other chemical vapour levels in the air as soon as possible, and the information would be used, in part, to guide decision-making with respect to public health and safety, including the need for continued environmental surveillance and management of public access to the area. Access would only be allowed if public health and safety were not threatened; otherwise, access would be restricted until monitoring revealed vapour levels to be within acceptable limits based on comparison against baseline and/or other appropriate reference levels and/or air quality objectives/guidelines developed for the protection of

public health. Shelter-in-place advisories would be issued as an interim measure, if warranted, to reduce exposure to the chemical vapours in the short-term. If vapour levels were such that public health and/or safety were threatened, evacuation of the area could be ordered by the appropriate authorities.

- c) The protection of air quality in an emergency is a priority for Trans Mountain. The timely assessment of the condition of air quality provides valuable information, allowing for assessment of public health risk and protection of neighbouring communities.

Upon discovery or notification of an incident, the Air Monitoring Team is mobilized immediately. The Air Monitoring Team is comprised of pre-identified third-party contractors based on technical knowledge, relevant experience and response times. The third-party contractor will mobilize to the location of the spill and begin ambient air monitoring as soon as possible.

All of Trans Mountain's initial responders and third-party contractors will arrive on site with personal air monitoring equipment that they will use to obtain accurate and reliable data to assist in the development of the initial health and safety plan, as well as an incident-specific air monitoring plan, which is scaled according to the magnitude of the spill. The time required to set up the air quality monitoring equipment depends upon incident and site specific requirements which cannot be known in advance.

The initial on-site results will also identify if there are any potential public safety concerns.

## 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:**

[The following IR was labelled "IR No. 15a" in the Information Request Trans Mountain received. It was renumbered to "IR No. 15.1a" by Trans Mountain to avoid double numbering.]

- 1a) What is the updated plan for air quality monitoring equipment as requested by the District?

[The following IR was labelled "IR No. 15b" in the Information Request Trans Mountain received. It was renumbered to "IR No. 15.1b" by Trans Mountain to avoid double numbering.]

- 1b) 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?

[The following IR was labelled "IR No. 15c" in the Information Request Trans Mountain received. It was renumbered to "IR No. 15.1c" by Trans Mountain to avoid double numbering.]

- 1c) What is the planned timing for consultation with local governments on the Westridge Air Quality Monitoring Plan (NEB Condition 52)?

**Response:**

- 1a) As noted above in Commitment 309 (in response to District of North Vancouver IR No. 1.5.03d [Filing ID [A3Y2J7](#)]) and superseded by NEB Condition 52, the air quality monitoring equipment specified for the Westridge Marine Terminal was finalized in the Air Emissions Management Plan (AEMP). NEB Condition 52 identified several air contaminants including oxides of nitrogen, sulphur dioxide, ozone, respirable particulate matter (PM<sub>2.5</sub>), hydrogen sulphide, mercaptans, black carbon (diesel particulate matter), volatile organic compounds, and reduced visibility to be monitored continuously, and the results of ambient measurements made available on a web-based reporting platform for public access. These measurements would address the air contaminants associated with any potential health-based effects and environmental effects from normal operations, marine vessel emissions, and any uncontrolled releases. Meteorological measurements and passive sampling at two locations would also be reported.

Section 3.0 of the AEMP shows a figure with the proposed location of the new station on the Westridge site plan and lists the proposed makes and models of the ambient air quality monitors and meteorological equipment to be deployed (Filing ID [A5K4Q3](#)).

- 1b) In accordance with NEB Condition 123, Trans Mountain must file an Evacuation Plan for potentially affected people in areas at each terminal, including the Westridge Marine

Terminal. The Plans are to be prepared in consultation with Appropriate Government Authorities, first responders, and potentially affected Aboriginal groups with the authority to issue evacuation or shelter-in-place orders during an emergency.

As per NEB Conditions 125 and 126, and requirements under BC EAO Condition 32, Trans Mountain must also file updated detailed Emergency Response Plans for the Pipeline and Terminals, including Westridge Marine Terminal.

In all instances, Trans Mountain must file the plans at least 6 months prior to the commencement of operations.

Further, as part of its continual enhancement of the Emergency Management Program, and to meet requirements specified under NEB Conditions 90 and 117, Trans Mountain has undertaken efforts and continues to engage in meaningful dialogue and engagement with appropriate Government Authorities, potentially affected Indigenous groups, first responders and landowners along the pipeline corridor, as well as those that could be affected by a pipeline incident. Consultation sessions are designed to be inclusive, progressive, and open to the identified entities throughout all phases of the pre-operations consultation period.

Comments and feedback regarding improvements to the program are considered and incorporated into Trans Mountain's emergency response planning, as appropriate.

- 1c) The consultation and comment period for the Westridge Marine Terminal Air Quality Monitoring Plan (now Air Emissions Management Plan or AEMP as required by NEB Condition 52) closed March 3, 2017, and this Plan was finalized and approved by the NEB in their Letter Report 2.<sup>1</sup>

The AEMP for the Westridge Marine Terminal was released in draft for review and feedback on November 22, 2016, and the comment period was extended from February 24, 2017 to March 3, 2017 for Appropriate Government Feedback. The AEMP was refiled with the NEB on June 15, 2017 (in response to IR 18).<sup>2</sup>

As noted in Table B-1 of Appendix B in the AEMP, several local governments including the District of North Vancouver were contacted by letter from Trans Mountain dated November 29, 2016 to review the draft AEMP and provide comments (Filing ID [A5K4Q3](#)). No comments were received from the District of North Vancouver, and the AEMP was finalized as noted above. Comments were received from Metro Vancouver and Environment and Climate Change Canada as noted in Table A-3 of Appendix A in the AEMP, and these comments were addressed by Trans Mountain.

#### References:

Tsleil-Waututh Nation v. Canada (Attorney General) <https://decisions.fca-caf.gc.ca/fca-caf/decisions/en/item/343511/index.do>

---

<sup>1</sup> <https://apps.neb-one.gc.ca/REGDOCS/Item/View/3309935>.

<sup>2</sup> <https://apps.neb-one.gc.ca/REGDOCS/Item/Filing/A84415>

National Energy Board Report, Trans Mountain Expansion Project, May 2016 <https://apps.nel-one.gc.ca/REGDOCS/File/Download/2969681>

BC Environmental Assessment Office , Trans Mountain Expansion Project Environmental Assessment Certificate #E17-01 dated January 10, 2017 and Schedules; Schedule B – Table of Conditions  
<https://projects.eao.gov.bc.ca/api/document/5892318fb637cc02bea16484/fetch>

**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:**

[The following IR was labelled “IR No. 15a” in the Information Request Trans Mountain received. It was renumbered to “IR No. 15.2a” by Trans Mountain to avoid double numbering.]

- 2a) 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?

[The following IR was labelled “IR No. 15b” in the Information Request Trans Mountain received. It was renumbered to “IR No. 15.2b” by Trans Mountain to avoid double numbering.]

- 2b) 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?

**Response:**

- 2a) In the unlikely event of a spill, including incidents occurring at the Westridge Marine Terminal (WMT), a coordinated response will be initiated, and a Unified Command established. The Unified Command will include representation from the Responsible Party (e.g., the vessel operator for ship-source spills), the directly impacted Indigenous community, as well as relevant federal, provincial and local government authorities.

Applicable response plans that may be activated in the event of a spill at the WMT include Western Canada Marine Response Corporation’s Oil Spill Response Plan, Trans

Mountain's WMT Emergency Response Plan, and the Greater Vancouver Integrated Response Plan (GVIRP).

Unified Command's purpose during an incident is to identify response priorities, set key objectives and provide overall guidance through an inclusive decision-making process. Unified Command makes strategic decisions, such as the need to evacuate or shelter-in-place to protect potentially impacted community members, and approval of public messaging. As part of the Unified Command, Trans Mountain would provide technical advice and recommendations to the Local Authority to aid in the determination of appropriate public safety actions, including whether to issue public notifications and/or evacuation alerts, orders and rescinds to protect people within the jurisdictional areas.

At the onset of a spill at the WMT, Trans Mountain contractors would conduct air monitoring to obtain accurate and reliable data. This data would be utilized to develop an incident-specific air monitoring plan, scaled according to the magnitude of the spill.

- i. Immediate notification is a key element of any emergency response. The health and safety of employees and the public are paramount and, as a result, immediate notification is essential.

Section 2.0 of Trans Mountain's WMT Emergency Response Plan describes both the internal and external notification processes for incidents occurring at the Terminal. Notification of the local government agencies may occur through 911, as well as on-scene coordination with emergency services. As appropriate, local first responders may form part of Unified Command. All marine spills must be reported verbally to the Canadian Coast Guard as soon as feasible. The impacted and potentially affected communities will be contacted as soon as possible by the Liaison Officer in the Incident Command Post.

As in the GVIRP, Trans Mountain's Emergency Response Plan includes not only direct notification, but also a multi-agency coordination call. This call will be arranged by the Liaison Officer to provide an incident briefing, including incident situation: location, magnitude and potential impacts and the consequences (actual and potential).

An invitation to local first responders and communities to participate in the Liaison Office ongoing is also an encouraged option.

- ii. At the onset of a spill at the WMT, Trans Mountain contractors would conduct air monitoring to obtain accurate and reliable data. This data would be utilized to develop an incident-specific air monitoring plan, scaled according to the magnitude of the spill.
- iii. As per NEB Condition 136, Trans Mountain is required to complete a full-scale exercise for the scenario of a 160 m<sup>3</sup> diluted bitumen release into Burrard Inlet as a result of a release from WMT. The exercise must also consider emergency preparedness and response planning for a release that exceeds a credible worst-



case scenario spill event. This exercise was conducted on September 18-19, 2018 (Filing ID [A96854](#)).

Section 7.5 of the WMT Emergency Response Plan identifies oil spill scenarios and includes a marine oil spill involving crude oil entering the Burrard Inlet. The parameters of the scenarios presented (i.e., type of product, spill size) were determined in accordance with Transport Canada's Oil Handling Facilities (OHF) Standards, TP 12402, which specify the nature of the scenarios to be used based on products loaded and maximum transfer rates. As a Level 4 category facility under the OHF standards, the required incident size for the Terminal is 50 m<sup>3</sup> for each classification of product.

Trans Mountain's WMT Emergency Response Plan is publicly available online at the link provided below.

- 2b) Please see response to District of N Vancouver Reconsideration IR to Federal Departments No. 15.2a.

**References:**

Trans Mountain's WMT Emergency Response Plan

<https://www.transmountain.com/emergency-response-plans>

Transport Canada Oil Handling Facilities Standards, TP 12402

<https://www.tc.gc.ca/media/documents/marinesafety/tp12402e.pdf>