

**Trans Mountain Pipeline ULC  
Trans Mountain Expansion Project  
NEB Hearing Order OH-001-2014  
Responses to Information Request from  
Village of Belcarra**

**1.1 Marine Resources: Incomplete Inventory**

**Reference:**

- Trans Mountain Application, s.1.2.1.7, Environmental Stewardship, p.2-4, A3S0Q8.
- Trans Mountain Application, s.4.1.2, Purpose of the Environmental Assessment, p.8A-92, A3S4X5.
- Trans Mountain Application, Vol. 5C, Environmental and Socio-economic Assessment – Biophysical Technical Reports, Marine Resources – Westridge Marine Terminal Technical Report, A3S2R7.

**Preamble:**

The submitted Trans Mountain application does not include the following marine species in the inventory for the WMT local study area:

**New Discovery** — In February 2012, retired DFO biologist and author Rick Harbo and marine conservation diver/photographer Neil McDaniels discovered a new species to Canadian waters. The divers were onboard the Reed Point Marine Education Centre boat ‘Medusa 2’ sampling host horse clams a mere 3 km east of the WMT facility and found *Odostomia* snails. An international molluscan expert, Pat Lafollette at the LA County Museum, confirmed their identification.

**Undocumented Specie** — Another local discovery found at the Mossom Creek Hatchery’s sea pen at loco is a snailfish; a relative of the Spiny Lump sucker. This as yet undocumented and unnamed specie of snailfish illustrates that the knowledge of Pacific Northwest marine fish is still far from complete, and further emphasizes that Burrard Inlet has important marine habitat to protect.

**Unique Discovery** — In 2006 a giant pink sea star (99 cm in diameter) was discovered in eastern Burrard Inlet while educators Ruth Foster and Rod MacVicar were doing an elementary school “marine life of the harbour” field trip. Subsequently, SFU biologist Dr. Isabelle Cote and her research scuba diving class made another discovery in the same clam bed at Reed Point which is just 3 km east of the WMT tanker loading facility. Dr. Cote and her students encountered a population of giant pink sea stars, many of which were found to be 25% larger than the largest recorded individuals of this species.

**Squid Spawn** — For the first time in many years there has been a spawn of squid in eastern Burrard Inlet. These fast growing molluscs are a significant food fish for salmon, and little is known about their presence and habitat requirements.

Herring Spawn — The eastern portion of Burrard Inlet is experiencing a return of the herring spawn that is only one of two recorded June herring spawns in over 100 years that is most likely related to the late spawning Cherry Point stock in Washington State. It is just these past four years that the Pacific herring is getting re-established in the eastern portion of Burrard Inlet and underscores the importance of protecting this important fish population. The submitted Trans Mountain application erroneously states: “Herring spawning has not been documented within the Marine Resources LSA”.

**Request:**

Please update the Trans Mountain application to include the above noted species in the marine fish inventory for the WMT local study area, and provide details as to the measures that will be taken to protect these fish populations and their important marine habitat within the WMT local study area, including emergency response measures that would be taken in the event of an oil spill at the expanded WMT tanker loading facility.

**Response:**

All of the species or species groups listed in the preamble (*Odostomia* spp., Liparidae, *Pisaster brevispinus*, *Loligo opalescens*, and *Clupea pallasii*) may occur within the Marine Resources local study area (LSA) and Marine Resources regional study area (RSA). Giant pink stars (*Pisaster brevispinus*) were observed within the Marine Resources LSA during the remotely operated vehicle (ROV) survey conducted September 17-20, 2012 (see the Application, Section 5.3 in Volume 5C, Biophysical Technical Report 5C13, Marine Resources – Westridge Marine Terminal Technical Report [Stantec December 2013]).

Mitigation measures that will be implemented during construction of the Westridge Marine Terminal are designed to minimize adverse effects on all marine fish and fish habitats, including those species or species groups listed in the preamble. For more information on these mitigation measures, please refer to Section 6.0 in Volume 5C, Biophysical Technical Report 5C13, Marine Resources – Westridge Marine Terminal Technical Report (Stantec December 2013) and Section 7.6.9.4 in Volume 5A.

Emergency response measures that would be taken in the event of an oil spill at the Westridge Marine Terminal are discussed in Sections 4.0 and 8.2.2 of Volume 7.

**1.2 WMT Footprint: Compensation for Habitat Loss****Reference:**

- Trans Mountain Application, s.1.2.1.7, Environmental Stewardship, p.2-4, A3S0Q8.
- Trans Mountain Application, s.3.4.4, Facilities Design: Westridge Marine Terminal, p.4A-80, A3S0Y8.

**Preamble:**

Today, it is no longer sufficient to just “minimize harm” or “compensate for loss” with regard to marine habitat. Current environmental “best practices” are founded on the ethics of “preserve, protect and enhance”. The environment of Burrard Inlet is a public asset, and the public expects that projects such as the proposed TMEP and expansion of the WMT tanker loading facility provide environmental enhancements beyond the basic regulatory requirements.

The proposed expansion of the WMT tanker loading facility involves tripling the size of the facility’s footprint on Burrard Inlet accompanied by a significant encroachment (up to 1000 feet) into the waters of Central Burrard Inlet. The proposed increase in the size of WMT has consequences for both Burrard Inlet itself and the communities surrounding Burrard Inlet, but the Trans Mountain application does not mention proportionate compensation for the tripling WMT’s encroachment.

**Request:**

Please provide information and Trans Mountain’s intentions regarding the marine habitat compensation that will occur within Burrard Inlet as a result of the expansion of WMT tanker loading facility. Will Trans Mountain increase the amount of important marine habitat in Burrard Inlet beyond the basic regulatory requirements and “give back” to Burrard Inlet in proportion to the increased WMT footprint?

**Response:**

This information will be provided in the Preliminary Marine Fish Habitat Offsetting Plan. Please refer to the response to NEB IR No. 1.51.

### 1.3 WMT Oil Containment Booms: Design Technology

#### Reference:

- Trans Mountain Application, s.2, Economics and General Information: Westridge Marine Terminal, p.2-14, p.2-14, A3S0Q8.
- Trans Mountain Application, s.2.1.5, Project Description: Westridge Marine Terminal, p.2-26, A3S0Q9.
- Trans Mountain Application, s.3.4.4.3.2, Meteorological and Ocean Conditions, p.4A-92, A3S0Z1.
- Trans Mountain Application, s.4.2.1.4, Westridge Marine Terminal, p.4B-37, Figure 4.2.5, Westridge Marine Terminal Dock Configuration, A3S1K6.

#### Preamble:

The Trans Mountain application makes a brief mention that there will be oil containment booms around oil tankers berthed at the WMT facility, but the application makes no mention as to the design technology and efficacy of the oil containment booms proposed for the expanded WMT tanker loading facility. The type of oil containment boom utilized must be appropriate for the water conditions encountered in Central Burrard Inlet.

In winter months, Indian Arm can experience Arctic outflow winds ('Squamish Winds') that often generate significant wind speeds and large waves. The WMT is located directly across from the entrance to Indian Arm, and is subject to the full force of outflow winds down Indian Arm. Such winds have significant implications for the effectiveness of oil containment booms designed for calmer protected waters. Trans Mountain states that there is an absence of site-specific wind data for the WMT location; however, the proxy wind data from Halibut Bank in the Strait of Georgia proposed by Trans Mountain is an unsatisfactory proxy given the enhanced winds that can be experienced at the mouth of a narrow 20 km long fjord such as Indian Arm. Trans Mountain states that the 1 in 100-year north-north-easterly wind can generate maximum wave heights of 4.8 feet (1.47m), based on Halibut Bank data. Site-specific wind data may well predict maximum wave heights of 6 feet or more. Anticipated wind, current, wave and vessel wake conditions are the key design criteria used for the selection and deployment of oil containment booms, and the applicant has not provided an assessment of these requirements with conclusions regarding the type of oil containment boom to be used.

Water conditions in the area are not simply dependent on the weather conditions. In addition to winds creating waves that exceed the performance specifications of the oil spill containment booms, the significant amount of commercial and recreational vessel traffic also generates high waves (boat wake) that needs to be considered.

There are different types of oil spill containment booms for different water conditions, and containment boom technology has also evolved in recent years. The site-specific wind and wave conditions at the WMT tanker loading facility, particularly during winter Arctic outflow winds, necessitate use of 'open water' oil spill containment booms capable of performing in at least 5-foot waves which are known to occur in Central Burrard Inlet.

**Request:**

Please provide details as to the design technology and efficacy of the oil containment booms proposed for the expanded WMT tanker loading facility. Does Trans Mountain intend to utilize 'best available technology' for the proposed oil spill containment booms that will surround the tankers berthed at the expanded WMT that will be capable of effectively performing in at least 5-foot waves that occur on Central Burrard Inlet waters due to the known wind, current, wave and vessel wake conditions?

**Response:**

The function of oil containment boom is to contain, concentrate and reduce the spreading of spilled oil. Containment boom is an engineered product constructed according to guidance published by many international standards organizations. As there is a robust market for the product, the manufacturers of containment boom are constantly refining and testing their products to maintain the "best available technology." In North America, the American Society for Testing and Materials (ASTM) publishes the most commonly referenced containment boom standards. Government agencies have also developed additional guidelines for selecting the appropriate type of containment boom with respect to the environment that the boom is expected to service. Transport Canada in consultation with the Canadian Coast Guard (CCG), Environment Canada and other stakeholders codified containment boom and other response resources according to the environment in which they will operate (Transport Canada 1995). These Transport Canada equipment designations of shoreline, sheltered and unsheltered water capability will drive boom and other resource selections and its appropriate placement at the various locations between the Westridge Marine Terminal and Buoy "J" at the Pacific Ocean. Under this Transport Canada guidance, Westridge Marine Terminal is considered to contain both shoreline and sheltered waters. Please consult the Application, Volume 8C, TR 8C-12 S12 – Review of Trans Mountain Expansion Project Future Oil Spill Response Approach Plan Recommendation on Bases and Equipment (Appendix A) for representative examples of boom types by operating environments.

At the Westridge Marine Terminal, a dedicated boom will be pre-deployed around all tankers while these vessels are being loaded. Additional booms, sufficient to double boom the ship in the event of an incident, are stored at Westridge and can be deployed quickly by trained on-site personnel. A skimmer from the certified response organization Western Canada Marine Response Corporation (WCMRC) is also moored at Westridge for rapid response. The Westridge facility response plan, including spill response capacity, will be enhanced as part of the Project. At this time, it is anticipated that the pre-deployed Westridge Marine Terminal boom will consist of two components: 1) belted boom permanently installed under the dock that will be used in combination with, 2) a flexible high-wear fabric boom. Both assets will have sufficient freeboard to meet the environmental conditions at the terminal that have been substantiated by MetOcean data and local knowledge.

Boom performance, whether viewed as a function of design technology or efficacy as observed during field deployments, is heavily dependent upon the greater system that supports the response actions. At Westridge Marine Terminal, Trans Mountain maintains a response system that proactively integrates prevention-oriented engineered controls employed during loading,

pre-staged redundant capacity response equipment, on-site personnel trained and drilled in the use of resident response equipment, and a close cooperation with WCMRC who maintains an extensive response base in the vicinity of the Westridge Marine Terminal.

**References:**

ASTM International. 2011. "Standard Practice for Classifying Water Bodies for Spill Control Systems." ASTM Standard F625/F625M-94ASTM. Reapproved 2011. West Conshohocken, PA 19428-2959.

ASTM International. 2012. "Standard Guide for Collecting Oil Containment Boom Performance Data in Controlled Environments." ASTM Standard 2084. West Conshohocken, PA 19428-2959.

ASTM International. 2012. "Standard Guide for Determining the Buoyancy to Weight Ratio of Oil Spill Containment Boom." ASTM Standard F2682-07. West Conshohocken, PA 19428-2959.

ASTM International. 2012. "Standard Test Methods for Tensile Strength Characteristics of Oil Spill Response Boom." ASTM Standard F1093-99. West Conshohocken, PA 19428-2959.

Transport Canada. 1995. Response Organizations Standards (1995) – TP 12401E.

## 1.4 WCMRC Emergency Response Plans (ERPs): Rapid Response & Containment

### Reference:

- Trans Mountain Application, Volume 8A – Marine Transportation – Effects Assessment and Spill Scenarios, s.5.5, Oil Spill Preparedness and Response, p.8A-600, A3S4Y6.
- Trans Mountain Application, Volume 8A – Marine Transportation – Effects Assessment and Spill Scenarios, s.5.5.2, Proposed Improvements, p.8A-606, A3S4Y6.
- Trans Mountain Application, Volume 8A – Marine Transportation – Effects Assessment and Spill Scenarios, Table 5.5.3: Proposed Improvements to WCMRC’s Emergency Response Capacity, p.8A-608, A3S4Y6.

### Preamble:

In their 2013 report entitled: “*A Review of Canada’s Ship-Source Oil Spill Preparedness and Response Regime — Setting the Course for the Future*” the Transport Canada appointed ‘Tanker Safety Expert Panel’ made the following key recommendations:

- Spill planning and the response resources allocated to prepare for [oil] spills should be based on risks specific to a geographic area;
- Response planning should be focused on whatever strategies are identified for a geographic area that will most effectively limit the environmental, socio-economic impacts of a spill; and
- A timely response to a [oil] spill is a key factor in mitigating its effects.

The Central Burrard Inlet locale surrounding the WMT tanker loading facility is one such geographic area that has both environmental and socio-economic values that warrant Trans Mountain and WCMRC developing a site-specific ERP — also known as a *Geographic Response Plan* (GRP) — for dealing with potential oil spills in Vancouver harbour.

Central Burrard Inlet is surrounded by three parks and three habitat conservation areas: the *Burnaby Mountain Conservation Area* and *Barnet Marine Park* are located east of WMT on the south shore, the *Eastern Burrard Inlet Rockfish Conservation Area* is located west of WMT on the south shore, *Cates Park* and *Belcarra Regional Park* flank the entrance to Indian Arm directly across from WMT to the north, and the *Maplewood Flats Conservation Area* is located across from WMT on the north shore of Burrard Inlet.

Burrard Inlet is a special place that is home to high-value public assets that include recreation, tourism, fisheries, and sensitive marine habitats. As such, emergency response plans for Central Burrard Inlet need to include strategies for both rapid response and containment of an oil spill, and concurrent habitat protection measures. This ‘dual approach’ is required because fugitive oil always escapes from primary containment booms, which necessitates deployment of secondary booms to protect sensitive marine habitat areas.

The initial response time to an oil spill is critical, particularly when operating within a confined area such as Central Burrard Inlet that is surrounded by sensitive marine habitat that requires protection. Good planning dictates that a site-specific ERP based on a ‘rapid response and containment’ strategy is critical to protecting the environmental and socio-economic values of Central Burrard Inlet. Rapid response is key to mitigating the effects of an oil spill, and a

one-hour maximum response time is proposed as the definition of 'rapid response' for a location such as Central Burrard Inlet. (Such a response time is both realistic and achievable given that WCMRC is already located in Central Burrard Inlet.) By combining 'rapid response' with oil containment booms pre-staged at strategic locations, the inter-tidal zones and sensitive habitat areas can be isolated and protected while Trans Mountain and WCMRC undertake the lengthy process of oil spill clean-up.

**Request:**

Please explain why the maximum response time within the confined geographic area of Burrard Inlet should be greater than one hour when the public places a high-value on the sensitive marine habitat of Burrard Inlet and expects emergency response plans to demonstrate an equivalent emphasis within for the geographic area. Does Trans Mountain place the same high-value on the sensitive marine habitat of Burrard Inlet as its neighbouring communities?

**Response:**

Westridge Marine Terminal operations are equipped to provide immediate response in the event of a spill. The loading operations are enclosed within a boom, additional response equipment is kept on site and personnel are trained based on Kinder Morgan Canada Inc.'s (as the operator) Westridge Emergency response plans.

With respect to incident response times in marine environments, as noted in the Application, Volume 8A, Section 1.4.2.5, West Coast Marine Response Corporation (WCMRC) is federally mandated, through Transport Canada, under the *Canada Shipping Act*, to provide emergency preparedness and response services in the event of an oil spill into the marine environment on the West Coast of British Columbia. Within the Application, Volume 8A, Section 5.5.1.1, federally mandated response times are outlined in Table 5.5.2: WCMRC Response Time Planning Standards. Trans Mountain Pipeline ULC, in consultation with WRMRC, has proposed reduced response times, as noted in Volume 8A, Table 5.5.3: Proposed Improvements to WCMRCs Emergency Response Capacity, of the Application.

It is important to note there are differences between planning standards and actual response times. The former are established by Transport Canada and represent a maximum threshold. Actual response times are expected to be less.

As summarized in the referenced table(s), federally mandated acceptable maximum response times, ranging from 6 hours – 72 hours, are dependent upon the size of the spill and geographic location of the impacted area. Proposed improvements will reduce the response times to 2 hours – 36 hours within the Increase Response Area described in the Application.

As part of the systems for oil spill response Trans Mountain has conducted a pre-spill Shoreline Clean-up Assessment Technique (SCAT) of the area surrounding the Westridge Marine Terminal, the results of which will be shared with WCMRC for inclusion into their Geographic Response Plan (GRP) for Central Burrard Inlet (selected shoreline within Vancouver Harbour, east of Second Narrows to Port Moody, and north to Belcarra). This information was prepared based on SCAT standards, used by Environment Canada, which will expedite the



implementation of shoreline treatment options. This information will enable first responders to promptly select and deploy protection strategies in the event of a product release.

Please also refer to the Application, Volume 8C, TR 8C-12 S12 – Review of Trans Mountain Expansion Project Future Oil Spill Response Approach Plan Recommendation on Bases and Equipment.

Please also see responses to NEB IR No. 1.64a and b.

**1.5 WMT Emergency Response Plans: WMT On-Site Spill Response Capability****Reference:**

- Trans Mountain Application, Volume 7 – Risk Assessment and Management of Pipeline and Facility Spills, s.4.0, Emergency Preparedness and Response, p.7-21 to 7-40, A3S4V5.
- Trans Mountain Application, Technical Report 7-2: Ecological Risk Assessment of Westridge Marine Terminal Spills, A3S4X1.

**Preamble:**

The initial response to an oil spill at an expanded WMT tanker loading facility is critical, particularly for WMT which operates within a confined area such as Central Burrard Inlet that is surrounded by sensitive marine habitat that requires protection. Good planning dictates that a ‘rapid response and containment’ strategy is critical to protecting the environmental and socio-economic values as well as being key to mitigating the effects of an accidental oil spill. However, the application does not describe the emergency response plans that Trans Mountain intends to implement for the expanded WMT tanker loading facility.

**Request:**

Please provide details of the WMT emergency response plans during the first hour following an oil spill event that Trans Mountain will implement at the expanded WMT tanker loading facility, including the number WMT personnel on-site during tanker loading operations that are trained to respond to an oil spill, and the equipment and response vessels available on-site at WMT for use in responding to an oil spill.

**Response:**

Depending upon the size of the release, Kinder Morgan Canada (KMC) will implement some or all of the Westridge Marine Terminal Emergency Response Plan (ERP). Staff, including the KMC Loading Master are always present during loading operations and would initiate an immediate shutdown of loading operations to limit the amount of product released. The vessel is always completely encircled with boom prior to loading operations to limit the spread of a potential spill. KMC staff at Westridge Marine Terminal are all trained in oil spill response and have equipment ready on site for immediate deployment.

**While local staff are immediately responding to the spill a number of concurrent activities will take place; notification of regulatory authorities, WCMRC, internal Emergency Response Line (ERL) which notifies and brings together key incident management team members to assess and set initial response objectives.**

The Application, Volume 7, Section 4.8 outlines the process to enhance KMC’s existing emergency management programs as they relate to the Trans Mountain Pipeline system to address the needs of the Project. The final programs will be developed in a manner consistent with the NEB’s draft conditions 42, 52, 53 and 54.

In the Application, Table 5.5.3 of Volume 8A of the application describes enhanced planning standards for WCMRC marine spill response capacity.

**1.6 WCMRC Emergency Response Plans: Use of Dispersants in Burrard Inlet****Reference:**

- Trans Mountain Application, Volume 8A – Marine Transportation – Effects Assessment and Spill Scenarios, s.5.5, Oil Spill Preparedness and Response, p.8A-600, A3S4Y6.
- Trans Mountain Application, Volume 8A – Marine Transportation – Effects Assessment and Spill Scenarios, Table 5.5.3: Proposed Improvements to WCMRC’s Emergency Response Capacity, p.8A-608, A3S4Y6.

**Preamble:**

By removing oil from the water surface, dispersants minimize the potential impacts on sea birds and sensitive shorelines such as salt marshes and tourist beaches. However, localized high concentrations of dispersed oil in the water column, following the use of dispersants, present a risk to marine organisms that cannot move to avoid it.

According to the “Manual on the Applicability of Oil Spill Dispersants” (*European Maritime Safety Agency*, Version 2, September 2009), the following are situations where dispersants should not be used:

- Dispersants should not be used in very shallow water (less than 10 metres deep) because the ‘cloud’ or plume of dispersed oil will come into contact with the sea-bed and expose benthic organisms (those that live in the mud and sediment) to high concentrations of dispersed oil.
- Marine filter-feeders such as shellfish that eat plankton will ingest the dispersed oil droplets; therefore, dispersants should not be used on spilled oil that is close to shellfish beds.
- Dispersants should not be used on spilled oil that is close to corals, sea grass and fish spawning areas as these are highly sensitive to dispersed oil.
- The use of dispersants should not be used in the vicinity of fish cages, shellfish beds or other shallow water fisheries due to the increased risk of ‘tainting’ (imparting an unpleasant oily taste to the flesh of fish and shellfish).

As a consequence, Trans Mountain and WCMRC need to ensure that any oil spill ERP developed for Burrard Inlet excludes the use of dispersants due to the high risk of negatively impacting shellfish and other marine organisms, as well as negatively impacting sensitive marine habitat areas.

**Request:**

Given the opinion expressed by the *European Maritime Safety Agency*, please explain why Trans Mountain and/or WCMRC want to use dispersants within Burrard Inlet when use of dispersants pose a high risk of negatively impacting shellfish and other marine organisms, as well as negatively impacting sensitive marine habitat areas.

**Response:**

Dispersants are not approved for use in Burrard Inlet. In the event of a spill response, strategies would be developed under an Incident Command Structure and approved by Unified Command. This structure is expected to include Environment Canada and the BC Ministry of Environment who would provide advice on environmental priorities. Any decision to use dispersants would be based on net environmental benefit analysis and would need approval of the appropriate regulatory authorities.

Results of the Gainford Study (see Volume 8C, TR8C-12, S7) indicated that dispersants tested were only marginally effective on free-floating diluted bitumen for up to six hours. The dispersants tested were not effective on diluted bitumen that had weathered for over one day.

**1.7 WMT Footprint: Impact on Vessel Traffic****Reference:**

- Trans Mountain Application, s.3.4.4, Facilities Design, Westridge Marine Terminal, p.4A-80, A3S0Y8.
- Trans Mountain Application, s.4.1.2, Purpose of the Environmental Assessment, p.8A-92, A3S4X5.
- Trans Mountain Application, s.4.2.11.3.3, Region 1: Burrard Inlet – Marine Transportation, p.8A-210, A3S4Y1.
- Trans Mountain Application, s.4.2.11.3.4, Region 1: Burrard Inlet – Marine Recreational Use, p.8A-212, A3S4Y1.
- Trans Mountain Application, s.4.2.11.3.5, Region 1: Burrard Inlet – Marine Tourism Use, p.8A-213, A3S4Y1.

**Preamble:**

Central Burrard Inlet of *Port Metro Vancouver* (PMV) is a key navigable watercourse for both commercial and recreational vessel traffic. The industrial terminals located in Port Moody Arm include the *Imperial Oil Company* distribution facility docks on the north shore at loco, the *Pacific Coast Terminal* (PCT) docks and the *Suncor Energy Inc.* docks on the south shore. Commercial vessel traffic from Port Moody Arm (which is Burrard Inlet's east arm) includes cargo ships (forest products, vegetable oils and sulphur), oil tankers and oil barges (petroleum products).

The Trans Mountain application does not give adequate consideration to the impact of an expanded WMT tanker loading facility on recreational vessel traffic in Central Burrard Inlet. There is significant recreational vessel traffic passing through Central Burrard Inlet and Port Moody Arm which originates from the boat launch facilities at *Cates Park* in North Vancouver (directly across from the WMT), at *Rocky Point Park* in Port Moody, and at *Reed Point Marina* on the south shore of Port Moody Arm — the largest marina in British Columbia that is home to 850 recreational vessels.

The Trans Mountain application does not give adequate consideration to the risks due to 'unanticipated events' — most of which are the result of 'human error' — the definition of an 'accident'. Such 'unanticipated events' could include an oil barge being towed from *Imperial Oil Company* at loco breaking its towline and colliding with a tanker being loaded at the WMT facility. Or a freighter coming from *Pacific Coast Terminals* in Port Moody losing power and colliding with the WMT facility. Or a vessel at anchor in Central Burrard Inlet breaking-free of its mooring due to high winds down Indian Arm during an Arctic-outflow event and crashing into the WMT facility. It most likely will be the 'unanticipated event' that will result in an oil spill in Central Burrard Inlet.

The Trans Mountain application does not adequately assess the safety concerns regarding commercial and recreational vessel traffic from an expanded WMT tanker loading facility extending a significant distance into Central Burrard Inlet.

**Request:**

Please provide an assessment regarding the impact of the seven-fold increase in tanker traffic on the safety of other commercial and recreational vessel traffic within Central Burrard Inlet, including an assessment of the impact on the safety of future increased commercial vessel traffic from expanded operations at the *Imperial Oil Company*, *Suncor Energy Inc.* and *Pacific Coast Terminals* facilities on Port Moody Arm.

**Response:**

A comprehensive risk assessment of the impact of the increase in tanker traffic resulting from the Trans Mountain Expansion Project (the Project) within the Central Harbour has been carried out by Det Norske Veritas GL (DNV-GL) and is located in the Application, Volume 8C, TR8C-12, TERMPOL 3.15. Existing marine traffic for the area was identified based on Automated Information System (AIS) data and other vessel traffic information. The AIS automatically provides information, including the ship's identity, type, position, course, speed, navigational status and other safety-related information, to appropriately equipped shore stations, other ships and aircraft.

Using a combination of economic forecasting, regional project announcements, and interviews, the amount of future traffic has been forecast for 2018, 2020, 2025, and 2030. Interviews were conducted with a number of terminals east of Second Narrows (Imperial Oil Company, Suncor Energy Inc. and Pacific Coast Terminals facilities and others) to validate the estimated traffic of commercial vessels within the Central Harbour. These projected traffic volumes were used in TERMPOL 3.15 to estimate the probability of spills both with and without the proposed Project traffic for the years 2018 and 2028. The analysis of marine traffic forms part of the Application and can be found in Volume 8C, TR8C-2, TERMPOL 3.2.

The results of TERMPOL 3.15 show that tanker traffic to the Westridge Terminal is projected to increase from 5 to 34 tankers per month in 2018, constituting an increase of approximately 60 total transits (ingoing plus outgoing tanker transits). The Project-related increase in marine traffic will represent about 16 per cent of total marine traffic in Burrard Inlet in 2018, compared to the current 3 per cent (refer to Volume 8A, Table 2.2.2). However, when compared to all forecast traffic using AIS, the increase in traffic as a result of TMEP is estimated to be 9% east of the Second Narrows. The carriage of oil by barges to and from the various oil handling facilities in the Central Harbour is expected to remain the same.

The use of AIS is not mandatory for most recreational vessels; therefore it is possible that the analysis has not accounted for a number of recreational and smaller vessels sailing in this area. Should these vessels have been included in the total count of vessel movements, the percentage of Project tankers in the total count of vessel movements in the Central Harbour would be lower. All vessel traffic, recreational or otherwise, are subject to all maritime traffic regulatory requirements, which are designed to ensure the safety of all users of marine transportation lanes. As is the case today, it is expected that the operators of small vessels (mainly fishing and recreational vessels), as required by Transport Canada, would continue to follow boating safe practices and the collision regulations and apply good seamanship when operating within Burrard Inlet and as part of that, thereby these vessels will not impede the path

- Transport Canada requires compliance by all vessels with the *Canada Shipping Act, 2001, Collision Regulations*, the *Navigation Safety Regulations* pursuant to the Act and other applicable regulations and standards, except Government or Military vessels.
- In Burrard Inlet and other marine areas under its jurisdiction, Port Metro Vancouver (PMV) ensures compliance with PMV's Marine Restricted Area regulations, including "Clear Narrows" regulations.
- Tanker owners have third-party insurance coverage in place to address vessel damage, gear loss or injury.
- Transport Canada and the Transportation Safety Board carry out investigations at the appropriate level in case of a collision between vessels
- British Columbia Coastal Marine Pilots will ensure that all tankers follow transit procedures set out by PMV and the Pacific Pilotage Authority, including escort tug requirements in Burrard Inlet, and timing restrictions for the Second Narrows.

In addition, the cumulative effects assessment of the Project-related increase in marine tanker traffic (see the Application, Volume 8A, Section 4.4.9 Marine Commercial, Recreational and Tourism Use) identifies the Project's contribution to potential cumulative effects on other commercial and recreational vessel traffic. This assessment considers the increases in marine vessel traffic predicted to occur between 2012 and 2030 in Burrard Inlet.

In order to ensure a high degree of safety at the Westridge Marine Terminal a number of steps have been taken by Trans Mountain:

- DNV-GL conducted a HAZID in Vancouver that was attended by marine and industry experts, regulators, municipal representatives (including the Mayor of Belcarra), and representatives of First Nations amongst others. Unanticipated events were discussed at this event and DNV-GL used the results of the HAZID as input to completing the quantitative risk assessment;
- conducting public engagement and obtaining feedback;
- engaging with local First Nations, whenever possible;
- completion of a quantitative risk assessment;
- designing and siting the proposed dock facility after due consideration of a number of safety factors in a manner that will ensure safety of the terminal, vessel, workers and others;
- conducting a fast time simulation study to test the navigation safety of the proposed dock layout;
- constructing and equipping the facility to global standards both for oil handling equipment and spill prevention;
- committing to operate the facility with a high focus on safety under a regime based on regulatory requirements, local experience and international best practices that have been developed and continually improved since the terminal entered service in 1953 and one that has proven to be comprehensive, well established and effective; and

of large ships and will in other ways avoid unsafe encounters from developing. As large ships mainly move during certain times of the day only, depending on the tide, not including the non-AIS vessels to the total traffic is not considered as a limiting factor to the overall risk evaluation. Should however, there were to be an encounter between a small/recreational vessel and a large ship, harm would be caused to the small vessel; however there would not be any threat of a cargo oil spill.

The risk assessment estimated that the change in frequency of a vessel incident (any vessel) in the Central Harbour as a result of the Project will be negligible (see the Application, Volume 8C, TR-12, Section Table 12 and Figure 22). The quantitative risk assessment considered: marine traffic; weather (a meteorological weather data recording station has been set up at the Westridge Marine Terminal); locational and what-if issues highlighted during the hazard identification workshop (HAZID); and existing and future risk reducing measures.

There are a number of measures in place that reduces safety risks for all vessels related to the increased presence of Project-related marine vessels. The movement of all vessels in excess of 350 gross tons within the Central Harbour must be conducted under the direction of a licensed Canadian pilot. In the case of laden tankers, there is a requirement for two pilots. The pilots are equipped with special navigation tools such as a Portable Pilotage Unit and the tankers must be accompanied by a prescribed number of tugs. The tankers are highly regulated and must also meet strict acceptance standards for the Westridge Marine Terminal, which only accepts modern tankers that meet all international and national rules and regulations, are well maintained and are operated to best industry operating practices (KMC's Tanker Acceptance Standard is provided as an attachment to the response to Belcarra IR No. 1.9). In addition there are a number of local port regulations in place that are meant to ensure the safe movement of tankers and other vessels. While docked at Westridge Marine Terminal, the loading operations onboard is overseen by a Loading Master with authority to not commence loading (or to cease loading) if the tanker is not meeting recognized safe operating practices.

The effects assessment for the Project-related increase in marine tanker traffic (see the Application, Volume 8A, Section 4.3.11 Marine Commercial, Recreational and Tourism Use) identifies potential effects to other marine transportation users and marine recreational use. Potential effects assessed included the potential for damage to marine vessels and/or injury resulting from incidents involving Project vessels under normal operations (*i.e.*, not spills). Collisions by Project tankers with built infrastructure such as bridges or docks was also considered and deemed to be unlikely due to the manner in which these vessels are conducted, the degree of oversight and scrutiny placed on these vessels and the high degree of mitigation measures, including the use of pilots and tugs, already in place from the various authorities (see the Application, Table 4.3.11-3, Section 4.3.11 in Volume 8A). The effects assessment lists several mitigation measures (including federally regulated activities and industry best practices) aimed at reducing effects of increases in Project-related marine vessels on other commercial and recreational vessel traffic. These include the following:

- Transport Canada requires all vessels, including tankers, to comply with the *International Regulations for Preventing Collisions at Sea* (with Canadian Modifications) and other major international maritime conventions.



requesting a TERMPOL review and recommending a number of additional risk reducing measures, which include a request to facilitate the development of a “shipping channel” in the eastern section of PMV between Second Narrows and Port Moody. This item is being actively pursued with PMV and a “shipping channel” is currently under review, which will further increase safety of all vessel movements in the Central Harbour.

**1.8 Westridge Marine Terminal (WMT): Noise & Light Pollution****Reference:**

- Trans Mountain Application, s.3.4.4, Facilities Design, Westridge Marine Terminal, p.4A-80, A3S0Y8.
- Trans Mountain Application, s.4.1.2, Purpose of the Environmental Assessment, p.8A-92, A3S4X5.

**Preamble:**

Belcarra residents have concerns regarding increased noise and light pollution associated with an expanded WMT tanker loading facility and the seven-fold increase in tanker shipments that would negatively impact the quality of life for Belcarra residents. The Trans Mountain application makes no mention as to how the WMT will be designed to minimize and mitigate the increased noise and light pollution from the expanded WMT tanker loading facility.

**Request:**

Please provide details on how Trans Mountain intends to utilize 'environmental design' measures for the expanded WMT facility to minimize and/or mitigate the bright lights and noise from both the WMT facility itself and the vessels loading at dockside?

**Response:**

Information on the principles Trans Mountain will apply to lighting design is provided in Section 3.4.4.10, Volume 4A of the Application. When the detailed design of Westridge Marine Terminal (WMT) has progressed to the point where lighting can be selected, an area lighting study will be done. While the purpose of area lighting is operational safety, impact to the surrounding communities will be given due consideration. The results will be used to inform the locations and types of lighting selected.

Information on the principles Trans Mountain will apply to noise mitigation at the expanded WMT is provided in Section 3.4.4.6, Volume 4A of the Application. When the detailed design of WMT has progressed to the point where mechanical equipment can be selected, an additional, predictive noise modelling study will be done. The results will be used to determine what, if any, noise reduction measures are required.

For information on the minimization and/or mitigation of light and noise from vessels loading at dockside, see the response to Belcarra IR No. 1.9.

**1.9 Tankers waiting to be loaded: Noise & Light Pollution****Reference:**

- Trans Mountain Application, s.3.4.4, Facilities Design, Westridge Marine Terminal, p.4A-80, A3S0Y8.
- Trans Mountain Application, s.4.1.2, Purpose of the Environmental Assessment, p.8A-92, A3S4X5.

**Preamble:**

Belcarra residents have concerns regarding increased noise and light pollution associated with the seven-fold increase in the number of vessels that will be waiting at anchor to be loaded at the expanded WMT that would negatively impact the quality of life for Belcarra residents. The application makes no mention as to how Trans Mountain will minimize and mitigate the increased noise and light pollution from the tankers waiting to access the expanded WMT tanker loading facility.

**Request:**

Please provide details regarding Trans Mountain's proposed 'vessel acceptance criteria' for vessels calling at WMT that will reduce noise and light disturbances from both vessels at anchor off the WMT loading facility and vessels at dockside being loaded. Will Trans Mountain require all vessels accessing the expanded WMT to minimize noise and light disturbances while both at anchor waiting to be loaded and at dockside while being loaded?

**Response:**

A copy of **KMC's Tanker Acceptance Standard** (the Standard) is included as Belcarra IR No. 1.9 – Attachment 1.

Section 4.8.1 of the Standard states, "All vessels shall conduct operations within Canada, specifically PMV, in accordance with any additional guidance provided by the Terminal, and always respectful of the rights of the residents in surrounding neighbourhoods to not be unnecessarily disturbed by noise, odours and health or other concerns from vessel operations. Such additional instructions may be verbal or written in nature and shall be issued by the Loading Master". (Belcarra IR No. 1.9 – Attachment 1)

Trans Mountain has been actively working with Port Metro Vancouver (PMV) to develop guidance for the vessels to minimize the effects of light and noise on residents around the Port. Please see attached (Belcarra IR No. 1.9 – Attachment 2).

Trans Mountain plans to operate Westridge Marine Terminal in a manner that will reduce the time vessels bound for the terminal would spend at the designated anchorages in Burrard Inlet and also help mitigate the effects of noise and light from vessels at anchor.

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1.0 INTRODUCTION

1.1 Scope

1.1.1 This Standard describes the requirements for accepting a vessel for berth at Westridge Terminal ("the Terminal"). This document applies to all ocean going Tankers, and covers both the delivery of crude oil and the receipt of refined products (jet fuel).

1.1.2 Any deviation from this Standard requires approval through the FMR process.

1.2 Applicability

1.2.1 This document applies to marine operations at Westridge Terminal.

1.3 Definitions

1.3.1 **Accepted Tanker** – A Tanker that has undergone screening and vetting and found to meet ALL relevant Criteria for Acceptance items described in section 4.0 below and has adequate risk management in place to safely transfer cargo while berthed at the Terminal.

A signature by the Terminal to the Notice of Readiness tendered by the Master shall serve as confirmation of an Accepted Tanker. The Ship/Shore Safety Checklist for the first call on a voyage to the Terminal must be completed prior to this event.

1.3.2 **Barge** – A flat bottomed vessel that is generally unpowered and towed or pushed by other craft. Articulated Tug and Barge (ATB) units are designated in this category.

1.3.3 **Blue Card** – All Flag of Convenience (FOC) vessels that are covered by an ITF-acceptable agreement are issued with a certificate (known as a "Blue Card") by the ITF Secretariat. This signifies the ITF's acceptance of the wages and working conditions on board.

1.3.4 **Canadian EEZ** – The exclusive economic zone (EEZ) is an area of the sea adjacent to and beyond the territorial sea, extending out to 200 nautical miles from the baselines. Canada's EEZ was formally established in 1997 when the Oceans Act came into force.

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1.3.5 **Chief Engineer** – The person in charge of the propulsion, transfer and other equipment of a vessel calling at the Terminal.

1.3.6 **Denied Tanker** – A Tanker that does not meet the relevant Criteria for Acceptance items described in section 4.0 below or could pose additional risk to the Terminal or other vessels at the Terminal or in the harbour.

1.3.7 **HMPE** – "High Modulus Polyethylene" A type of synthetic fibre used in high modulus synthetic fibre ropes. OCIMF accepts high modulus synthetic ropes as a viable replacement for winch-stowed steel wire ropes because of HMPE's high strength to weight ratio.

1.3.8 **Loading Master** – A person who is designated by the Terminal to liaise and communicate with a vessel prior to and during her stay at the Terminal about operations at the dock; the Loading Master acts as the Terminal's Representative.

The Loading Master witnesses operations and confirms that safety and Tanker and Terminal best practices are being followed. He/she has the authority to immediately stop or abort cargo transfer operations and seek immediate actions and assistance to safeguard the Terminal and the environment if he/she determines that, in his/her sole judgement at the time, the situation so demands.

The Loading Master provides local knowledge and prompt on-scene guidance to the Vessel and Terminal during an emergency. The Loading Master's authority does not extend to the vessel or her crew.

The Loading Master updates information in the Terminal's files about the performance of the vessel.

1.3.9 **Master** – The person in overall charge of a vessel and all operations conducted onboard that vessel.

1.3.10 **P&I Club** – A protection and indemnity association of ship owners or operators, offering mutual insurance, generally for third-party liability risks and the defense of claims. There are 13 Clubs that are a member of the International Group of P&I Clubs, which insure the majority of the world's tonnage.

1.3.11 **Q88 Questionnaire** – Intertanko's Standard Tanker Chartering Questionnaire. This document contains details about a vessel's

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physical dimensions, equipment, crew, certification, and a brief operating history.

- 1.3.12 **Ship/Shore Safety Checklist** – A checklist that itemizes the individual and joint safety and operations responsibilities of the vessel and the terminal. This document is based on the requirements of ISGOTT and must be completed prior to commencing every cargo transfer at the Terminal.
- 1.3.13 **SIRE Inspection Report** – The Ship Inspection Report Program (SIRE) is an OCIMF program, which maintains a large up-to-date information database. A key feature of the SIRE program is that it requires a uniform inspection protocol. Inspection reports are maintained on the index for a period of 12 months from the date of receipt and are maintained on the database for 2 years.
- 1.3.14 **Tanker** – A vessel that is not a Barge.
- 1.3.15 **Tariff-Trans Mountain Pipeline ULC Petroleum Tariff, Rules and Regulations Governing the Transportation of Petroleum** on file with the National Energy Board and available on the Trans Mountain website:  
[http://www.kindermorgan.com/business/canada/transmountain\\_tariffs.cfm](http://www.kindermorgan.com/business/canada/transmountain_tariffs.cfm)
- 1.3.16 **Vessel** – A Tanker or Barge capable of transporting petroleum. KMC does not own or operate vessels calling at the Terminal.
- 1.3.17 **Westridge Terminal** – The dock and other facilities located at Trans Mountain Pipeline ULC's Delivery Point on the Burrard Inlet, BC.

**1.4 Abbreviations**

**BCM** – Bow to center of manifold (distance in meters)

**CAP** – Condition Assessment Program

**ECDIS** – Electronic Chart Display and Information System

**EEZ** – Economic Exclusion Zone

**FMR** – Facilities Modification Request

**HMPE** – High Modulus Polyethylene

**IACS** – International Association of Class Societies

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**IMO** – International Maritime Organization

**ISGOTT** – International Safety Guide for Oil Tankers and Terminals

**KMC** – Kinder Morgan Canada

**MARPOL** – International Convention for the Prevention of Pollution from Ships

**NOR** – Vessel Notice of Readiness

**OCIMF** – Oil Companies International Marine Forum

**P&I Club** – Protection and Indemnity Association

**Paris MoU** – The Paris Memorandum of Understanding on Port State Control

**PMV** – Port Metro Vancouver

**PPA** – Pacific Pilotage Authority

**SCM** – Stern to center of manifold (distance in meters)

**SOLAS** – (International Convention for the) Safety of Life at Sea

**Tokyo MoU** – Memorandum of Understanding on Port State Control in the Asia-Pacific Region

**WCMRC** – Western Canada Marine Response Corporation

**2.0 AUTHORITY****2.1 Right to Reject Vessel**

2.1.1 KMC provides transportation service to pipeline shippers. It is the pipeline shippers' responsibility to nominate a suitable vessel to receive or deliver petroleum at the Terminal.

2.1.2 The Rules and Regulations Governing the Transportation of Petroleum utilizing the pipeline facilities of Trans Mountain Pipeline ULC directs as follows:

2.1.2.1 A Shipper Tendering Petroleum for Delivery to the Westridge Terminal is required to submit a Vessel Proposal Form to Trans Mountain Pipeline ULC prior to the Shipper's first batch leaving the Receipt Point.

2.1.2.2 Trans Mountain Pipeline ULC shall have the right to reject any vessel proposed by the Shipper that does not meet the

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safety, odour recovery, dimension or other standards and criteria as set from time to time by the Harbour Master of Vancouver, British Columbia and/or Trans Mountain Pipeline ULC. (Trans Mountain ULC Tariff, Section 21.2; see 'Tariff' in Section 1.3.)

**3.0 ACCEPTANCE SCREENING PROCESS**

**3.1 Tanker Acceptance – General**

3.1.1 Prior to any cargo transfers involving a Tanker berthed at the Terminal, KMC will conduct a two stage Tanker Acceptance Process on behalf of Trans Mountain Pipeline ULC as follows:

- Tanker pre-screening for scheduling purposes
- Tanker physical inspection

3.1.2 The objective of the Tanker Acceptance Process is to ensure Tanker operations do not endanger personnel, the public, or the environment. To meet this objective, the Tanker Acceptance Process will ensure that Tankers accepted for cargo transfer operations at the Terminal:

- Are configured appropriately for safe cargo transfers
- Have no outstanding inspection deficiencies that would materially affect the safe transfer of cargo

3.1.3 KMC shall, after a review of the initially available information provided by the Shipper as part of the pre-screening for scheduling purposes process, either accept or deny scheduling of the vessel to the Terminal.

3.1.4 A vessel that has been deemed acceptable by KMC at the conclusion of the pre-screening for scheduling purposes process shall undergo, and successfully pass, a further physical inspection prior to being granted final permission to transfer cargo at the Terminal. This inspection shall be conducted by KMC's Loading Master and the results of this inspection shall be documented.

3.1.5 The Tanker Acceptance Process shall be performed before and every time a vessel is scheduled to arrive in PMV for the purposes of cargo transfer at the Terminal. This process shall be performed



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regardless of whether or not the vessel has been accepted at the Terminal during a previous voyage. However, once accepted and if the schedule requires, the vessel may berth multiple times during a single voyage to allow cargo to be transferred in separate lifts.

3.1.6 The Tanker Acceptance Process is not intended to, under any circumstances:

- Interfere with the normal safe operation of the vessel; or
- Interfere, replace, or assume the Masters', Owners', Carriers', Managers' own obligations and responsibilities; or
- Interfere replace, or substitute any function or responsibility of Public Authorities or organizations, whether national or international, and/or of Classification Societies.

**3.2 Tanker Pre-Screening for Scheduling Purposes**

3.2.1 Shippers wishing to transfer cargo at the Terminal shall follow the normal nomination process for movement of product through KMC operated pipelines.

3.2.2 The Shipper establishes the quality of the vessel proposed to transfer cargo at the Terminal by undertaking an industry recognized vessel vetting process.

3.2.2.1 The Shipper shall be provided access to this document in order to assist their vessel selection process.

3.2.2.2 From time to time, KMC shall review a Shipper's vessel selection and proposal process to further support the objectives of this Standard.

3.2.3 KMC's Shipper Services group, upon receipt of a nomination from a Shipper for a cargo transfer at the Terminal, shall send a [Vessel Proposal Form](#) and *Vessel Loading Cover Letter* to the Shipper. The cover letter provides guidance to the Shipper related to KMC's Tanker acceptance process.

3.2.4 The Shipper shall complete and return the Vessel Proposal form and a completed Intertanko Q88 questionnaire to KMC's Shipper Services group prior to the Shipper's first batch leaving the Receipt Point.

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3.2.5 Upon receipt of the completed Vessel Proposal form and Q88 questionnaire, KMC Shipper Services shall relay this information to KMC's Loading Master for review and investigation of the proposed Tanker to ensure compliance with Section 4 of this Standard.

3.2.6 Upon completion of the review and investigation described in Section 3.2.5, the Loading Master shall advise KMC Operations in writing of his recommendation to accept or reject the proposed vessel

3.2.7 Based on the recommendation of the Loading Master, KMC's Director, Western Region Operations will render an initial vessel acceptance or rejection decision. This decision will be communicated in writing to the Shipper by KMC's Shipper Services group. A Shipper whose vessel failed this process may request a further review based on additional information.

**3.3 Tanker Physical Inspection**

3.3.1 Where KMC renders a decision to accept a vessel for scheduling purposes at the conclusion of the process described in Section 3.2, KMC's Loading Master will send a *Pre-Arrival Checklist* to the vessel's Master.

3.3.2 The pre-arrival checklist must be completed by the Master or his designate and returned to the Loading Master for review at least twenty four hours prior to vessel arrival at the Victoria Pilot Station.

3.3.3 Non-compliance with the pre-arrival checklist may result in delay or refusal of berthing and/or cargo transfer.

3.3.4 The Loading Master will board the vessel and conduct a physical inspection as described in Section 3.1.4 of this Standard prior to formal acceptance of the vessel as defined in Section 1.3.1.

**4.0 CRITERIA FOR ACCEPTANCE**

**4.1 General Requirements**

4.1.1 The vessel shall have an inspection report entered in the SIRE database that is not more than 6 months old on the nominated date of loading from the Terminal.

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4.1.1.1 During screening, the Terminal shall review the SIRE database for any observations on record that may pose a safety or operations risk. The vessel, owner, or operator shall be requested to explain any anomalies noted.

4.1.2 The Ship's Master shall have reviewed, and agreed to in writing, the terms and conditions specified in the *Westridge Marine Terminal Information and Regulations Booklet*.

**4.2 Vessel Age Requirements**

4.2.1 A Tanker shall be less than 15 years old on her nominated Terminal loading date. An exception to this may apply if the Tanker meets the terms of sub-section 4.2.2.

4.2.2 A Tanker may be considered provided she remains less than 20 years old on the estimated date of becoming free of cargo loaded at the Terminal as detailed in sub-section 4.2.3.

**4.2.3 CAP Equivalency**

Tankers over 15 years of age shall be Condition Assessment Program (CAP) rated with a minimum rating for its hull in accordance with the following tables:

ACP Provider	Name of CAP Equivalent Program
LR: Lloyds Register of Shipping	(Ship Assessment Scheme, SAS)
GL: Germanischer Lloyd	(Condition Assessment Survey, CAS)
DNV: Det Norske Veritas	(Condition Assessment Programme, CAP)
ABS: American Bureau of Shipping	(SafeHull Condition Assessment Survey)
BV: Bureau Veritas	(Harmonized Condition Assessment Programme, HCAP)
Others	Vessel's owner shall provide a letter of equivalency from the CAP provider

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CAP description according to various Class societies as described below and within which the acceptance periods are considered acceptable

LR/DNV/ABS	GL	BV	Acceptance Period
New condition (1)	As new (5)	As new or superficial reduction only (1)	4 years from date of survey
	Negligible waste/wear (4)		
Minor defect (2)	Moderate waste/wear (3)	Minor defect (2)	3 years from date of survey

**4.3 Vessel Construction Requirements**

4.3.1 The vessel shall be of double hull construction.

4.3.2 A Tanker's entire cargo tank area must be either provided with oil-tight center-line bulkheads or designed with center-tanks and wing-tanks.

4.3.3 A Tanker's control room must be so situated as to allow the operator a view of the cargo deck area, including the manifolds.

4.3.4 Tankers must meet specific BCM and SCM requirements for the berth.

4.3.5 A vessel's cargo deck area must be suitably provided with scupper bar (fish plate) to allow for containment of any oil on deck. The aft scupper bar must be of 14" height at side but may reduce to a minimum of 12" towards the centerline of the vessel.

4.3.6 Vessels should have reasonable means to limit water collecting on deck and contain it in onboard tanks, including cargo slop tanks.

**4.4 Vessel Equipment Requirements**

4.4.1 The vessel shall be equipped (including mooring systems) in accordance with her age and size, Flag/State and Class requirements. (Refer to SOLAS, MARPOL, OCIMF, etc.). A copy of her Class Certificate shall be made available upon request.

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4.4.1.1 All vessels over 5000 MT DWT shall carry a minimum of eight (8) mooring lines on powered winches.

4.4.1.2 Mooring lines may be of wire or synthetic material and construction suitable for the purpose. In case of wire or HMPE, suitable mooring tails shall also be provided.

4.4.2 A vessel nominated to receive cargo at the Terminal shall be fitted with a Vapour Recovery System with capacity to connect to a 406 mm (16 inch) or 254 mm (10 inch) vapour recovery line.

4.4.3 All vessels nominated to handle crude oil at the Terminal shall be equipped with an approved inert gas system and all cargo tanks must be in an inerted condition prior to her arrival in the port.

4.4.4 The vessel must be compliant with the requirements established by PMV Harbour Operations Manual and further described in the PPA's requirements. Particular focus shall be placed on the capacity of fitted towing strong points

4.4.5 Tankers of 50,000 DWT or greater shall be provided with an Emergency Towing Arrangement (ETA) of 200 MT SWL both at the bow and stern of the vessel. The procedures for deployment of the ETA must be checked and verified by the ship's crew prior to tanker arrival at Vancouver Harbour.

4.4.6 The vessel shall be fitted with an IMO approved ECDIS, which uses "official" electronic navigational charts.

4.4.7 Tankers shall have individual pressure sensors with means of recording tank pressure fitted to each cargo oil tank if calling at PMV during times of the year when ambient temperature is expected to reach or exceed 23°C.

**4.5 Regulatory Compliance**

4.5.1 The vessel shall carry certification that verifies that she is built and operated in accordance with ALL relevant local and international laws and regulations, as well as industry standards. (Refer to IMO, CSA, and any local requirements).

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- 4.5.2 The vessel shall be registered under the flag of a country on the Tokyo MoU White List and meet the flag criteria for a low risk ship as listed by the Paris MoU.
- 4.5.3 The vessel shall be classed with a member of IACS and shall comply with the applicable class rules.
- 4.5.4 The vessel shall have onboard officers and ratings licensed in accordance with the relevant Flag State and latest Standards of Training and Certification Watchkeepers (STCW) regulations, or equivalent.
- 4.5.5 The vessel shall comply with the provisions of the relevant rules regarding International Transport workers Federation (ITF) compliance and carry a "Blue Card" or alternatively, a special agreement letter.
- 4.5.6 The vessel shall be entered with a P&I club that is a member of the International Group of P&I Clubs and carry the maximum oil pollution cover normally extended by the P&I club, relevant to her size. This will be verified with a Certificate of Entry.
- 4.5.7 The vessel shall, prior to her entry into Canadian waters, enter into an agreement appointing Western Canada Marine Response Corporation (WCMRC) as the designated Spill Response Agency in Canadian waters.

**4.6 Technical and Operational Requirements**

- 4.6.1 The vessel shall be up-to-date with all Class inspection and survey requirements for vessels of her age without any pending or overdue Conditions of Class.
- 4.6.2 The vessel shall carry and implement a Ballast Water Management Manual, which is Class approved. The Loading Master shall review records.
- 4.6.3 The vessel shall be capable of operating under "closed" cargo transfer condition.
- 4.6.4 The vessel will ensure continuous monitoring of the cargo deck and manifold area during cargo transfer.

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4.6.5 The vessel shall have in operation equipment that prevents the overboard discharge of untreated sewage.

4.6.6 The vessel shall secure all bilge overboard discharge valves under charge of the Chief Engineer prior to entry into the Canadian exclusive economic zone (EEZ) and those shall remain secured until the vessel has departed Canadian EEZ.

4.6.7 The vessel shall use fuel in main engines and auxiliary engines that is in accordance with prevalent rules and regulations of the port and region.

**4.7 Crew Qualifications and Conduct Requirements**

4.7.1 Officers and crew serving in a position that require them to communicate with others regarding navigation, loading/discharging and bunker operations, shall have verbal proficiency in English sufficient to carry out these duties.

4.7.2 All vessel officers shall have operational experience on similar vessels.

4.7.2.1 On Tankers, officers shall possess combined time in rank on similar vessels to meet the following criteria:

- Senior Deck officers (Master and Chief Officer) – 36 months;
- Senior Engine officers (Chief Engineer and his immediate subordinate) – 36 months.

4.7.3 The vessel shall have implemented onboard a Drug and Alcohol Policy that meets OCIMF recommendations.

4.7.4 The vessel shall have implemented onboard a Ship Security Plan appropriate to her Flag.

4.7.5 Once within Canadian EEZ, the Master shall be under instructions from Owners to immediately notify Authorities and the Terminal in case of any incident affecting safety or the environment as well as loss of propulsion.

4.7.5.1 WCMRC shall be immediately notified by the Master in case of any oil spill, however minor.

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4.7.6 The Master shall be familiar with means to promptly obtain (in case of need) computerized, shore-based damage stability and residual structural strength information and will confirm that she/he has the authority to do so directly without awaiting additional approval from the Owner.

4.7.7 In case of an emergency that may require salvage, the Master shall have the authority to enter into a Lloyd's Open Form Agreement with SCOPIC clause promptly with a salvor of his choice without having to seek additional approval from the Owner.

**4.8 Local Operating Requirements**

4.8.1 All vessels shall conduct operations within Canada, specifically PMV, in accordance with any additional guidance provided by the Terminal, and always respectful of the rights of the residents in surrounding neighbourhoods to not be unnecessarily disturbed by noise, odours and health or other concerns from vessel operations. Such additional instructions may be verbal or written in nature and shall be issued by the Loading Master.

4.8.2 Any vessel destined to/from the Terminal shall respect and remain outside the voluntary Tanker Exclusion Zone off the West Coast of Vancouver Island, both while laden or in ballast.

4.8.3 The vessel shall always navigate within the designated marine traffic corridors and comply with relevant rules of the Pacific Pilotage Authority (PPA) and Port Metro Vancouver, as amended from time to time. The appointed ship's agent must confirm that those have been shared with the vessel's Master.

4.8.4 A vessel planning to depart Canada via the Juan de Fuca Straits shall agree that, upon exiting the Juan de Fuca Straits, it will steer a course no more northerly than due West (270°) till the vessel is outside Canadian EEZ (200 NM from coast of Canada).

4.8.5 The Terminal may monitor the vessel's position from the time her nomination to load is accepted until she leaves the Canadian EEZ.



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**5.0 REFERENCES**

- 5.1 *The Paris Memorandum of Understanding on port State Control*
- 5.2 Westridge Terminal Marine Operations
  - *A.1 Vessel Proposal Form – Crude Oil Tanker*
  - *A.4 Pre-Arrival Checklist*
  - *A.8 Vessel Loading Cover Letter*
- 5.3 *Westridge Terminal Information and Regulations Booklet*



# NOTICE TO INDUSTRY

**Date Issued:** April 25<sup>th</sup>, 2014

**Date effective:** May 26<sup>th</sup>, 2014

**Subject:**

1. Revision of language within Section 4.3 of Vancouver Fraser Port Authorities' (VFPA) practices and procedures document, the *Harbour Operations Manual*.

2. Addition of Section 4.5.3.1 *Noise and Light Guidelines* to Vancouver Fraser Port Authorities' (VFPA) practices and procedures document, the *Harbour Operations Manual*.

**Application:** Pursuant to Section 56 of the *Canada Marine Act*, Vessels within the jurisdiction of Vancouver Fraser Port Authority (VFPA) will be required to comply with the revision and addition below.

**Details:** The below amendments will be inserted into the PMV Harbour Operations Manual

## Section 4: Vessel Operations

### 4.3 Bunkering Practices and Procedures

**Current Language reads:** "Cape size vessels only may carry out bunkering operations in English Bay to allow better management of vessel traffic in Inner Harbor." **And** "Cape size vessel requiring a transit of the First Narrows for bunkering purposes only, should plan to do so prior to loading, when possible.

**Revision to read:** "Vessels 275 meters in length or greater only may carry out bunkering operations in English Bay to allow better management of vessel traffic in the Inner Harbor." **And** "Vessels 275 meters in length or greater requiring a transit of the First Narrows for bunkering purposes only, should plan to do so prior to loading, when possible."



## **Section 4.5.3: Ships at Anchor**

### ***4.5.3.1 Noise and Light Guidelines***

All vessels, while at anchor, should minimize noise levels and light usage in consideration of local residents.

The following guidelines apply to all vessels anchoring within VFPA's jurisdiction.

#### Noise

- 1) Generator usage should be reduced to the minimum required generator(s) to operate essential services and systems.
- 2) External doors and hatches to machinery spaces must be kept closed as much as possible.
- 3) Power tools and chipping hammers usage must be kept to a minimum and is not permitted on deck between sunset and sunrise.
- 4) Loud hailer and ship's whistle usage should be limited, except as required by the Collision Regulations or by an emergency.

#### Lights

- 1) Deck lights must be kept to a minimum consistent with the safety and security of the vessel.
- 2) Lighting used to illuminate a vessel's decks must be aimed downward, and not outward or toward the shore.

**Feedback:** All feedback can be directed to the attention of:

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