



# VILLAGE OF BELCARRA

"Between Forest and Sea"

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May 6, 2014.

**Information Request To:** Trans Mountain Pipeline ULC (Trans Mountain)

**From:** Village of Belcarra, Intervenor  
Trans Mountain Pipeline Expansion Project (TMEP)

## **Information Request No. 1**

### **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 Lumpsucker. This as yet undocumented and un-named 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.

**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?

### 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?

## 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?

**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.

## 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 seabed 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.

## 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.

**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?

**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:**

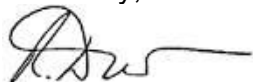
Belcarra residents have concerns regarding increased noise and light pollution associated with the seven-fold increase in the number of vessels that will be waiting at anchor to be loaded at the expanded WMT that would negatively impact the quality of life for Belcarra residents. The application makes 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?

Trans Mountain’s fullsome response to the foregoing questions would be appreciated.

Sincerely,



Ralph Drew, Mayor  
Village of Belcarra

RED/