



VILLAGE OF BELCARRA

"Between Forest and Sea"

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May 26, 2015.


OH-001-2014
Trans Mountain Pipeline ULC ('Trans Mountain')
Application for the Trans Mountain Expansion Project ('TMEP')

WRITTEN SUBMISSION

Name of Intervenor: Village of Belcarra ('Belcarra')

Submission Points: Belcarra's submission herewith addresses the following subjects:
1. WMT Tanker Noise & Lights;
2. WMT Oil Containment Booms;
3. WMT Increased Footprint;
4. Burrard Inlet Marine Habitat;
5. Oil Spill Emergency Response Plans;
6. CCG Oversight.

Date Submitted: May 26, 2015.

Signature: 
Name & Position: Ralph Drew, Mayor
Village of Belcarra

Attached: Written submission regarding Trans Mountain's TMEP application.

Re: Application by ‘Trans Mountain Pipeline ULC’ for approval of the ‘Trans Mountain Expansion Project’

The *Village of Belcarra* (‘Belcarra’) herewith submits to the *National Energy Board* (NEB) for its consideration the following issues and concerns regarding the *Trans Mountain Expansion Project* (TMEP), specifically as related to issues around Trans Mountain’s *Westridge Marine Terminal* (WMT) on Burrard Inlet:

1. WMT Tanker Noise & Lights

The WMT tanker loading facility and the designated vessel anchorages in Central Burrard Inlet are surrounded by regional and municipal parks, three wildlife conservation areas, and residential neighbourhoods in *Belcarra*, *Burnaby* and *North Vancouver*. The TMEP proposes a seven-fold increase in the number of tanker shipments from the WMT, from the current one tanker per week to one tanker per day. Currently, the greatest source of complaints from residents living in proximity of the WMT are bright lights (e.g. tower lights on vessels) and noise (e.g. loud diesel generators) from the vessels at anchor east of the Second Narrows while waiting to be loaded at the WMT.

Trans Mountain should be required to implement measures to minimize and/or mitigate the bright lights and noise from both the WMT loading facility and on-board their client vessels both at anchor and at dockside. This can be accomplished by utilizing environmental design features incorporated during construction of the expanded WMT in combination with requirements for enhanced noise suppression (e.g. better mufflers) for the electrical generators onboard the vessels at anchor waiting to berth. The issues of ‘excessive noise and light pollution’ from the expanded WMT facility and potential impact of these nuisances on wildlife and neighbouring residential areas, thus far have not been adequately addressed by *Trans Mountain* in its NEB application.

2. WMT Oil Containment Booms

While *Trans Mountain* makes a brief mention that there will be oil containment booms around oil tankers berthed at the expanded WMT facility, *Trans Mountain* makes no mention as to the design technology and efficacy of the oil containment booms proposed for the expanded WMT tanker loading facility. It is essential that the type of oil containment boom utilized 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 (1.47 m), based on Halibut Bank data. Site-specific wind data may well predict maximum wave heights of 6 feet (2 m) 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 criteria with conclusions regarding the type of oil containment boom to be used at the WMT.

Another concern is that water conditions in Central Burrard Inlet are not simply dependent on the weather conditions. In addition to winds creating waves that potentially could exceed the performance specifications of oil spill containment booms, the significant amount of commercial and recreational vessel traffic also generates high waves (boat wake) that need to be considered when determining oil containment boom specifications.

There are different types of oil containment booms for different water conditions, and containment boom technology has continually evolved. 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. Trans Mountain should be required to obtain site-specific wind data for the WMT location at the mouth of Indian Arm, and utilize this site-specific wind data as part of the design criteria for determining the 'best available technology' for the type of oil containment booms incorporated as part of the expanded WMT tanker loading facility.

3. WMT Increased Footprint

Today, it is no longer sufficient to just "minimize harm" or "compensate for loss". 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 accompanied by a significant encroachment (up to 1000 ft., 300 m) into 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 *Trans Mountain's* proposal does not mention recompense for tripling its encroachment. In this regard, Trans Mountain should be required to proportionally increase important marine habitat in Burrard Inlet as recompense for the increased WMT footprint; that is, to "give back" to Burrard Inlet and its neighbouring communities adjacent WMT.

4. Central Burrard Inlet Marine Habitat

There are eelgrass beds located throughout Burrard inlet, and these eelgrass beds need to be located and documented (mapped) within the WMT study area. Eelgrass habitats are among the most productive and biologically diverse ecosystems on the planet, and provide habitat for numerous invertebrates such as Dungeness and Red Rock Crabs, sea stars, clams, snails, anemones, and tiny crustaceans. Many fish spend a portion of their life cycle in eelgrass meadows including juvenile salmon, adult herring, pipe fish, stickleback, and many more. Eelgrass meadows are important spawning grounds for herring, which in turn are a major food source for adult salmon. In addition to creating a new rock reef at the WMT facility, Trans Mountain should be required to go beyond the basic regulatory requirement to "minimize harm" or "compensate for loss" and create additional eelgrass habitat within Central Burrard Inlet as recompense for the increased footprint of the WMT.

5. Oil Spill Emergency Response Plans

Trans Mountain's current emergency response plans (ERPs) for dealing with potential oil spills in Central Burrard Inlet are inadequate to protect the unique environmental and socio-economic values of the area surrounding the WMT tanker loading facility. The NEB should require *Trans Mountain* and its ERP contractor — *Western Canada Marine Response Corporation* (WCMRC) — to develop site-specific ERPs based on a 'rapid response and containment' strategy coupled with 'concurrent habitat protection measures' to protect the recreation, tourism, fisheries, sensitive marine habitat and environmental values of Central Burrard Inlet. The rationale for this is as follows:

5.1 Tanker Safety Panel Recommendations

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 site-specific ERPs — known as *Geographic Response Plans* (GRP) — for dealing with potential oil spills in Vancouver harbour.

5.2 Sensitive Habitat & Conservation Areas

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. These unique environmental and marine habitat assets in Central Burrard Inlet underscore the rationale for emergency response plans (ERPs) based on strategies of rapid response and containment of an oil spill coupled with 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.

5.3 Protection of Socio-Economic Values

Burrard Inlet of *Port Metro Vancouver* (PMV) is a key navigable watercourse, and commercial vessel traffic in Burrard Inlet includes cargo ships (forest products, steel products, machinery, grains, coal, chemicals, potash and sulphur); oil tankers (petroleum products); cruise ships; and container ships (household goods). Fishing vessels use Burrard Inlet to berth, fuel, and access fishing grounds. Commercial fishers in Central Burrard Inlet mainly harvest Dungeness crab, prawn and shrimp.

Marine tourism activities in Central Burrard Inlet include dinner-cruise vessels, sport fishing, aboriginal canoe tours, kayak tours, and eco-tourism boat charters. Virtually every one of these current uses would be significantly devalued or possibly destroyed by an oil spill; particularly an oil spill not managed as quickly and effectively as possible utilizing 'best available technology'. The environmental and socio-economic values of Central Burrard Inlet are very high, and warrant priority protection measures.

Marine recreation in Central Burrard Inlet is both intense and diverse, including fishing, boating, kayaking, water skiing, wake boarding, paddle boarding, windsurfing, kite boarding, swimming, and scuba diving. Recreational users also access major destinations through Central Burrard Inlet; notably Indian Arm, where provincial and regional parks cover much of the shoreline.

Due to its location, Belcarra's residents have historically enjoyed Indian Arm's waters in a variety of ways. In addition to the above-noted recreational activities, Belcarra's residents beachcomb, fish, crab, hike, sit and relax on and by the water. It is the principal feature that distinguishes the community of Belcarra from other communities not directly located on Central Burrard Inlet. Generations of Belcarra residents have benefitted from these activities, and the current generation of Belcarra children have learned to swim in these waters and generally enjoy the recreational opportunities provided by Indian Arm. Their children should have the same opportunity. An oil spill of any size into Central Burrard Inlet would irreparably harm the marine environment of Indian Arm and the social fabric of the Belcarra community.

5.4 WCMRC 'Home Base Dock'

A serious deficiency with WCMRC's emergency response planning for Burrard Inlet is lack of a 'Home Base Dock'. Rapid deployment of personnel and equipment depends on easy and assured access to Burrard Inlet and WCMRC's response vessels. At present, WCMRC personnel must drive 10-plus minutes to the *Suncor* dock on Barnet Highway in order to board a response vessel. However, rush-hour traffic volume or traffic stoppage due to vehicle accidents (or other situations such as the 2007 pipeline rupture incident) could delay or prevent WCMRC's response. A proper post-mortem of the 2007 oil spill event should have identified and addressed this serious deficiency in WCMRC's emergency response plan. It is very disturbing that an organization such as WCMRC, tasked with the responsibility to protect Burrard Inlet's sensitive marine environment, still does not have its own 'Home Base Dock' after 20 years of operation! WCMRC should be required to establish a 'Home Base Dock' within Burrard Inlet to guarantee assured access to WCMRC's spill response vessels in Burrard Inlet on a '24/7' basis, and assure a one-hour maximum response time to all oil spills within Burrard Inlet.

5.5 WCMRC Resourcing

Although WCMRC has a dedicated and professional staff, at present WCMRC continues to be seriously under-resourced for its mandate to protect Burrard Inlet's public assets with significant socio-economic and environmental values. WCMRC has a number of response vessels staged around Burrard Inlet, but under ideal conditions WCMRC is only able to muster two or three three-person response crews. A minimum of four fully trained three-person response crews — fulltime WCMRC personnel — are needed to ensure protection of Burrard Inlet's public assets: two crews to deploy primary containment booms around the spilled oil, and two crews to simultaneously deploy secondary booms to protect sensitive marine habitat areas. With this perspective, WCMRC's current personnel resources are insufficient for the existing level of shipping

activity in Burrard Inlet, let alone the anticipated increase in shipping volumes. WCMRC should be required to establish sufficient trained in-house personnel to ensure a '24/7' comprehensive response for the proper protection of Burrard Inlet's sensitive marine habitat and wildlife assets.

5.6 Rapid Response & Containment

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 the definition of 'rapid response' for a location such as Burrard Inlet. Such a response time is both realistic and achievable. By combining 'rapid response' with containment booms pre-staged at strategic locations, the inter-tidal zones and sensitive habitat areas can be isolated and protected while WCMRC undertakes the process of oil spill clean-up. Transport Canada's present 6-hour maximum response time is totally unacceptable for the protection of the sensitive marine habitat and wildlife assets of Burrard Inlet, and should be reduced to a one-hour maximum response time for Burrard Inlet.

5.7 Pre-Staged Containment Booms

The standard 'World Class' approach to developing a 'rapid response and containment' strategy is the use of equipment caches coupled with pre-staging of oil spill booms for quick deployment in the event of an oil spill. Pre-staging of emergency oil spill equipment significantly reduces the response time needed to deploy containment booms as compared to other procedures such as transporting booms from elsewhere without site-specific preparation. Accordingly, Trans Mountain and WCMRC should be required to develop and implement a response strategy utilizing pre-staged oil booms for the protection of the sensitive marine habitat and conservation areas of Central Burrard Inlet that are adjacent to the WMT tanker loading facility.

5.8 WCMRC Personnel Training

As every emergency response organization understands, prerequisite training in the use of equipment and understanding the strategies of site-specific ERPs are absolutely essential to the successful execution of an ERP. Response to an oil spill in Central Burrard Inlet requires use of tactics that are distinctly different from those required for an oil spill in the Strait of Georgia, and therefore necessitates additional training over and above current practice. In addition, where rapid response is a key requirement, as is the case for Central Burrard Inlet, then regular practice drills that include full deployment of pre-cached containment booms are also essential. WCMRC should be required to demonstrate on an annual basis that its personnel can respond within a one-hour timeframe on a '24/7' basis. At present, *Transport Canada's* legislated response times and training requirements are inadequate for Burrard Inlet, and insufficient to ensure a one-hour response time by WCMRC within Burrard Inlet. WCMRC also should be required to ensure that all WCMRC personnel are trained and qualified based on documented training standards and programs that include records of training received.

5.9 Unanticipated Risks

The *Trans Mountain* application to the NEB is pre-occupied with the risks associated with the movement of oil tankers, and hasn't given adequate consideration to the risks due to 'unanticipated events' — most of which are the result of 'human error' — the

definition of an 'accident'. There is a much greater likelihood of 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. Or, as was the case in the 2007 oil spill incident, a third-party contractor damaging WMT infrastructure. It most likely will be the 'unanticipated event', with an unquantifiable risk, that will result in an oil spill in Central Burrard Inlet. It is the 'unanticipated event' that underscores the importance of having a comprehensive emergency response plans prepared and operationally ready for the protection of the environmental and socio-economic values of Burrard Inlet.

6. Canadian Coast Guard Oversight

The recent bunker oil spill into English Bay by the freighter 'MV Marathassa' has highlighted significant problems with the *Canadian Coast Guard's* (CCG) ability to effectively manage oil spills incidents. That oil spill demonstrated that both emergency response planning and emergency response capability by the CCG are inadequate for British Columbia, and substantially below that which might be considered "World Class":

- It is our understanding that a CCG vessel was not dispatched to investigate the 'Marathassa' oil spill when the incident was reported because the CCG did not have a vessel available at the time. The CCG had to request a *Port Metro Vancouver* vessel to investigate the incident without the presence of CCG personnel.
- It is our understanding that one hour after the spill was reported the CCG called WCMRC to put the organization into "standby" mode. Following the "Precautionary Principle", the CCG should have immediately put WCMRC into "standby" mode following notification of the oil spill.
- It is our understanding that three hours after the spill was reported, WCMRC had to self-dispatch its response vessels to English Bay under the auspices of a "training exercise" because further direction from the CCG to respond was not received. This resulted in the loss of the critical three daylight hours following report of the incident.

One can only conclude that the CCG has neither the capacity, resources nor priority focus necessary to provide the oversight needed for current shipping traffic within Burrard Inlet, let alone increased oil tanker shipments from British Columbia ports. The CCG is also overly reliant on non-government emergency response resources such as WCMRC. The CCG should be required to have a British Columbia center that is adequately resourced and staffed with trained personnel to provide the oversight, response and auditing capability necessary to ensure that:

- Appropriate emergency response plans are developed by *Trans Mountain* and WCMRC, including site-specific ERPs for Central Burrard Inlet that are based on a rapid-response and containment strategy utilizing 'best available technology';
- WCMRC personnel are properly trained and qualified based on documented training standards and programs that include records of training received;
- WCMRC is annually audited and required to demonstrate that its personnel can respond within a maximum one-hour timeframe (on a '24/7' basis) to oil spills within Burrard Inlet; and
- CCG has vessels, financial resources and trained personnel needed to appropriately respond to oil spill incidents within Burrard Inlet on a '24/7' basis.

7. Conclusion

The foregoing issues need to be appropriately addressed by *Trans Mountain*, WCMRC and *Transport Canada*. As a consequence, municipal Council for the Village of Belcarra cannot support the TMEP application without knowing these concerns have been resolved. The environmental and socio-economic values of Central Burrard Inlet are very high, and warrant both 'state-of-the-art' design criteria for the WMT tanker loading facility and development of site-specific ERPs that are proportionate to those high values. WCMRC needs to work with the surrounding communities to develop oil spill ERPs based on a strategy of 'rapid response and containment' coupled with 'concurrent habitat protection measures' to protect the recreation, tourism, fisheries, sensitive marine habitat and environmental values of Central Burrard Inlet. WCMRC also should be required to establish a 'Home Base Dock' within Burrard Inlet, and incorporate a strategy of pre-staged containment booms that can be quickly deployed to isolate and protect sensitive marine habitat areas in the event of an oil spill in Central Burrard Inlet. In addition, *Transport Canada* should legislate a one-hour maximum response time for oil spills within Burrard Inlet, and ensure the use of 'best available technology' for oil spill containment and cleanup.