



TRANSMOUNTAIN

Our Goal and Commitment

We have a clear goal – to facilitate continued safe, efficient and environmentally responsible transportation of Canada’s petroleum resources to local and international markets.

Trans Mountain does not own or operate Project-related marine vessels. However, Trans Mountain’s values and principles commit us to doing what we can to mitigate the potential Project effects on marine mammals, particularly the southern resident killer whale (SRKW—species at risk). Further, Trans Mountain recognizes the cultural significance of marine mammals such as SRKW in local Indigenous history, culture and spirituality.

Our commitment to protecting marine mammals is reflected through:

- Our interest in supporting and participating in joint industry-government initiatives to determine or develop effective measures to reduce the potential effects of underwater noise on marine mammals in the region.
- Engagement to learn from local Indigenous groups and incorporate what we can into our own practices and share them with industry.
- Development of a Marine Mammal Protection Program – enshrined as NEB (now CER) imposed Condition 132 – to identify Project-specific measures and regional collaborative initiatives to be implemented by Trans Mountain and other operators along the marine shipping lanes to mitigate and manage potential cumulative environmental effects on marine mammals.
- Our continued efforts to promote awareness and education within the commercial maritime shipping industry.

Marine Mammal Fact Sheet



ACCEPTING VESSELS at Westridge Marine Terminal (WMT)

Although Trans Mountain has no direct control over vessels transiting to and from WMT, as a responsible marine terminal operator we can control which vessels are accepted at our terminal.

For this purpose, Trans Mountain has established a Vessel Acceptance Standard, implemented through the Vessel Acceptance Procedure. All vessels undergo a two-stage acceptance process: pre-screening of vessels before arrival and physical inspection upon arrival.

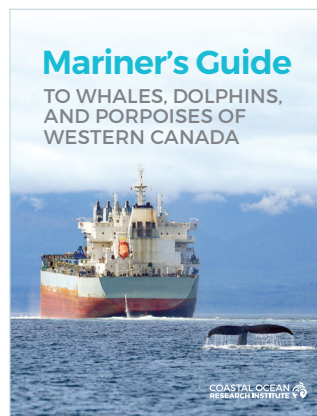
Why is Vessel Acceptance Important?

Trans Mountain wants to ensure vessels calling on WMT are in good physical condition, properly maintained and operated in accordance with accepted global marine operations standards. In this way, Trans Mountain minimizes risk to safety, people and the environment.

How is Marine Mammal Safety Considered?

During vessel acceptance, Trans Mountain reviews a number of items that directly relate to the safety and well-being of marine mammals. These include the following five items reviewed by our Loading Masters who attend each vessel:

- Each vessel is requested to obtain a copy of the Mariner’s Guide to Whales, Dolphins and Porpoises of Western Canada on board, and become aware of the reporting requirements. Thereby vessel staff can recognize the various types of mammals in the area and report observations of these animals, including any animal in distress. This publication can be obtained from the VFPA* or through the vessel’s agent; it is available in both hard copy and PDF format.
- Minimizing underwater noise radiation caused by excessive fouling of the vessel’s hull and/or propeller. Every vessel is asked to provide the dates of the last hull and propeller cleaning.



- Vessels are asked to commit to participating in seasonal underwater noise reduction initiatives that include slowing down when passing those sections of the route where there is a higher prevalence of orcas.



- Ensuring no deleterious

effluents are discharged. The vessel must have properly operating equipment that prevents the discharge of untreated sewage overboard. All bilge overboard discharge valves must be secured before the vessel enters the Canadian exclusive economic zone (EEZ) and must remain secured until its departure from the Canadian EEZ.

- Ensuring prompt and effective response in case of a spill. Every vessel is required to confirm it has an oil spill response plan, including the means to notify authorities. Every vessel is also required to confirm it has an agreement with WCMRC for oil spill response.

*portvancouver.com/echo



TRANSMOUNTAIN

Marine Mammal Protection Program

Trans Mountain is concerned about the health and safety of marine mammals in the Salish Sea and intends to support mitigation measures that align with known risks to whales*, such as: • Availability of prey • Ocean pollution • Disturbance from human activities (such as underwater noise from marine shipping)

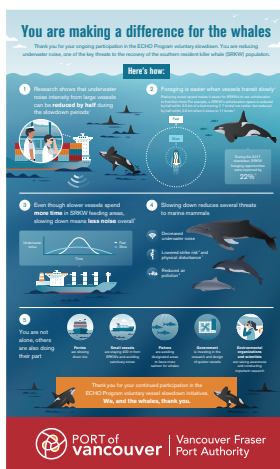


AVAILABILITY of Prey

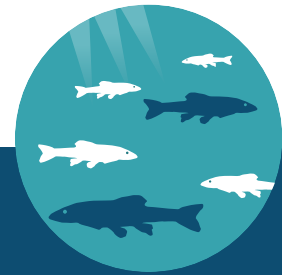
Trans Mountain signed a funding agreement with the Pacific Salmon Foundation for multi-year salmon programs as a means to increase salmon resources (the main food source of the SRKW) and improve the overall ecosystem health in SRKW habitat.

The agreement includes:

- \$2.5 million in funding to support grants to community groups for salmon conservation and coastal research, including the Salish Sea Marine Survival Project, the Strategic Salmon Health Initiative and the Partnered Initiative/Community Salmon Program.
- A 20-year contribution to the foundation's post-secondary education bursary program.
- \$500,000 to fund a third-party, post-construction assessment of highly sensitive water crossings, the results of which will be made public.



The ECHO program's outreach to mariners poster intended for a ship's bridge, "You are making a difference for the whales," which can be found at: portvancouver.com



Contribute to FOOD SUPPLY for MARINE MAMMALS

- **INVESTMENT** in initiatives that improve food supply
- **CONSERVATION** programming at Westridge such as hosting the fish pen for juvenile salmonid release and establishing fish habitat
- **EXERCISING CAUTION** in proximity of important SRKW feeding grounds through special routing instructions and offshore waiting area



Manage disturbance from MARINE SHIPPING activities (e.g., underwater noise, vessel strike risk)

- **SHARE INFORMATION** on vessel design and maintenance procedures, encourage operations that align with local initiatives to reduce the impact of underwater noise effects
- **WORK WITH SHIPPERS** on initiatives that could mitigate overall shipping impacts
- **SUPPORT INITIATIVES** that will improve the environmental performance of marine shipping. E.g., Green Marine and the ECHO Program waiting area



BUILD UNDERSTANDING OF MARINE MAMMALS and the effects of vessels

- **RESEARCH** – Support programs with a focus on actions from SRKW Recovery Strategy
- **TECHNOLOGY** – Work with service providers (e.g., escort vessel suppliers) to test and apply new technologies designed to minimize underwater noise effects



PREVENT and mitigate OCEAN POLLUTION

- **PREVENTION** – Marine terminal operating standards and environmental protection initiatives, vessel acceptance standard, enhanced tug escort and pilotage for tankers
- **RESPONSE** – Marine terminal emergency preparedness, Enhanced Response Regime (ERR) in the Salish Sea by WCMRC and addition of spill response equipment to escort tugs



ENGAGEMENT and COMMUNICATION to protect marine mammals

- **ADOPTION** of voluntary efforts to implement best practices from research and collaboration
- **TRADITIONAL KNOWLEDGE** from Indigenous groups considered in the Marine Mammal Protection Program actions
- **AWARENESS and EDUCATION** of Trans Mountain personnel and terminal stakeholders such as ship operators, ship owners, ship agents and pipeline shippers

Vancouver Fraser Port Authority (VFPA)-led Enhancing Cetacean Habitat and Observation (ECHO) Program

Initiated in 2014 in collaboration with government agencies, Indigenous groups, marine industry users, non-government organizations and scientific experts, the program is aimed at better understanding and managing the potential effects on cetaceans from commercial vessel activities throughout the southern coast of British Columbia.

Trans Mountain provided funding of \$1.6 million from 2015-2018 with the VFPA to the ECHO program to support its research and mitigation development initiatives. Under the ECHO Program, various projects, scientific studies and education initiatives will be undertaken, including:

- Implementation and monitoring of voluntary vessel slowdown zones to reduce underwater noise (Haro Strait, Boundary Pass and Swiftsure Bank).
- Noise monitoring and data collection (deployment of an underwater noise-listening station in the Strait of Georgia and Juan de Fuca Strait. Monitoring and reporting on baseline regional ambient underwater noise conditions through a network of hydrophones in the Salish Sea).
- Lateral displacement trials for barge and other near-shore traffic in the Strait of Juan de Fuca to move vessel-source noise away from critical habitat when SRKW are present.

- Rollout of the Whale Report Alert System mobile app to report whale locations and reduce the likelihood of ship strikes.
- Release of the Mariner's Guide to Whales, Dolphins and Porpoises of Western Canada to educate mariners about whales with proactive protection guidelines.

For more information about the ECHO Program, visit the VFPA website at portvancouver.com/environment/water-land-wildlife/echo-program.

Marine Industry Conservation Agreement

In May 2019, the marine transportation industry entered into a conservation agreement with the Government of Canada to support ongoing recovery efforts for SRKW on the BC coast. Over five years, parties committed to work together towards the development, implementation, monitoring, assessment and adaptation of voluntary threat reduction measures. The agreement formalizes the role of the ECHO Program in advancing research and educational outreach to better understand and reduce the impact of marine shipping activities on SRKW. Signatories include:

- Council of Marine Carriers (CMC)
- Chamber of Shipping of BC (COSBC)
- Cruise Lines International Association (CLIA)
- DFO
- International Ship Owners Alliance of Canada (ISAC)
- Pacific Pilotage Authority (PPA)
- Shipping Federation of Canada
- Transport Canada
- VFPA



Green Marine (GM) voluntary environmental program for the North American marine industry (green-marine.org)

Trans Mountain's Westridge Marine Terminal (WMT) joined the program in 2013 to benchmark and commit to continuous improvement in WMT's environmental performance. In 2015, GM advanced underwater noise as a new performance measure and created a working group of experts, including members of the scientific community (e.g., engineers, naval architects, biologists, NGOs and academics), the maritime industry (ship owners, port authorities/administrators and terminal operators) and government agencies (Transport Canada and Fisheries and Oceans Canada or DFO).

Highlights of the GM Program include:

- Participation by Trans Mountain as the terminal's representative in the Underwater Noise Working Group. The working group developed performance indicators for ship owners that are now part of GM performance criteria.
- The 2016 report for Transport Canada on underwater noise from shipping and the effects on marine life, along with potential solutions. Underwater noise monitoring is a program now captured under the Government of Canada's Ocean Protection Plan.
- Trans Mountain will encourage ship owners to consider the GM Program and promote the underwater noise performance measures outlined in the Westridge Marine Terminal Regulations and Operations Guide (WMTROG).

ENHANCED Risk Controls

Although a robust maritime safety regime is already in place for the entire trans boundary area, jointly managed by Canada and the United States, and with vessel traffic due to the Project remaining a low percentage of all vessel traffic, Trans Mountain will ensure enhanced risk control measures will be in place to prevent oil spills from tankers. Such measures include the following:

- **Extended Tug Escort (NEB Condition 133):**

Laden tankers are already required to be escorted by a tug from the port of Vancouver to Race Rocks. In future, tug escort will extend to Buoy J situated near the western entrance to the Juan de Fuca Strait. Should the tanker be disabled for any reason, the escorting tug will be capable of ensuring its safety under prevailing weather conditions.



- **Extended Pilotage:**

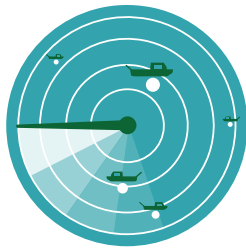
Current Pilot Regulations require vessels to have a pilot onboard till Victoria. At the request of Trans Mountain, the Pacific Pilotage Authority has agreed to extend the pilot onboard till Race Rocks.



- **Enhanced Situational Awareness:**

Measures will be in place to make users of the marine network aware of the added safety precautions and passage of a laden tanker through:

- Safety calls by pilots and masters of laden tankers over radio
- Issuance of Notices to Industry by the PPA
- Boating safety engagement and awareness strategy led by the PPA
- Promoting more use of the Automatic Identification System (AIS and radar reflectors by smaller vessels
- Swiftsure Bank cautionary for mariners to avoid fishing vessels

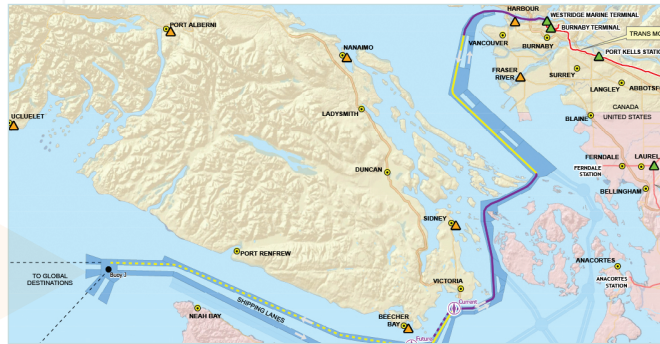


- **Government of Canada Enhanced Maritime Situational Awareness (EMSA)**

Program developed with Indigenous groups shares information about vessel traffic and provides opportunities to mitigate impacts to sensitive areas such as SRKW habitat and areas of traditional use identified through the portal.

Ocean Pollution MANAGEMENT

- Trans Mountain's Vessel Acceptance Standard (TAS) ensures all vessels proposing to undertake product transfer at WMT are screened and inspected before being accepted and allowed to undertake operations at the terminal.
- ECHO program collection and analysis of seafloor sediment and mussels to establish baseline levels of environmental contamination.
- In response to Canadian Energy Regulator (CER) recommendations as well as Accommodation Measures proposed to Indigenous groups on the approval of TMEP, the Government of Canada is advancing a Cumulative Effects of Marine Shipping Initiative and the Coastal Environmental Baseline Program to better understand coastal ecosystems and the potential effects of regional marine vessel activity on the environment. Indigenous communities, local communities and other stakeholders help to identify key priorities and collect relevant information to assess the cumulative effects of marine shipping, including comprehensive baseline data to better detect changes in the environment over time.



Legend

- ▲ Canadian Marine Spill Response Base (Future)
- ▲ Trans Mountain Facility
- Shipping Lanes (used by TM Traffic)
- Shipping Lanes
- Tug Escort (tethered)
- Tug Escort (tethered - Future)
- Tug Escort (untethered - Commenced 2015)
- Tug Escort (untethered - Future)

Oil Spill Response ENHANCEMENTS

Trans Mountain is funding the enhanced oil spill response regime for the south coast of BC, which brings significant benefits to users of the marine network and coastal communities. The \$150-million program being implemented by WCMRC will significantly improve available response capacity in the region and reduce response time in case of any marine oil spill. WCMRC is the Transport Canada-certified Response Organization. Please visit transmountain.com/Marine-safety to learn more.



Spill response barge with training booms



WCMRC - Fleet in Front of Port Alberni Base

For more information behind the efforts to mitigate effects of shipping on whales, visit the Government of Canada's website: Protecting Endangered Whales dfo-mpo.gc.ca/campaign-campagne/protectingwhales-protegerbaleines/index-eng.html

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