

INDIGENOUS MONITOR OVERVIEW REPORT

Month: July 2021

Project Region: Lower Mainland

Indigenous Monitor days on-site: 20

**Kilometre Posts (KPs) monitored:
Spread 7 KP 1166.515–1173.622**

Indigenous Monitors on the Trans Mountain Expansion Project – Overview

The Trans Mountain Expansion Project (the Project or TMEP) has retained Indigenous Monitors as integrated members of its construction Environmental Inspection team. Indigenous Monitors work with Environmental Inspectors to monitor compliance with mitigation measures to minimize impacts to traditional resource use and cultural/heritage impacts during construction. Indigenous Monitors have a strategic role in providing traditional knowledge directly and pragmatically to construction oversight practices and bring an Indigenous lens to daily environmental inspection activities.

This Overview Report provides highlights of the Indigenous Monitors' day-to-day work and key mitigation measures observed by the Monitors related to Project construction in the Lower Mainland. The purpose of this report is to provide an update on Indigenous Monitor activity to Indigenous groups.

During this reporting period, key Project activities in the Lower Mainland region involving Indigenous Monitors included construction at Westridge Marine Terminal (WMT), Burnaby Terminal and on Spread 7. Activities included underwater noise monitoring and fish deterrents, environmental features, Traditional Land Use (TLU) sites, wildlife mitigations and construction housekeeping.

The Project Construction Progress Report (Condition 106) for July 2021, which reports environmental events and deficiencies in Tables 4 and 5 respectively, is found [here](#).

The Project has a process for sharing information related to potential TLU and Heritage Resource chance finds during construction. The Protecting TLU and Cultural Heritage Resources Fact Sheet ([link here](#)) provides an overview of the chance find communication process. Applicable Indigenous groups are notified and engaged directly on potential chance finds.

For more information: email info@transmountain.com or call 1.866.514.6700.

Trans Mountain COVID-19 – Our Response

Trans Mountain is actively monitoring the COVID-19 situation with the help of federal, provincial and local agencies. Trans Mountain's top priority remains the health and safety of its workforce, their families and our communities.

For more information: transmountain.com/covid19

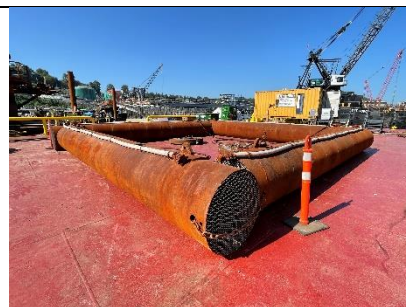
Underwater Noise Monitoring and Fish Deterrents

Offshore pile driving activities resumed at WMT in July. The marine derrick barges installed steel piles using vibratory drivers and impact hammers. Standard mitigation measures during all in-water pile driving activities include monitoring underwater noise levels using hydrophones to verify noise levels are below the applicable thresholds for the protection of fish and marine mammals. This is a requirement of the Fisheries and Oceans Canada *Fisheries Act* Authorization for the Project.

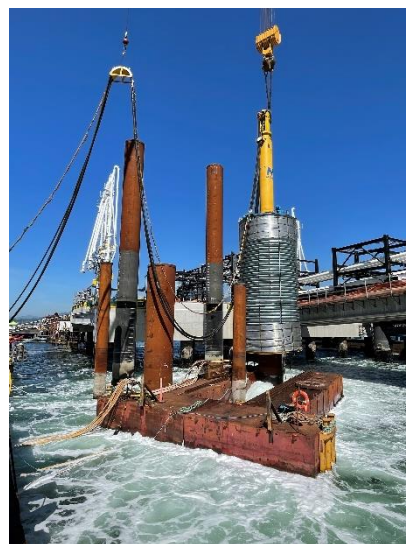
During impact pile driving, an underwater bubble curtain is installed around the pile to reduce underwater noise levels. In July, secondary bubble curtain designed and built by Trans Mountain and its contractor was installed to further reduce underwater noise levels. Analysis of underwater noise data indicates the use of two bubble curtains (primary and secondary) results in greater noise reduction than the primary bubble curtain alone.

To further mitigate potential impacts to fish, fish deterrent systems that combine high-intensity light with a low-frequency acoustic signal are deployed prior to impact pile driving. The purpose of the deterrent systems is to temporarily deter fish from the immediate area around the pile where elevated noise levels generated by impact pile driving could result in harm to fish. The sound signal used by the deterrent systems covers the most sensitive hearing band of the fish and is also within the audible range of humans. However, the signal is significantly below the high-frequency hearing of marine mammals so will not adversely affect marine mammals in the vicinity of the site. Two acoustic deterrent systems are deployed and operated for 10 to 30 minutes immediately prior to the start of impact pile driving. These units are lowered into the water from a barge and positioned at 1/3 and 2/3 water depth. The deterrent systems are used for all offshore impact pile driving.

The Indigenous Monitor at WMT has been trained in the operation of the fish deterrent systems and performs ongoing inspection of the in-water pile driving activities to verify all relevant environmental protection measures and mitigations are being implemented and functioning properly.



Secondary bubble curtain on deck of DB General prior to deployment.



Primary and secondary bubble curtains installed and operating during impact pile driving.

Foreshore Expansion – Turbidity Curtain

A custom-built turbidity curtain is installed surrounding the WMT foreshore expansion area to protect the marine environment during construction. Turbid water (i.e., water containing suspended sediment) may be generated by wavy conditions, rainfall or construction activities on the foreshore. The turbidity curtain is designed to contain any turbid water within the immediate construction work area. It is an important environmental protection measure that is implemented year-round and is monitored and inspected regularly for its integrity and effectiveness.

The Indigenous Monitor performs routine inspection and monitoring of the turbidity curtain at the WMT foreshore. If construction material does enter the marine environment, the Indigenous Monitor inspects and monitors the effectiveness of the turbidity curtain, which includes collecting water quality measurements (e.g., turbidity, pH) inside and outside of the curtain. Following an observed release on July 7, necessary protocols were enacted including halting work and including water sampling. It was determined that the turbidity curtain was functioning as intended.



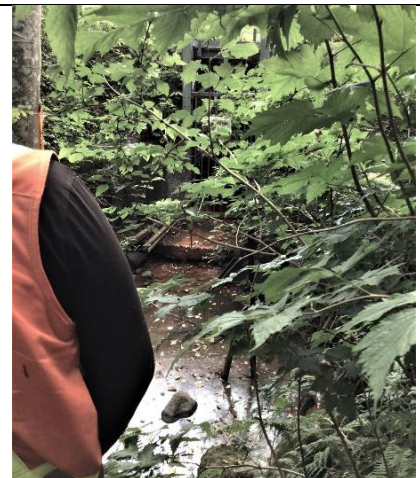
Turbidity curtain at the WMT foreshore was inspected on July 7.

Culturally Modified Trees (CMT)

Resource-Specific Mitigation Tables and Environmental Alignment Sheets are used to illustrate locations of and summarize specified mitigation for previously identified historical resources and TLU areas. Such locations have been identified via TLU studies conducted by Indigenous groups and archaeology baseline assessments that have been conducted in relation to the Project for more than seven years.

In the event a site or location is observed in the field that may be a previously unidentified TLU area, the TLU Site Discovery Contingency Plan is followed.

The Indigenous Monitor working at Burnaby Terminal participated in a routine environmental inspection of the Eagle Creek tributary and Silver Creek tributary drainage outlet located outside the southeast perimeter of the terminal fenceline. While approaching the drainage outlet through a forested area, a potential culturally modified tree was identified. The Environmental Inspector immediately initiated the TLU Site Discovery Contingency Plan and the Trans Mountain resource specialist was contacted for evaluation of the tree and to advise on potential mitigation measures. The engagement process with applicable Indigenous groups was also initiated to share information about the feature and seek



Eagle Creek and Silver Creek tributary drainage outlet located near the outside of the southeast perimeter of the Burnaby Terminal fence line.

feedback. As the tree is located outside the Project disturbance footprint, no impacts to the tree will occur from the Project.

On Spread 7A from KP 115.539 to KP 1153.208 and KP 1165.113 to KP 1166.378, the Indigenous Monitor participated in pre-construction walk-throughs looking for CMTs and other potential TLU sites that had not previously been identified. No CMTs or other TLU sites were identified during the walk-throughs.



Forested area in CWP 61 where a pre-construction walk-through was conducted.

Environmental Features/Traditional Land Use Sites

During construction, cultural use areas are noted along the right-of-way. Such locations have been identified during TLU studies conducted by Indigenous groups prior to construction. As part of the Environmental Protection Plan, a Traditional Land Use Sites Discovery Contingency Plan outlines steps to take if previously unidentified TLU sites are identified during construction.

Near the Brunette River Trenchless Crossing site located on Spread 7 at Construction Work Package (CWP) 88 (KP 1173.3) and CWP 89 (KP 1173.4), during a daily inspection, the Indigenous Monitor observed that a previously identified TLU site required additional signage per the Environmental Protection Plan. The Environmental Inspector was notified who directed the Trans Mountain resource specialist to address the deficiency by adding the appropriate buffer and signage.



TLU stake and buffer added at CWP 88/89.

Wildlife Observation and Management

Wildlife observation and management is ongoing in the Lower Mainland sites. The Indigenous Monitors participate in discussions relating to wildlife protection strategies with the Environmental Inspectors and Trans Mountain Wildlife Resource Specialists and monitor and inspect that mitigation measures are effectively in place including pre-construction activity wildlife sweeps.

In July, there was little activity occurring on Spread 7 at CWP 62/63 (Colony Farm laydown yard), however, the Indigenous Monitors inspected that wildlife fencing and bird deterrents were maintained and effective, and that no safety hazards existed. In preparation for clearing activity to begin in August, the Trans Mountain wildlife resource specialist performed



Buffer placed due to nesting swallow on CWP 67. It was well marked and construction activity stopped.

wildlife sweeps including Oregon Forest snails and bird nests. The Indigenous Monitor observed and participated in the sweeps and monitored that the existing wildlife boundaries were effectively marked.

At Burnaby Terminal, the Indigenous Monitor inspected that wildlife buffers placed around the terminal site were maintained and had appropriate flagging and signage in place. Previously identified bird nests and mitigations were monitored, and in July numerous nests were deemed inactive by the Trans Mountain wildlife resource specialist and the buffers removed.

WMT Marine Construction Safety Boom Bird Deterrents

At WMT, bird deterrents (metal tags and spike strips) were installed on the marine safety perimeter to deter birds (e.g., gulls) from landing on the fence and potentially becoming entangled in the concertina wire. The Indigenous Monitor at WMT was involved in selecting the most appropriate deterrents for this application and has performed ongoing inspections since the deterrents were installed. In July, the Indigenous Monitor participated in an inspection of the deterrents along the marine safety perimeter to determine if any of the metal tags or spike strips were missing or needed replacement. Ten spike strips were missing and were promptly replaced.



Existing bird buffer on CWP 62 when bird sweep being conducted.



Trans Mountain wildlife resource specialist inspecting the outflow pipe at area 211 and confirmed the nest inactive.



IM inspecting bird deterrents on marine construction safety boom at WMT.

Construction Site Housekeeping

The Indigenous Monitors at all sites in the Lower Mainland regularly conduct inspections of the various construction areas for general housekeeping measures. This includes observing and documenting garbage and recycling disposal, scrap metal management, waste storage, fuel storage and proper use of vehicle and equipment spill kits.

Waste or construction materials that are not properly secured or disposed of are flagged to the Environmental Inspectors and contractor site services crew for cleanup. The recycling bins are also inspected to make sure waste is properly segregated into the right categories, which include metal, wood, general waste, construction waste and bottles.

At Burnaby Terminal, the Indigenous Monitor regularly inspects the spill kits around the terminal site. Kits are inspected for volume and types of spill response material and to ensure the appropriate placement in relation to work fronts. Spill response procedures listed in the Environmental Protection Plan (EPP) are also regularly communicated to contractor operators on how to contain a spill and what to do during a spill. Drip trays are also inspected under stationary equipment to make sure they are present when parked. In July, the Indigenous Monitor noted that housekeeping efforts by site personnel were improving with fewer minor housekeeping deficiencies.



Recycling bin at Burnaby Terminal almost at capacity and was noted by the Indigenous Monitor for addressing.



Bird deterrent netting properly rolled up when not in use.

Fraser River Horizontal Directional Drill

Construction activity on the Fraser River horizontal directional drill (HDD) was on hold in July; however, the Indigenous Monitors conducted routine inspections on the entry pad area on the south side of the river at the Colony Farm laydown yard (KP 1167.8). These inspections included observing if the perimeter fencing was maintained, that protective wooden matting previously installed had not been displaced and that equipment being delivered, like holding tanks to be used for silt control during upcoming HDD construction activity, are placed effectively on the protective matting.

The Indigenous Monitors also inspected wildlife deterrents in place around the inactive site.



Holding tanks delivered to site and properly placed on the protective wooden matting.

Indigenous Monitor Request Dashboard

Indigenous Monitors are provided daily on-site field support from Environmental Inspectors and office support from Indigenous Monitor Coordinators. Indigenous Monitors can also make specific support requests or submit questions through their daily report. Examples include but are not limited to: request for Project reports, input from an environmental resource specialist or on-site support from an Elder or other cultural knowledge holder. Monthly requests and their completion status are noted below.

Status	Rolling Total and Type of Requests				
	Project Reports/ Documents	Environmental Resource Specialists	Elder/Cultural Knowledge Holder	Other	Total
Total	1	0	0	0	1
Fulfilled	1	-	-	-	1
Outstanding	0	-	-	-	0

This report has been reviewed by the active Indigenous Monitor(s)

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