

Field Studies Information Sheet – September 2013

Port Metro Vancouver is continuing field studies in September as part of ongoing environmental and technical work for the proposed Roberts Bank Terminal 2 Project.

Roberts Bank Terminal 2 Project

The Roberts Bank Terminal 2 Project is a proposed new three-berth container terminal which would provide 2.4 million TEUs (twenty-foot equivalent unit containers) of additional container capacity. The project is part of the Container Capacity Improvement Program, Port Metro Vancouver's long-term strategy to deliver projects to meet anticipated growth and demand for container capacity until 2030.

No decision has been made to proceed with the proposed Roberts Bank Terminal 2 Project. Port Metro Vancouver is undertaking a comprehensive multi-round, multi-year community, stakeholder and public consultation process regarding the project, which began in June 2011 with Pre-Consultation and continued from October 22 to November 30, 2012, with Project Definition Consultation.

The proposed Roberts Bank Terminal 2 Project will be subject to a thorough and independent environmental assessment.

Field Studies – September 2013

An overview of field studies that will be taking place in September 2013 is below.

Overview
Biofilm Study
Shear Stress Study
Coastal Geomorphology
Continuous Measurement of Discharge Study
Coastal Seabirds
Impacts of Overhead Transmission Wires and Vehicular Traffic on Coastal Seabirds Study
Shorebird Use of Fraser River Estuary during Southward Migration Study
Lighting Impact
Lighting Impact Assessment Study
Marine Invertebrates
Micro Invertebrates Study
Marine Mammals
Marine Mammal Observation Study
Underwater Noise Study
Marine Vegetation
Salt Marsh Productivity Study
Noise and Vibration
Deltaport Source Measurements
Terrestrial Wildlife
Barn Owl Nest/Roost Check Study
Sediment and Water Quality
Sediment Characterization Study
Visual Impact
Visual Impact Assessment Study

Some field studies may require access to public and private land. Port Metro Vancouver will obtain permission before accessing private property. As part of the Adaptive Management Strategy developed as part of the Deltaport Third Berth Project, Port Metro Vancouver will continue studies at Roberts Bank in addition to those outlined in this information sheet.

Port Metro Vancouver will produce monthly field studies information sheets summarizing work to occur each month. These updates will be available at www.portmetrovancover.com/RBT2.

Study Name	Summary
<p>Biofilm – Shear Stress Study</p> <p>(continued from August 2013)</p>	<p><u>Purpose:</u> The purpose of the study is to determine the maximum erosional force that a biofilm sample can withstand.</p> <p><u>Study Area:</u> This study will be conducted on Roberts Bank and at a laboratory.</p> <p><u>Methods:</u> Sediment cores from biofilm habitat will be collected and transported to a laboratory where they will be analysed using a cohesive strength meter.</p> <p><u>Timing:</u> This study will continue in September 2013 and will take place during daylight hours.</p>
<p>Coastal Geomorphology – Continuous Measurement of Discharge Study</p> <p>(continued from August 2013)</p>	<p><u>Purpose:</u> The purpose of the study is to collect data relating to the flow discharge in Canoe Pass.</p> <p><u>Study Area:</u> The study area includes Canoe Pass (the southern-most arm of the Fraser River).</p> <p><u>Methods:</u> Sensors and probes will be installed within the study area. These will be connected to computers to collect and monitor data.</p> <p><u>Timing:</u> This study will continue in September 2013.</p>

Study Name	Summary
<p>Coastal Seabirds – Impacts of Overhead Transmission Wires and Vehicular Traffic on Coastal Seabirds Study</p> <p>(continued from August 2013)</p>	<p><u>Purpose:</u> Bird diverters are special units installed on power lines that help birds see power lines and avoid potentially fatal collisions. The purpose of the study is to calculate the effectiveness of existing bird diverters, while identifying opportunities to further reduce bird collisions with transmission wires and vehicular traffic.</p> <p><u>Study Area:</u> The study area is comprised of the Roberts Bank causeway and the northern side of Westshore Terminals and Deltaport along the transmission wire and road.</p> <p><u>Methods:</u> The study will examine flight patterns, distribution, abundance and behaviour of birds as they cross the Roberts Bank transmission line. Where bird collisions do occur within 20 metres of the transmission wire and road, birds will be collected and studied.</p> <p><u>Timing:</u> Flight surveys will be undertaken every two weeks at each station, raptor surveys will be conducted every week and collision searches will take place every four days. Assessments will occur during daylight hours, weather permitting. This study began in mid-April 2012 and will continue in September 2013.</p>
<p>Coastal Seabirds – Shorebird Use of Fraser River Estuary During Southward Migration Study</p> <p>(continued from August 2013)</p>	<p><u>Purpose:</u> The purpose of this study is to determine the abundance and distribution of shorebirds across the Fraser River Estuary during the southward migratory period.</p> <p><u>Study Area:</u> The study area is comprised of mudflats within three sites of the Fraser River Estuary:</p> <ul style="list-style-type: none"> • Sturgeon Bank • Roberts Bank • Boundary Bay <p><u>Methods:</u> The number and distribution of bird use will be assessed by counting droppings at low tide within 1m² quadrants. Bird count surveys will also be conducted.</p> <p><u>Timing:</u> The study will continue in September 2013 and will take place during daylight hours.</p>

Study Name	Summary
<p>Lighting Impact – Lighting Impact Assessment Study</p>	<p><u>Purpose:</u> The purpose of this study is to assess the visual impact (from selected viewpoints) of potential changes to lighting associated with the proposed Robert Bank Terminal 2 Project.</p> <p><u>Study Area:</u> This study will be conducted from various viewpoints at Roberts Bank and the Lower Mainland.</p> <p><u>Methods:</u> Digital photographs will be taken to build a baseline visual inventory of the existing lighting conditions at Roberts Bank. The baseline visual inventory will then be used to conduct a lighting impact assessment.</p> <p><u>Timing:</u> This study will begin in September 2013 and will take place during daylight and nighttime hours.</p>
<p>Marine Invertebrates – Micro Invertebrates Study</p> <p>(continued from August 2013)</p>	<p><u>Purpose:</u> The purpose of the study is to determine the density and diversity of small marine invertebrates (meiofauna and macrofauna) living in the sediment at Roberts Bank, Sturgeon Bank and Boundary Bay. This study will also look at the role of small marine invertebrates as food for coastal seabirds.</p> <p><u>Study Area:</u> The study area includes:</p> <ul style="list-style-type: none"> • Roberts Bank • Sturgeon Bank • Boundary Bay <p><u>Methods:</u> Invertebrate field samples will be collected from intertidal sampling locations. Samples will be collected using syringes and will be sent to a laboratory for processing and analysis.</p> <p><u>Timing:</u> This study will continue in September 2013 and will take place during daylight low tide intervals.</p>

Study Name	Summary
<p>Marine Mammals – Marine Mammal Observation</p> <p>(continued from August 2013)</p>	<p><u>Purpose:</u> The purpose of this study is to document marine mammal presence and behaviour in the waters around Deltaport.</p> <p><u>Study Area:</u> The study area is the waters in the vicinity of Deltaport at Roberts Bank.</p> <p><u>Methods:</u> Marine mammal observers will be stationed on Deltaport Terminal and will record data on marine mammal sightings and behaviour. A ground-based remote video surveillance system will also be established to observe the proposed project footprint for marine mammals.</p> <p><u>Timing:</u> This study will continue in September 2013 and will take place during daylight hours.</p>
<p>Marine Mammals – Underwater Noise Study</p> <p>(continued from August 2013)</p>	<p><u>Purpose:</u> The purpose of this study is to capture baseline data on ambient underwater noise levels and southern resident killer whale (SRKW) presence at Roberts Bank.</p> <p><u>Study Area:</u> The study area is the waters in the vicinity of Roberts Bank.</p> <p><u>Methods:</u> At Roberts Bank, both ambient noise levels and marine mammal vocalizations will be recorded continuously for one year using a hydrophone cabled to shore.</p> <p><u>Timing:</u> Acoustic recordings at Roberts Bank will continue in September 2013.</p>

Study Name	Summary
<p>Marine Vegetation – Saltmarsh Productivity Study</p> <p>(continued from August 2013)</p>	<p><u>Purpose:</u> The purpose of this study is to determine summer salt marsh productivity (grams of carbon per square metre) of five prevalent salt marsh plant species at Roberts Bank.</p> <p><u>Study Area:</u> The study will be conducted at salt marsh habitat across Roberts Bank, but will focus on Brunswick Point where diverse salt marsh habitat is located.</p> <p><u>Methods:</u> Within randomly placed quadrats, aerial coverage of individual vegetative species will be estimated and the number of stems/shoots of target species will be counted. A number of shoot samples will also be collected for laboratory analysis.</p> <p><u>Timing:</u> This study will continue in September 2013 and will take place during daylight hours.</p>
<p>Noise and Vibration – Deltaport Source Measurements</p> <p>(continued from August 2013)</p>	<p><u>Purpose:</u> The purpose of this study is to measure close-up “source” measurements within Deltaport.</p> <p><u>Study Area:</u> This study will be conducted at Deltaport.</p> <p><u>Methods:</u> Sound and vibration level meters will be used to conduct source noise measurements to document the level of different noise sources.</p> <p><u>Timing:</u> This study will continue in September 2013.</p>

Study Name	Summary
<p>Terrestrial Wildlife – Barn Owl Nest/Roost Check Study</p> <p>(continued from August 2013)</p>	<p><u>Purpose:</u> The purpose of this study is to collect baseline data on the presence of barn owls at nest/roost sites in the upland area.</p> <p><u>Study Area:</u> The study area includes predetermined properties along Roberts Bank rail corridor between the shore end of the Roberts Bank causeway and the east end of Fisher Yard.</p> <p><u>Methods:</u> The barn owl nest/roost checks will be conducted at predetermined locations where barn owl nests/roosts have been identified. At these locations biologists will record:</p> <ul style="list-style-type: none"> • Barn owl presence/absence, • General barn owl behaviour, • Number of barn owls, and • Age of barn owls, if possible. <p><u>Timing:</u> This study will continue in September 2013 and will take place in the hours preceding and following dusk.</p>
<p>Sediment and Water Quality – Sediment Characterization Study</p> <p>(continued from August 2013)</p>	<p><u>Purpose:</u> The purpose of this study is to characterize the physical and chemical features of the sediments that may be dredged or deposited as part of project construction.</p> <p><u>Study Area:</u> This study will be conducted offshore of the Deltaport terminal at Roberts Bank.</p> <p><u>Methods:</u> Fieldwork will include both borehole drilling and surface sediment sampling activities. Sediment will be collected from drill and surface sampling locations using appropriate equipment from a secured barge or small boat.</p> <p><u>Timing:</u> The study will continue in September 2013 and will take place during daylight hours.</p>

Study Name	Summary
<p>Visual Impact – Visual Inventory Study</p> <p>(continued from August 2013)</p>	<p><u>Purpose:</u> The purpose of this study is to gather baseline data to assess the existing aesthetic conditions at Roberts Bank.</p> <p><u>Study Area:</u> This study will be conducted from both shore-based and offshore viewpoints surrounding the Deltaport terminal.</p> <p><u>Methods:</u> Multiple digital photos will be taken of the Deltaport terminal at distances ranging from 1 to 8 kilometres. The data collected will be used to inform desktop studies.</p> <p><u>Timing:</u> This study will continue in September 2013 and will take place during daylight hours.</p>

For Further Information

For further information, please visit our website at www.portmetrovancover.com/RBT2

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