ROBERTS BANK TERMINAL 2 PROJECT

Discussion Guide and Feedback Form
Project Definition Consultation

OCTOBER 22 – NOVEMBER 30, 2012

A part of the
CONTAINER CAPACITY IMPROVEMENT PROGRAM
WHAT IS THE ROBERTS BANK TERMINAL 2 PROJECT?

The Roberts Bank Terminal 2 Project is a proposed new multi-berth container terminal in Delta, B.C. that would provide 2.4 million TEUs (twenty-foot equivalent unit containers) of container capacity.

The project is part of Port Metro Vancouver’s Container Capacity Improvement Program, a long-term strategy to deliver projects to meet anticipated growth in demand for container capacity to 2030.

ENVIRONMENTAL ASSESSMENT

The proposed Roberts Bank Terminal 2 Project will be subject to a thorough and independent environmental assessment. While the scope and nature of the environmental assessment have not yet been determined by federal and provincial regulators, it is anticipated that it would be some form of panel-level review; the most rigorous form of environmental assessment.

HAVE YOUR SAY

From October 22 to November 30, 2012, Port Metro Vancouver is conducting Project Definition Consultation for the Roberts Bank Terminal 2 Project with communities, stakeholders and the public.

You can provide feedback and learn more by:

- Attending a stakeholder meeting or open house
- Providing feedback online: www.portmetrovancouver.com/RBT2
- Writing a submission to: container.improvement@portmetrovancouver.com
- Calling 604.665.9337

PLEASE PROVIDE YOUR FEEDBACK BY NOVEMBER 30, 2012.

HOW INPUT WILL BE USED

Input received during consultation will be considered, along with technical and financial information, in developing project designs or plans, including engineering and environmental mitigation plans.

The input received during this consultation will be summarized in a Consultation Summary Report, which will be made available online at www.portmetrovancouver.com/RBT2. A Consideration Memo will be produced, showing how input was considered in refining project designs or in mitigation and compensation measures.

PROJECT DEFINITION CONSULTATION – MEETING SCHEDULE

<table>
<thead>
<tr>
<th>AREA</th>
<th>EVENT</th>
<th>DATE</th>
<th>TIME</th>
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<tr>
<td>Delta</td>
<td>Stakeholder Meeting</td>
<td>Tuesday, October 23</td>
<td>1:30pm–3:30pm</td>
<td>Coast Tsawwassen Inn 1665 56th Street, Delta</td>
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<tr>
<td>Delta</td>
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<td>Tuesday, October 23</td>
<td>6:00pm–8:00pm</td>
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<tr>
<td>Langley</td>
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<td>Richmond</td>
<td>Open House</td>
<td>Thursday, October 25</td>
<td>6:00pm–9:00pm</td>
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<td>Delta</td>
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<td>Saturday, October 27</td>
<td>10:00am–1:00pm</td>
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<td>Richmond</td>
<td>Stakeholder Meeting</td>
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<td>6:00pm–8:00pm</td>
<td>Hilton Vancouver Airport 5911 Minoru Boulevard, Richmond</td>
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<td>Vancouver</td>
<td>Stakeholder Meeting</td>
<td>Wednesday, October 31</td>
<td>9:00am–11:00am</td>
<td>Morris J. Wosk Centre for Dialogue 580 West Hastings, Vancouver</td>
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To register for a stakeholder meeting, please email container.improvement@portmetrovancouver.com or call 604.665.9337. Please visit www.portmetrovancouver.com/RBT2 for any potential changes to this schedule.
WHAT IS PORT METRO VANCOUVER?

Port Metro Vancouver is Canada’s largest and North America’s most diversified port, trading $75 billion in goods with more than 160 trading economies annually. Our activities generate more than 129,500 jobs across Canada and a total economic output of $22 billion, which includes the value-added gross domestic product (GDP) component of $10.5 billion. Our mandate is to support the growth of Canadian trade.

Bordering on 16 municipalities, one treaty First Nation and intersecting the traditional territories of several First Nations, Port Metro Vancouver works with local government, First Nations, residents and businesses to balance the needs of the shipping and tourism industries, and local communities. We are committed to improving the sustainability of our operations and developments, and being mindful of economic, social and environmental impacts.

WHY IS TRADE IMPORTANT?

Canada is a trading nation, and trade is one of the primary drivers of economic growth in the country. The economic benefits of trade are created not just in the Pacific Gateway itself, but also across the region, province and country. One of the primary benefits of international trade is in the jobs that it creates.

The location and nature of these jobs varies greatly, from logistics to manufacturing to agricultural – but all rely on the movement of goods in and out of the Pacific Gateway. Other benefits to Canadians include increased revenue to government, community amenities, and higher purchasing power.

Because of this, Port Metro Vancouver has been working with all levels of government in planning and developing many initiatives that will accommodate future growth, improve cargo handling and increase the Pacific Gateway’s competitive advantage.

The Container Capacity Improvement Program is Port Metro Vancouver’s long-term strategy to deliver projects to meet anticipated growth in container capacity demand until 2030. As an integral component of the Program, Port Metro Vancouver is continually assessing potential efficiency gains throughout existing Lower Mainland container facilities.

WHAT WE’VE HEARD

Pre-Consultation, held in June 2011, was designed to consult local communities, stakeholders and the public about the design of the consultation program for the Roberts Bank Terminal 2 Project. Specifically, participants were asked how they wanted to be consulted and about the topics they wished to discuss regarding the project.

There were multiple opportunities for stakeholders to participate in Pre-Consultation, held between June 6 and June 30, 2011:

- 73 people attended Pre-Consultation multi-stakeholder meetings
- 55 feedback forms were received; 10 through the online feedback form
- 1 written submission was received

Overall, participants indicated they want to discuss the following topics:

- Socio-economic topics such as road and rail traffic, economic benefits and jobs
- Project design elements such as the terminal layout, marine traffic, roads and rail
- Local and regional area issues such as air quality, safety, greenhouse gases, land use, noise and light
- Infrastructure, port facilities, including the berth, terminal, shore protection, road and rail access

For more information about Pre-Consultation, please see the Pre-Consultation Summary Report, and Consideration of Consultation Input, available at www.portmetrovancouver.com/RBT2.
WHY DO WE NEED MORE CAPACITY FOR CONTAINERIZED TRADE?

Large infrastructure projects like the proposed Roberts Bank Terminal 2 Project require a long lead time, and that is why Port Metro Vancouver is planning now to make sure there is enough capacity to meet future demand for containerized trade.

In 2011, Port Metro Vancouver moved 2.5 million TEUs, and forecasts show that container traffic is expected to double over the next 10 to 15 years, and triple by 2030. The graph below shows container forecasts for Canada's West Coast (Ocean Shipping Consultants, May 2012). The stepped lines show projects, both underway and planned, that would accommodate these increases in demand. Even with recent and current improvements at Port Metro Vancouver’s terminals, and planned investments at the Fairview Terminal in Prince Rupert, current demand forecasts indicate the west coast of Canada will still need more container capacity by the mid-2020s. Based on the current project schedule, and subject to regulatory approvals, the Roberts Bank Terminal 2 Project could be fully operational by 2024. Port Metro Vancouver will continue to monitor economic conditions and container traffic throughout project development.

WEST COAST OF CANADA – FORECAST DEMAND AND PLANNED CAPACITY INCREASES

1 Container ports begin to lose efficiency when they attempt to operate above 85% of their maximum capacity. The dotted purple line on this graph refers to 85% of planned capacity.

WHY CONTAINERS?
Containers are:

- Constructed of steel and designed for repeated use
- Designed to carry goods and to be transferred to one or more modes of transportation (ship, train or truck) without reloading

WHAT IS A TEU?
The capacity of a container terminal and a ship is measured in twenty-foot equivalent container units or TEUs for short.

- A 20-foot container (shown above) is referred to as 1 TEU
- A 40-foot container is referred to as 2 TEUs

WHAT IS SHIPPED IN CONTAINERS?
Examples of goods shipped in containers include:

**EXPORTS** Lumber, pulp, plywood, specialty grain and local agricultural products

**IMPORTS** Electronics, food, household goods, clothing, shoes, health and medical products, construction materials, and manufacturing inputs such as auto parts
CONTAINERIZED TRADE ON THE CANADIAN WEST COAST

Worldwide containerized trade has been increasing in recent decades and the west coast of Canada proves to be no exception.

PORT METRO VANCOUVER

Significant improvements were achieved in 2005 at Vanterm and Centerm – Port Metro Vancouver’s container terminals in Burrard Inlet – resulting in a combined increase of 75% (600,000 TEUs) of container capacity. At Roberts Bank, the Deltaport Third Berth Project, which opened in 2010, resulted in an additional 600,000 TEUs, equivalent to a 50% increase in capacity; and the Deltaport Terminal, Road and Rail Improvement Project, which is scheduled for completion in 2015, will provide a further 600,000 TEUs of container capacity at Roberts Bank.

PORT OF PRINCE RUPERT

Additional container capacity on the Canadian west coast was also provided in 2007 when the Port of Prince Rupert converted its Fairview Terminal from a break bulk terminal to a container terminal that has a current capacity of 750,000 TEUs. Future expansions of the Fairview Terminal are expected to nearly triple the capacity of the terminal to a total of 2 million TEUs.

However, based on forecasts, these improvements at Port Metro Vancouver and the Port of Prince Rupert will still not be enough to meet the additional container capacity that will be required on the west coast in the next 10 to 15 years.
Container terminals require sufficient water depth for deep-sea vessel access and the necessary road and rail connections to efficiently transport containers to and from the market.

Port Metro Vancouver’s Land Use Plan requires that the use of existing terminals is maximized before any new facilities are built. In planning for future capacity within the guidelines of the Land Use Plan, Port Metro Vancouver’s Container Capacity Improvement Program considered the following opportunities for creating container capacity:

- **Increase the capacity and efficiency of existing container terminals.**

  The Inner Harbour terminals (Vanterm and Centerm) were expanded and upgraded in 2005 to increase container capacity. Significant expansion at these terminals is not currently possible in the near term given the complexities related to the rail requirements that would be needed, and given that Port Metro Vancouver has existing lease agreements in place and does not own all of the adjacent land needed to further expand the terminals.

  Deltaport was last expanded in 2010, with the Deltaport Third Berth Project. The Deltaport Terminal, Road and Rail Improvement Project, to be completed by 2015, will increase throughput at the Deltaport Terminal by undertaking improvements in the terminal, increasing the capacity of the intermodal yard and improving the efficiency of the road and rail infrastructure leading to the terminal.

  Fraser Surrey Docks has existing container facilities and land available for expansion; however, the water depth restrictions of the Fraser River – as a result of the George Massey Tunnel and the existing depth of the river on either side of the tunnel – limit access by deep-sea container ships. In addition, larger vessels such as those currently visiting Deltaport cannot be accommodated in the Fraser River due to their length, limiting the ability of the terminal to achieve additional container throughput.

- **Convert existing under-utilized terminals to handle containers.**

  Lynnterm, an existing break bulk cargo terminal in North Vancouver, was considered for conversion to container handling; however, the terminal’s adjacent road network has insufficient capacity to accommodate the number of container trucks required and therefore limits its ability as a container terminal.

  Alternatively, part of the Lynnterm terminal is being considered to help accommodate the growth in the Port’s bulk sector.

- **Build a new terminal.**

  Given the constraints of the previous options, Port Metro Vancouver has been exploring the potential for a new terminal. The proposed Roberts Bank Terminal 2 Project is considered to be the next viable option to provide the necessary container capacity on the west coast of Canada.

Port Metro Vancouver has developed a Land Use Plan to serve as a guidance document for the ongoing development and utilization of Port lands. The land use policies enable Port Metro Vancouver’s customers, stakeholders, municipal neighbours, government agencies and the public to identify and understand the principles by which the Port intends to manage its land and water areas.

The Land Use Plan takes into consideration existing land and water uses, existing properties and their capacities and forecasts of future commodity volumes.

In late 2011, Port Metro Vancouver initiated a two-year process to update its Land Use Plan, involving comprehensive consultation with stakeholders and the community. The new plan will articulate the Port’s policies on land use and development, and will identify the types of uses appropriate on land and water across its jurisdiction.

Port Metro Vancouver’s Land Use Plan indicates that Roberts Bank will be a primary focus for the Port’s container growth strategy, including the development of a new container terminal and associated transportation infrastructure. We do not anticipate that the intent for this area will change as part of the new Land Use Plan.
WHY ROBERTS BANK?

Roberts Bank is an established trade gateway and is well positioned to accommodate future growth in trade activity. It has several competitive advantages, including its proximity to major transportation corridors for both truck and rail movements and one of the most efficient ship-to-rail designs of any port in North America.

Two initiatives are currently underway to improve transportation at Roberts Bank.

South Fraser Perimeter Road:
$1.2 Billion Investment to Reduce Congestion

The Province of B.C.’s South Fraser Perimeter Road (SFPR) is a 40-kilometre-long four-lane route along the south side of the Fraser River from Deltaport Way in southwest Delta to 176th Street (Highway 15) in Surrey, with connections to Highways 1, 15, 17, 91, 99 and the Golden Ears Bridge. SFPR will offer an efficient trade corridor, and will divert truck and other traffic off municipal roads in Delta and Surrey.

When SFPR is completed at the end of 2013, container trucks departing from Deltaport will reroute from Highway 17 and from Highway 10 west of Highway 91 onto the new highway.

The B.C. Ministry of Transportation and Infrastructure began planning the SFPR in the late 1990s, in response to regional population growth and changing employment patterns. Between 2006 and 2008, the project was reviewed under a harmonized environmental assessment process that also accounted for potential port expansion at Roberts Bank.

The South Fraser Perimeter Road alignment is shown on the next page.

Roberts Bank Rail Corridor Program:
$300 Million to Separate Road and Rail Traffic and to Improve Safety

The $300 million Roberts Bank Rail Corridor Program includes one road network improvement project and eight overpasses in Delta, Surrey, the City of Langley and the Township of Langley. These projects are being funded by an unprecedented collaboration of 12 funding partners, including local, regional, provincial and federal governments, as well as private industry. Port Metro Vancouver and its tenants and stakeholders are contributing $50 million.

The overpasses will separate road and rail traffic, improving safety, easing community connections and minimizing train whistling. The overpasses will also improve the efficiency of rail operations and, in turn, the overall efficiency of the port. These projects will be complemented by a Rail Crossing Information System, a system of road signs that would notify drivers travelling on nearby routes of an incoming train, allowing them to reroute to the new overpasses.

All nine projects are underway, and will be complete by 2014.

In addition to the Roberts Bank Rail Corridor projects, a new overpass at 28th Avenue provides an east-west route across Highway 17 for local agricultural traffic and emergency vehicles, replacing an at-grade crossing at 57B Street.

The Roberts Bank Rail Corridor improvements are shown on the next page.

RECENT ANNOUNCEMENT REGARDING THE GEORGE MASSEY TUNNEL

On September 28, 2012, the Premier of B.C. announced plans to engage local governments in initial discussions on a replacement for the George Massey Tunnel.

In addition to supporting continued growth in the Vancouver Gateway, the George Massey Tunnel represents a primary north/south corridor linking the United States and Metro Vancouver. The renewal of the crossing will also support benefits to communities in the Lower Mainland by easing congestion.

Port Metro Vancouver continually seeks ways to mitigate traffic impacts on communities and the proposed replacement of the George Massey Tunnel would contribute significantly towards this objective. Port Metro Vancouver looks forward to participating in the upcoming consultation process and working collaboratively with partners as this project progresses.
THE FOLLOWING PROJECTS ARE PART OF THE ROBERTS BANK RAIL CORRIDOR PROGRAM:

41B STREET
Overpass to separate road and rail movements.

80TH STREET
Overpass to separate road and rail movements.

PANORAMA RIDGE WHISTLE CESSATION
Closure of street-level railway crossings at 125A Street and 131A Street (Colebrook Road), and a private crossing in the vicinity of 139th Street. Colebrook Road will be extended along the north side of the railway from 131A Street to 144th Street; access road upgrades and a new street-level railway crossing of the Burlington Northern Santa Fe Railway will be constructed to provide access to Mud Bay Park; and the street-level crossing protection at 144th Street will be upgraded for whistling cessation.

152ND STREET
Overpass to separate road and rail movements.

192ND STREET
Overpass to separate road and rail movements.

196TH STREET
Overpass to separate road and rail movements.

54TH AVENUE/56TH AVENUE
Overpass to separate road and rail movements.

MUFFORD CRESCENT/64TH AVENUE
Closure of Mufford Crescent and realignment along 62nd/64th Avenues. Includes an overpass to separate road and rail movements.

232ND STREET
Overpass to separate road and rail movements.

This map shows the South Fraser Perimeter Road alignment and Roberts Bank Rail Corridor Program improvements.
SUSTAINABLE DEVELOPMENT IN CANADA’S PACIFIC GATEWAY

Port Metro Vancouver plays a critical role in Canada’s Pacific Gateway. This integrated network of airports, seaports, railways, roads and border crossings connects Canada with major trading partners. Port Metro Vancouver is committed to working together with our partners in building a sustainable future for our communities and businesses.

We are committed to finding ways to integrate new initiatives and programs that promote environmental, social and economic sustainability in all areas of our operations. For instance, Port Metro Vancouver’s Air Action Program works to reduce emissions now to help maintain good air quality for the future. Our EcoAction Program promotes attainable emissions reduction goals for ships that enter our port, and rewards those who excel in environmental stewardship. In 2010, we launched the Blue Circle Award for the EcoAction Program for Shipping, a recognition reserved for only the highest achievements in emissions reduction.

As a port authority, we are committed to raising awareness about port operations and developments, and reaching solutions that support the economic, environmental and social aspirations of our neighbouring communities. To learn more about Port Metro Vancouver’s sustainability initiatives and to read our current Sustainability Report, please visit: www.portmetrovancouver.com/accountability

TRUCK LICENSING SYSTEM

Port Metro Vancouver’s mandatory Truck Licensing System (TLS) is designed to monitor truck movements and manage a reduction in truck emissions. This policy requires that all trucks accessing marine container terminals under the jurisdiction of Port Metro Vancouver have a valid TLS licence.

The Truck Licensing System requires trucks to reduce idling within Port Metro Vancouver terminals to no more than three minutes in any hour, and restricts the age and emissions standards of vehicles that are allowed to enter Port Metro Vancouver terminals. By 2015, all trucks that access Port Metro Vancouver marine terminals will be required to achieve a 2007 engine emission performance or better. This program has resulted in a net improvement to air quality, even though the number of trucks accessing Port Metro Vancouver terminals has increased.

PORT METRO VANCOUVER’S COMMUNITY AND MITIGATION INITIATIVES

Port Metro Vancouver worked in collaboration with the community and stakeholders throughout the construction and first year of operation of the Deltaport Third Berth to identify and address any potential impacts. Some of the collaborative initiatives included:

- Establishing the PORT COMMUNITY LIAISON COMMITTEE following the completion of the Deltaport Third Berth Project, and the success of the Deltaport Third Berth Community Liaison Committee. Port Metro Vancouver established this committee, comprised of up to 15 individuals representing the Corporation of Delta, Tsawwassen First Nation, community organizations, port industry, and Port Metro Vancouver. This committee is an information-sharing forum, which has been organized to discuss developments, identify concerns and provide suggestions, as well as facilitate two-way communication among respective constituencies about port operations and development.

- Establishing the DELTA CONTAINER TRUCK TRAFFIC WORKING GROUP to address port-related container truck issues in the community of Delta. Members include Port Metro Vancouver, TSI Terminal Systems Inc., the B.C. Ministry of Transportation and Infrastructure, the Corporation of Delta, the Delta Police, ICBC and community representatives.

- Implementing IMPROVEMENTS TO HIGHWAY 17 that mitigate the additional truck trips generated by the Deltaport Third Berth, including:
  - Improvements to the Highway 17 northbound off-ramp that leads onto Highway 99 southbound.
  - Extension of the northbound HOV lane on Highway 17 south of Ladner Trunk Road.
  - Signal modifications at the intersection of Highway 17 and Ladner Trunk Road, and road capacity improvements to the left turning lanes from Ladner Trunk Road eastbound onto Highway 17 northbound.
  - Restriction of commercial vehicles to the curb lane, both northbound and southbound, on Highway 17 at Ladner Trunk Road.
The Roberts Bank Terminal 2 Project is a proposed new three-berth container terminal at Roberts Bank in Delta, B.C. that could provide additional capacity of 2.4 million TEUs (twenty-foot equivalent unit containers) per year to meet forecast demand until 2030. A concept for the project has been developed for consultation with communities, the Province of B.C., the British Columbia Railway Company (BC Rail), local governments, user railways, industry, regulators and First Nations.

Subject to environmental and regulatory approvals, the project could be fully operational by 2024. The project is made up of three major components, which are described in further detail over the next few pages:

1. **MARINE TERMINAL**
2. **ROAD AND RAIL INFRASTRUCTURE ON THE ROBERTS BANK CAUSEWAY**
3. **UPLAND ROAD AND RAIL INFRASTRUCTURE**

If constructed, the Roberts Bank Terminal 2 Project would drive economic growth and increase employment, benefiting the region, the province and the country. The economic benefits to Canada from the proposed project would include direct, indirect, and induced employment growth, and gains in economic output, gross domestic product (GDP) and government revenues during construction and operations.

During the construction period, anticipated to be approximately six years, the project would generate the following benefits:

- **Direct Construction Employment**: Estimated 2,500 jobs for six years, worth approximately $690 million in wages
- **Indirect and Induced Employment**: Estimated 2,000 jobs for six years, worth approximately $450 million in wages
- **Total Direct, Indirect and Induced Employment**: Estimated 4,500 jobs for six years, worth approximately $1.14 billion in wages
- **Gross Domestic Product**: Approximately $1.63 billion to the Canadian economy
- **Total Economic Output**: Approximately $4.1 billion

Once operating at capacity, the project would provide the following benefits:

- **Direct Employment**: Estimated 9,200 jobs, worth approximately $440 million in wages annually
- **Indirect and Induced Employment**: Estimated 9,000 jobs, worth approximately $180 million in wages annually
- **Total Direct, Indirect and Induced Employment**: 18,200 jobs, worth approximately $620 million in wages annually
- **Gross Domestic Product**: Approximately $1.66 billion to the Canadian Economy annually
- **Total Economic Output**: Approximately $3.1 billion annually

Economic information will be updated as the project proceeds through design and development.
An artist's rendering of the proposed Roberts Bank Terminal 2 Project
1. MARINE TERMINAL

TERMINAL ORIENTATION AND LOCATION

The proposed marine terminal would be located west of the existing Roberts Bank terminal facilities, approximately 5.5 kilometres offshore from the mainland. The terminal is proposed to be oriented parallel to the shoreline (perpendicular to the causeway) and would extend approximately 600 metres farther offshore than the edge of the existing terminal fill at Roberts Bank. The new terminal would be rectangular in shape with a berth length of 1,300 metres, an overall terminal length of 1,550 metres and a terminal width of up to 700 metres.

The terminal would be located as far offshore as practical to reduce the impact on sensitive marine habitat and limit the amount of dredging required, while meeting geotechnical and seismic performance criteria.

LAND CREATION (DREDGING AND FILLING)

The land for the new terminal would be created primarily using a combination of fill material from dredging the future berth pocket area and from the annual Fraser River maintenance dredging program. Site dredging at Roberts Bank would be limited to creating necessary depths for container ships to safely navigate and dock at the terminal, and for seismic ground improvements beneath the berth structure.

The total amount of terminal land created would be approximately 115 hectares and would require an estimated 15 million cubic metres of fill to create.

Rock dykes would be built initially to form the perimeter of the terminal footprint and would contain the general fill material placed inside the dykes. A layer of compacted sand would be placed on top of the site dredged material and would be overlaid with pavement to provide the finished terminal surface.

The elevation of the terminal would be designed to accommodate both future rise in sea levels and long-term ground settlements while reducing the chances of waves overtopping the terminal during storm events.

TRADE-OFF STUDY FOR TERMINAL ORIENTATION

Following discussions with the Department of Fisheries and Oceans Canada and a review of environmental work and studies previously completed in and around Roberts Bank, potential sites for a new terminal were limited to those immediately west of the existing Roberts Bank facilities.

The two options, W1, which would face offshore and W2, which would be perpendicular to the shoreline were selected as the most viable options. For each orientation, studies examined advantages and disadvantages of situating the terminal in a range of positions, from those as far offshore as possible to those as close to the shore as possible.

Both environmental and engineering considerations indicated a clear preference for the offshore-facing W1 alternative in the farthest offshore position. This alternative offers the least impact on productive and sensitive environmental habitats and terminal operations would be less susceptible to storm events.

EXISTING ROBERTS BANK TERMINALS AND OPTIONS FOR TERMINAL 2 ORIENTATION

W1: 0 m Setback

W2: 0 m Setback
1. MARINE TERMINAL

1.1. BERTH STRUCTURE

The terminal design was based on an analysis of the world’s current fleet of container ships and future trends in container shipping. An approximately 1,300-metre-long berth structure would be designed to safely accommodate the simultaneous mooring of three vessels, two of which would meet 2014 post-Panamax criteria with lengths up to 370 metres and a capacity of 12,000 TEUs, and one ultra-large container ship, up to 400 metres long with a capacity of 18,000 TEUs. For comparison purposes, Deltaport Third Berth (430 metres long) was designed to accommodate vessels with a maximum capacity of 12,000 TEUs.

Concrete caissons were identified as the preferred option for creating a berth structure capable of handling ships of this size. Caissons are prefabricated concrete boxes made up of hollow cells that would be used to form the berth face where container ships would dock. Each concrete caisson would be approximately 40 metres long, 20 metres wide and 30 metres high. The caissons would be fabricated off-site, transported to site by water and floated into position. They would then be sunk into place and the hollow internal cells of the caissons would be partially filled with rock to provide enough ballast to resist movement and impact when ships dock.

Consultation Topic 1 | Please see page 23 in the feedback form to answer a question regarding the type of berth structure.

Two options were considered to create the berth structure for the new terminal:

- Reinforced concrete caissons (preferred option). The caissons would be filled with crushed rock, providing enough weight to resist impact. The use of caissons would require extensive work to improve the capacity of the underlying soil and replace poor quality soil with crushed rock. These ground works would be required to achieve seismic criteria and resist high bearing pressures due to the weight of the caissons, container storage and terminal operating equipment.

- Pile and deck. This type of berth would require approximately 1,500 steel piles to be driven into the ground to depths of up to 70 metres below the seabed. The steel piles would be approximately 1.2 metres in diameter and up to 80 metres long and would support a reinforced concrete deck. Significant ground improvements would also be required with this option to achieve seismic criteria.

Following an analysis of the two options, the caisson system for the berth structure was selected as the preferred option. The use of caissons would significantly reduce the amount of noise for the community and marine environment, which would be associated with driving piles. For the Roberts Bank site, caissons are considered to be more robust and require less maintenance than piles, they are considered to perform better during significant seismic events, and are expected to be a lower cost option.
1. MARINE TERMINAL

TERMINAL LAYOUT

The rectangular terminal shape shown in this discussion guide was selected for its flexibility, which could accommodate various terminal operating systems. To establish the preliminary size and design of the terminal, various levels of terminal automation were considered. An assumption of semi-automation (combination of manual and automated equipment within the terminal) was used to establish the preliminary layout shown in this discussion guide. The final terminal operating systems would be determined by the future terminal operator’s technical and operational requirements.

TERMINAL COMPONENTS AND EQUIPMENT

Components and equipment for the Roberts Bank Terminal 2 Project would include the following:

- A container storage yard
- An intermodal yard (where containers are moved to and from trains)
- Equipment required to operate a container terminal, including:
  - Ship-to-shore gantry cranes
  - Stacking cranes (rail-mounted or rubber-tired)
  - Rail yard rail-mounted gantry cranes
  - Transfer equipment (such as shuttle carriers, automated guided vehicles and/or tractor trailers)
- A truck gate complex to control truck entry and exit
- Administrative buildings and employee parking areas
- Equipment maintenance workshops and facilities
- Causeway widening and improvements to road and rail infrastructure along the Roberts Bank causeway
- Improvements to road and rail infrastructure leading to and from the Roberts Bank causeway
- Improvements to the Roberts Bank tug basin
1. MARINE TERMINAL

TRADE-OFF REGARDING LOCATION OF INTERMODAL YARD

A key component of the project is the intermodal yard, which is where containers are loaded or unloaded from trains. Based on the current design of the Roberts Bank Terminal 2 Project and consistent with all existing container terminals in Port Metro Vancouver, the intermodal yard is proposed to be located on the terminal itself, in the marine environment. Other than locating the intermodal yard on the terminal, there are only two other potential locations: on a widened Roberts Bank causeway, also in the marine environment, or upland of the causeway.

No decision has been made regarding the final project layout, including the location of the intermodal yard. Port Metro Vancouver will continue to work with the Province of B.C. and the British Columbia Railway Company (BCRC) to further develop the alternatives where project works would take place on Provincially- and BCRC-owned land, and will engage in discussions with potential terminal operators, railways and other terminal users. Port Metro Vancouver would also like your input regarding this trade-off, as some potential layouts require more land filling and construction in the marine environment, while other layouts require more development on existing uplands adjacent to the existing rail corridor. Each of these alternatives would have implications for both marine and upland environments.

**Alternative 1A**: Constructing the intermodal yard in the marine environment on the new terminal.

**Alternative 1B**: Constructing the intermodal yard in the marine environment on an expanded Roberts Bank causeway.

**Alternative 2**: Constructing the intermodal yard in the upland environment.

Building the intermodal yard in the marine environment (Alternatives 1A and 1B) will have the following considerations:

<table>
<thead>
<tr>
<th>ADVANTAGES</th>
<th>POTENTIAL EFFECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Operational efficiencies for the trucking sector</td>
<td>- Marine mammals and their habitats</td>
</tr>
<tr>
<td>- Proven operating model based on other Port Metro Vancouver container terminals</td>
<td>- Marine fish and their habitats</td>
</tr>
<tr>
<td>- Less impact on agricultural land and productivity</td>
<td>- Marine vegetation and biofilm</td>
</tr>
<tr>
<td>- Living near coastline</td>
<td>- Coastal seabirds and waterfowl (including migratory birds)</td>
</tr>
</tbody>
</table>

Building the intermodal yard in the upland environment (Alternative 2) will have the following considerations:

<table>
<thead>
<tr>
<th>ADVANTAGES</th>
<th>POTENTIAL EFFECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Operational efficiencies for the railway sector</td>
<td>- Agricultural land and productivity</td>
</tr>
<tr>
<td>- Smaller overall project footprint</td>
<td>- Terrestrial (land-based) wildlife and habitat</td>
</tr>
<tr>
<td>- Less impact on the marine environment</td>
<td>- Terrestrial (land-based) vegetation</td>
</tr>
<tr>
<td>- Living near coastline</td>
<td>- Coastal seabirds and waterfowl (including migratory birds)</td>
</tr>
</tbody>
</table>

Regardless of which alternative is selected, mitigation plans for potential effects would be developed and reviewed through the Environmental Assessment process. Opportunities for public comment would be available through the Environmental Assessment.
2. ROAD AND RAIL INFRASTRUCTURE ON THE ROBERTS BANK CAUSEWAY

CAUSEWAY WIDENING

Port Metro Vancouver’s current concept assumes an on-terminal intermodal yard (Alternative 1A). To accommodate the road and rail infrastructure needed for the proposed Terminal 2 Project, the causeway leading to the existing facilities at Roberts Bank would need to be widened to the northwest. To reduce potential impacts on sensitive marine habitat on the northwest side, the causeway would be widened to different widths along its length.

RAIL IMPROVEMENTS ON THE ROBERTS BANK CAUSEWAY

To support an on-terminal intermodal yard, rail improvements along the causeway could include the following:

- Addition of two lead rail tracks
- Addition of seven support and switching rail tracks in a new Terminal 2 yard
- Addition of a new Terminal 2 repair yard
- Localized realignment of existing coal tracks adjacent to Roberts Bank Way (north) to accommodate the proposed Terminal 2 overpass and road access

ROAD IMPROVEMENTS ON THE CAUSEWAY

The existing road on the causeway, Roberts Bank Way, would continue to allow traffic to enter and exit both Westshore Terminals and Deltaport, and would also connect via a new overpass to a new three-lane access road to Terminal 2. Proposed road improvements could include:

- Overpass Structure: A new overpass would separate Terminal 2 road traffic and Westshore coal rail traffic on the causeway. The overpass could be built on the north side of the existing causeway near its western limit, and would extend onto the widened causeway.
- Terminal 2 Access Road: The access road to Terminal 2, north of the new overpass structure, would have two westbound lanes and one eastbound lane connecting Terminal 2 to the existing Roberts Bank Way (north).
- Vehicle Access and Control System: A vehicle access and control system would be used to regulate access to Terminal 2 to prevent unregistered container trucks from entering the terminal.
- Emergency Access Road: To allow for continued access to the Roberts Bank terminals in the unlikely event the main causeway road is blocked, an emergency access road has been incorporated on the full length of the north side of the widened causeway. The eight-metre-wide emergency access road would allow for two-way traffic on a gravel surface.

BC HYDRO TRANSMISSION LINE IMPROVEMENTS

Currently, electricity is supplied to Roberts Bank using an overhead transmission line originating from BC Hydro’s Arnott substation located on Ladner Trunk Road at 64th Street.

Upgrades to BC Hydro infrastructure would be required for the existing circuits feeding the Roberts Bank terminals, given the additional power demand for the proposed Roberts Bank Terminal 2 Project. Port Metro Vancouver is working with BC Hydro to determine the extent of the upgrades.

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5 Any proposed road and rail improvements that would not take place on Port Metro Vancouver-owned land would need to take place on Provincially- and/or BCRC-owned land, and as such, would be subject to consultation and agreement with the Ministry of Transportation and Infrastructure and/or BCRC, respectively.
3. UPLAND ROAD AND RAIL INFRASTRUCTURE

UPLAND RAIL IMPROVEMENTS

Rail improvements would be required on the mainland likely within the existing railway right-of-way and Option Lands. Improvements could include:

- Addition of one new rail siding track in Fisher Yard
- Addition of six new rail tracks in Gulf Yard
- Addition of a new turning wye near Arthur Drive to facilitate locomotive turning

ROAD IMPROVEMENTS ON DELTAPORT WAY

The existing two-lane Deltaport Way, which leads to the Roberts Bank causeway, would be widened to four lanes from east of Arthur Drive to west of 41B Street.

As part of the road improvements, the intersections at 41B Street and Arthur Drive would need to be redesigned to efficiently direct port, Tsawwassen First Nation and municipal traffic.

Road works would be expected to take place within the existing B.C. Ministry of Transportation and Infrastructure right-of-way.

HABITAT REPLACEMENT

Depending on final project designs, the proposed Roberts Bank Terminal 2 Project could impact approximately 210 hectares of fish and wildlife habitat at Roberts Bank, as a result of the new marine terminal, causeway widening, tug basin improvements and associated dredging required for the project. This habitat would be replaced with enhancement or restoration of existing habitat near Roberts Bank, or the creation of new habitat such as intertidal marshes and submerged reefs.

Port Metro Vancouver has established a Habitat Banking Program focusing on creating and improving fish and wildlife habitat in advance of port development projects, such as the proposed Roberts Bank Terminal 2 Project.

PORT METRO VANCOUVER’S HABITAT BANKING PROGRAM

Port Metro Vancouver’s Habitat Banking Program focuses on creating and improving fish and wildlife habitat in advance of port development projects.

Replacing habitat that may be affected by development projects is a proactive measure intended to provide a balance between the overall health of the environment and ecosystem, and current or future development. Creating habitat ahead of development projects allows for the success of that habitat site to be verified prior to it being credited as offsets for habitat loss.

Before: April 2007. Log debris covering what used to be a salt marsh. (photo Gary Williams)

After: August 2010. A salt marsh is restored. (photo Gary Williams)

For more information: www.portmetrovancouver.com/en/environment/initiatives.aspx
ROAD AND RAIL TRAFFIC CONSIDERATIONS

Road traffic modelling was undertaken in 2011 and 2012 to assess the impact of current and future port-related traffic on the local and regional road networks serving Roberts Bank.

Operating at 2.4 million TEUs, the proposed Roberts Bank Terminal 2 would result in approximately 3,700 total daily truck trips (1,850 trips in and 1,850 trips out) to and from the terminal. Rail projections show that the proposed Roberts Bank Terminal 2 Project would generate between eight to ten container trains per day (four to five trains in and four to five trains out).

Port Metro Vancouver continues to work with the trucking sector to find efficiencies and improvements that benefit not only the terminals, but also the communities in which the Port operates. These improvements could potentially reduce the number of truck trips.

Port Metro Vancouver will be developing a Transportation Plan for the proposed Roberts Bank Terminal 2 Project, which will include traffic counts and an analysis of traffic distribution across the various routes leading to and from the Roberts Bank port facilities. Port Metro Vancouver intends to work with the Ministry of Transportation and Infrastructure to ensure port-related traffic modelling supports or augments Provincial planning.

As part of the Environmental Assessment process, Port Metro Vancouver will assess the impacts of the project on road and rail traffic and will develop mitigation strategies, as necessary, to address any potential impacts.

REDUCING TRUCK CONGESTION

As previously mentioned, the South Fraser Perimeter Road Project and the Roberts Bank Rail Corridor Program are being built, in part, to accommodate and mitigate increases in road and rail traffic from future port developments.

The SFPR, scheduled for completion in 2013, will reroute container trucks leaving Roberts Bank. This will improve traffic flow, community connections, and quality of life for residents and local businesses by restricting container trucks from Highway 17 north of Deltaport Way, and from Highway 10 west of Highway 91.

Recognizing the importance of reducing container truck traffic in local communities and on local roads, Port Metro Vancouver continues to explore the following truck congestion reduction measures:

1. **Diversifying truck trip schedules**: Truck trips in peak periods could be reduced by spreading truck trips across more hours of the day. Port Metro Vancouver is exploring incentives that may encourage truck drivers and companies to shift pickup and deliveries to off-peak delivery times, reducing congestion and truck-related air emissions.

2. **Minimizing empty truck trips**: Working with trucking associations and companies, Port Metro Vancouver will explore the implementation of a dispatch system to reduce the number of empty trips (trips to or from the terminal with no container). This would reduce the overall number and duration of truck trips, leading to reduced congestion and truck emissions.

3. **Truck notification and tracking system**: Port Metro Vancouver recently undertook a GPS pilot study involving 300 trucks and is currently working with partners to expand GPS to an additional 700 container trucks that serve its facilities. Port Metro Vancouver will work with trucking associations and companies to utilize GPS or other tracking technology to identify, locate and contact all port-related container trucks on a real-time basis. Using this technology, fleet operators would be able to anticipate travelling conditions for individual vehicles, creating better arrival and departure strategies that could reduce truck congestion, which would lead to a reduction in idling and truck emissions.

4. **Providing designated truck waiting areas**: Port Metro Vancouver will explore sites in the vicinity of Roberts Bank that could provide a designated waiting area for container trucks, leading to reduced congestion and idling.

*Please see page 8 for a map of the South Fraser Perimeter Road alignment and the Roberts Bank Rail Corridor Program improvements.*
Efficient operations are vital to continued success at Canada’s largest gateway. Port Metro Vancouver businesses move more than $200 million of cargo every day and the container drayage truck sector is responsible for moving approximately 50% of the Port’s container cargo across its facilities. The trucking sector represents an important part of the local economy; however, Port Metro Vancouver is aware that increases in truck traffic at Roberts Bank have been identified as a significant community concern. As we prepare for forecasted growth in the container sector, Port Metro Vancouver must ensure that plans are underway now to maximize efficiencies for port operations while addressing community concerns about impacts from port-related truck traffic.

Port Metro Vancouver is currently working together with supply chain partners to improve reliability and efficiency in the container trucking sector, which will also benefit communities as greater efficiencies at the terminals will reduce idling and congestion on major roadways. Port Metro Vancouver is committed to change in support of improvements that benefit communities, port operations and the trucking sector.

To reduce port-related traffic congestion and ease the impact on local communities, Port Metro Vancouver has developed its 2012 Trucking Strategy that aims to work with supply chain partners to advance trucking initiatives that are collaborative, lead to greater reciprocal accountability and support the long-term sustainability of the trucking sector.

Over the next three years, the 2012 Trucking Strategy initiatives will focus on improving collaboration with industry, stakeholders and communities; maximizing operations through efficiencies that minimize the number of truck trips required; and improvements to the safety and environmental standards set out for the container trucking industry through the Port’s Truck Licensing System.

Upland rail improvements for the proposed Roberts Bank Terminal 2 Project would likely occur mostly within the existing railway right-of-way and the Option Lands\(^5\). Based on preliminary estimates, rail works for the project could affect approximately 10 hectares of agricultural land.

Port Metro Vancouver will be consulting with affected farmers, the Agricultural Land Commission and other key stakeholders regarding mitigation and compensation for the loss of agricultural productivity. Port Metro Vancouver is also interested in your feedback on potential mitigation and compensation for the use of agricultural land. Potential measures could include:

- A topsoil conservation program to improve field conditions, configurations and drainage of adjacent properties
- Improvements to existing agricultural land through supporting investments in infrastructure such as irrigation and drainage
- Agricultural capacity development, including supporting agricultural education for the next generation of farmers through bursaries or research funding

\(^5\) The Province of B.C.’s Option Lands are a 60-metre-wide strip of land from Arthur Drive west to the neck of the Roberts Bank causeway and are within the Agricultural Land Reserve. In 2008, the Agricultural Land Commission approved the acquisition of the Option Lands to create a new rail right-of-way.

\(^6\) Any proposed road and rail improvements that would not take place on Port Metro Vancouver-owned land would need to take place on Provincially- and/or BCRC-owned land, and as such, would be subject to consultation and agreement with the Ministry of Transportation and Infrastructure and/or BCRC, respectively.
ENVIRONMENTAL ASSESSMENT PROCESS

The proposed Roberts Bank Terminal 2 Project will be subject to a thorough and independent environmental assessment under the following federal and provincial acts:

- Canadian Environmental Assessment Act (CEAA 2012)
- British Columbia Environmental Assessment Act

While the scope and nature of the environmental assessment have not yet been determined by federal and provincial regulators, it is anticipated that it would be some form of panel-level review, which is the most rigorous form of environmental assessment. This harmonized approach incorporates the requirements of both federal and provincial processes, while respecting the individual decision-making and obligations of each jurisdiction.

ENVIRONMENTAL ASSESSMENT PROCESS

<table>
<thead>
<tr>
<th>Pre-Environmental Assessment Phase</th>
<th>Pre-Panel Review</th>
<th>Joint Review Panel Referral</th>
<th>Information Assessment</th>
<th>Reporting and Environmental Assessment Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continue baseline studies to establish current conditions</td>
<td>Submission of Project Description</td>
<td>Panel appointment</td>
<td>Final report to Ministers of the Environment</td>
<td>Final report to Ministers of the Environment</td>
</tr>
<tr>
<td>Develop Project Description</td>
<td>Conduct effects assessments</td>
<td>Panel terms of reference established</td>
<td>Panel submits report to federal minister and BC Environmental Assessment Office</td>
<td>Ministerial decision</td>
</tr>
<tr>
<td></td>
<td>Develop Environmental Impact Statement (EIS) Guidelines</td>
<td>EIS reviewed against EIS Guidelines</td>
<td>Panel prepares final report</td>
<td></td>
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<tr>
<td></td>
<td>Develop EIS with draft mitigation plans</td>
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<td></td>
<td>Regulation-led public comment periods</td>
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</tbody>
</table>

Notes: 1. Timing is preliminary and subject to change pending definition of the environmental assessment process by provincial and federal regulators.
2. Port Metro Vancouver-led consultation with communities, stakeholders and the public, and Port Metro Vancouver-led consultation with First Nations will continue throughout project development. For more information about Port Metro Vancouver-led consultation activities, including anticipated timing, please see page 22.

CATEGORIES FOR ENVIRONMENTAL STUDY

Port Metro Vancouver has developed a list of categories for environmental study for the proposed Roberts Bank Terminal 2 Project. These categories were identified through environmental assessments and community consultation on past projects at Roberts Bank, including the Deltaport Third Berth Project and the Deltaport Terminal, Road and Rail Improvement Project.

The categories for environmental study for the proposed Roberts Bank Terminal 2 Project include, but are not limited to, the following:

- Agriculture
- Air Quality
- Archaeology
- Biofilm (a nutrient-rich film found in the intertidal zone)
- Coastal Geomorphology (coastal formations and features)
- Coastal Seabirds and Waterfowl
- Lighting
- Marine Fish
- Marine Invertebrates
- Marine Mammals
- Marine Vegetation
- Noise
- Socio-Community and Socio-Economic
- Terrestrial Wildlife/Vegetation (land-based animals and plants)
- Traditional Use
- Visual
- Water and Sediment Quality
CATEGORIES FOR ENVIRONMENTAL STUDY

BASELINE FIELD STUDIES

As part of ongoing environmental and technical work for the proposed Roberts Bank Terminal 2 Project, Port Metro Vancouver has been and continues to undertake field studies at Roberts Bank and the surrounding areas. The studies are part of the early planning phase focused on collecting baseline inventory information to develop an understanding of current conditions in all of the study areas.

Should the Roberts Bank Terminal 2 Project proceed to an independent environmental assessment, the results of these baseline studies would serve as preparatory information for impact assessments. Once potential impacts have been identified as part of the impact assessments, Port Metro Vancouver will develop and evaluate options for mitigation.

If the project proceeds to an environmental assessment, it is anticipated that regulatory agencies, CEA Agency and BC Environmental Assessment Office would provide several opportunities for the public to comment as part of the environmental assessment process.

For more information about field studies at Roberts Bank, please visit: www.portmetrovancouver.com/RBT2

BASELINE STUDIES UNDERWAY OR BEING CONSIDERED INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:

Agriculture
- Agricultural Assessment

Air Quality
- Baseline Air Quality
- Analysis and Effects Assessment

Archaeology
- Archaeological Impact Assessment

Biofilm (a nutrient-rich film found in the intertidal zone)
- Distribution and Mapping
- Taxonomy

Coastal Geomorphology (coastal formations/features)
- Measurement of Discharge
- Bathymetry (ocean floor)
- Erosion and Deposition
- Wave Height

Coastal Seabirds and Waterfowl
- General Abundance and Distribution
- Shorebird Use of Fraser River Estuary
- Western Sandpiper
- Coastal Seabird Habitat
- Impact of Overhead Transmission Wires

Lighting
- Lighting Assessment

Marine Fish
- Marine Fish Habitat
- Flatfish and Forage Fish
- Juvenile Salmon
- Lingcod

Marine Invertebrates
- Dungeness Crab
- Sea Pen
- Small Invertebrates
- Creel

Marine Mammals
- Underwater Noise
- Southern Resident Killer Whale Behaviour
- Marine Vessel Sound Propagation
- Vessel Strike Analysis

Marine Vegetation
- Eelgrass
- Salt Marsh
- Ulva (sea lettuce)

Noise
- Baseline Noise Monitoring
- Noise Source Measurements

Socio-Community and Socio-Economic
- Employment and Income
- Community Services

Terrestrial Wildlife/Vegetation (land-based animals and plants)
- Rare Plants
- Barn Owls
- Terrestrial Invertebrates
- Small Mammals Habitat
- Breeding Birds
- Raptors
- Wintering Waterfowl
- Amphibians

Traditional Use

Visual
- Surveys of Existing Viewscapes

Water and Sediment Quality
- Water and Sediment Quality
COMMUNITY LEGACY BENEFITS

Port Metro Vancouver is initiating discussions with local and regional government regarding community legacy benefits that could be provided as part of the Container Capacity Improvement Program.

These community legacy benefits will be over and above the economic benefits that would result from the projects, and mitigation measures that would be required through the environmental assessment process.

As discussions begin with local and regional government regarding community legacy benefits, Port Metro Vancouver is also interested in feedback from communities, stakeholders and the public regarding the types of community legacy benefits that should be considered.

Examples of community legacy benefit categories could include:

- Arts
- Community well-being
- Environment
- Transportation

CONSULTATION TIMING

In addition to opportunities for public input that will be provided through the environmental assessment process, Port Metro Vancouver will lead several rounds of consultation regarding the proposed Roberts Bank Terminal 2 Project. The timeline below outlines previously completed and upcoming rounds of consultation, including the feedback we will be seeking in each round.

**Project Definition Consultation**
(October 22 to November 30, 2012)
Identify potential issues and impacts for the environmental assessment, and consultation on features of the proposed Terminal 2 Project.

**Pre-Consultation**
(June 2011)
Provide opportunities for local communities, stakeholders and public to provide input into the design of the consultation program.

**Pre-Design Consultation**
(2013 TBC)
Identify potential issues and impacts for the environmental assessment, and consultation on elements of project design for consideration in developing a preliminary design.

**Preliminary Design Consultation**
(2014 TBC)
Consultation on elements of preliminary project design.

**Detailed Design Consultation**
(2016 TBC)
Consultation on fewer but more specific details of project design and construction management as project design is finalized.

Other communications and community engagement activities will be undertaken throughout project review.

**FIRST NATIONS CONSULTATION**

A separate but parallel First Nations consultation process is being undertaken by Port Metro Vancouver in relation to the proposed Roberts Bank Terminal 2 Project. First Nations consultation during the Project Definition phase will focus on exchanging project-related information with First Nations and developing a better understanding of the potential for impacts on their communities, rights and interests.
FEEDBACK FORM – PLEASE PROVIDE YOUR FEEDBACK BY NOVEMBER 30, 2012.

1. TYPE OF BERTH STRUCTURE

Port Metro Vancouver looked at two potential methods of constructing the berth structure for the proposed Roberts Bank Terminal 2 Project – the use of caissons (large concrete boxes) or pile and deck (which requires pile-driving).

Following an analysis of the two options, the use of caissons was selected as the preferred option. The use of caissons significantly reduces the amount of noise for the community and marine environment associated with driving piles. For the Roberts Bank site, caissons are considered to be more robust and require less maintenance than piles, they are considered to perform better during significant seismic events, and are expected to be a lower cost option.

1a. Please rate your level of agreement with the use of caissons for the construction of the berth structure for the proposed Roberts Bank Terminal 2 Project:

- [ ] Strongly Agree
- [ ] Somewhat Agree
- [ ] Neither Agree nor Disagree
- [ ] Somewhat Disagree
- [ ] Strongly Disagree

1b. Please provide any additional comments for project team consideration regarding the type of berth structure:

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

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__________________________________________________________________________

2. LOCATION OF INTERMODAL YARD – MARINE VS. UPLAND CONSTRUCTION

A key component of the project is an intermodal yard, where containers are loaded or unloaded from trains. Based on the current design of the Roberts Bank Terminal 2 Project and consistent with all existing Port Metro Vancouver container terminals, the intermodal yard is proposed to be located on the terminal itself, in the marine environment. Other than locating the intermodal yard on the terminal, there are only two other potential locations: on a widened Roberts Bank causeway, also in the marine environment, or upland of the causeway.

No decision has been made regarding the final terminal layout. Some potential terminal layouts require land filling and construction in the marine environment, while other designs are focused on building terminal components upland within and adjacent to the existing rail corridor. Each of these alternatives would have implications for marine and upland environments.

**Alternative 1A:** Constructing the intermodal yard in the marine environment on the new terminal.

**Alternative 1B:** Constructing the intermodal yard in the marine environment on an expanded Roberts Bank causeway.

**Alternative 2:** Constructing the intermodal yard in the upland environment.

See the map on page 15 for location reference.

Building the intermodal yard in the marine environment (Alternatives 1A and 1B) will have the following considerations:

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<td>• Marine vegetation and biofilm</td>
</tr>
<tr>
<td></td>
<td>• Coastal seabirds and waterfowl (including migratory birds)</td>
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</tbody>
</table>

Building the intermodal yard in the upland environment (Alternative 2) will have the following considerations:

<table>
<thead>
<tr>
<th>ADVANTAGES</th>
<th>POTENTIAL EFFECTS</th>
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<tbody>
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<tr>
<td></td>
<td>• Coastal seabirds and waterfowl (including migratory birds)</td>
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</table>
Each of the previous alternatives would include mitigation plans for potential effects. The mitigation plans would be reviewed through the Environmental Assessment process, which would include additional opportunities for public comment.

Port Metro Vancouver would like input from you regarding this trade-off.

2a. Please rate your level of agreement with Alternative 1A: Constructing the intermodal yard in the marine environment on the new terminal:

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Somewhat Agree</th>
<th>Neither Agree nor Disagree</th>
<th>Somewhat Disagree</th>
<th>Strongly Disagree</th>
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2b. Please provide reasons for your level of agreement:

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2c. Please rate your level of agreement with Alternative 1B: Constructing the intermodal yard in the marine environment on an expanded Roberts Bank causeway:

2d. Please provide reasons for your level of agreement:

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2e. Please rate your level of agreement with Alternative 2: Constructing the intermodal yard in the upland environment:

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<thead>
<tr>
<th>Strongly Agree</th>
<th>Somewhat Agree</th>
<th>Neither Agree nor Disagree</th>
<th>Somewhat Disagree</th>
<th>Strongly Disagree</th>
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2f. Please provide reasons for your level of agreement:

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AGRICULTURE

Upland rail improvements for the proposed Roberts Bank Terminal 2 Project would likely occur mostly within the existing railway right-of-way and the Option Lands. Based on preliminary estimates, rail works for the project could affect approximately 10 hectares of agricultural land.

3. MITIGATION FOR LOSS OF AGRICULTURAL PRODUCTIVITY

Port Metro Vancouver is considering a number of potential mitigation and compensation measures to account for loss of agricultural productivity.

3a. Please rate your level of agreement with Port Metro Vancouver pursuing each of the following mitigation and compensation measures for loss of agricultural productivity as part of the proposed Roberts Bank Terminal 2 Project:

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Somewhat Agree</th>
<th>Neither Agree nor Disagree</th>
<th>Somewhat Disagree</th>
<th>Strongly Disagree</th>
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A topsoil conservation program to improve field conditions, configurations and drainage of adjacent properties.

Interests or Considerations:

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Improvements to existing agricultural land through supporting investments in infrastructure such as irrigation and drainage.

Interests or Considerations:

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Agricultural capacity development, including supporting agricultural education for the next generation of farmers through bursaries or research funding.

Interests or Considerations:

__________________________________________________________________________
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7 The Province of B.C.’s Option Lands are a 60-metre-wide strip of land from Arthur Drive west to the neck of the Roberts Bank causeway and are within the Agricultural Land Reserve. In 2008, the Agricultural Land Commission approved the acquisition of the Option Lands to create a new rail right-of-way.

8 Any proposed road and rail improvements that would not take place on Port Metro Vancouver-owned land would need to take place on Provincially- and/or BCRC-owned land, and as such, would be subject to consultation and agreement with the Ministry of Transportation and Infrastructure and/or BCRC, respectively.
4. CATEGORIES FOR ENVIRONMENTAL STUDY

Port Metro Vancouver has developed a list of categories for environmental study for the proposed Roberts Bank Terminal 2 Project. These categories were identified through environmental assessments and community consultation on past projects at Roberts Bank, including the Deltaport Third Berth Project, the Deltaport Terminal, Road and Rail Improvement Project and Pre-Consultation on the proposed Roberts Bank Terminal 2 Project in June 2011.

The categories for environmental study for the proposed Roberts Bank Terminal 2 Project include, but are not limited to, the following:

- Agriculture
- Air Quality
- Archaeology
- Biofilm (a nutrient-rich film found in the intertidal zone)
- Coastal Geomorphology (coastal formations and features)
- Coastal Seabirds and Waterfowl
- Lighting
- Marine Fish
- Marine Invertebrates
- Marine Mammals
- Marine Vegetation
- Noise
- Socio-Community and Socio-Economic
- Terrestrial Wildlife/Vegetation (land-based animals and plants)
- Traditional Use
- Visual
- Water and Sediment Quality

4a. Please indicate your interests and any additional categories for consideration as part of the environmental study.
5. MARINE ECOSYSTEMS

The marine environment at Roberts Bank is an interconnected system made up of a wide range of aquatic life. Port Metro Vancouver is undertaking rigorous scientific studies to understand marine ecosystem components and their interactions. Studies on each of the following aspects of the marine ecosystem will be conducted; however, Port Metro Vancouver is interested to learn which are of highest interest to communities, stakeholders and the public.

5a. Please indicate how important you think each of the following aspects of the marine ecosystem are for Port Metro Vancouver to focus on in its baseline studies, and please note any specific interests or considerations you may have for each one:

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Extremely important</th>
<th>Very important</th>
<th>Somewhat important</th>
<th>Not very important</th>
<th>Not at all important</th>
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<tbody>
<tr>
<td>Marine vegetation, such as eelgrass, ulva and other seaweeds</td>
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<tr>
<td>Interests or Considerations:</td>
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<tr>
<td><strong>Marine invertebrates</strong> such as crabs, cockles, sea pens and other members of the benthic community</td>
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<td>Interests or Considerations:</td>
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<tr>
<td><strong>Marine fish</strong> such as salmon, flatfish, sand lance, forage fish and surf smelt</td>
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<td>Interests or Considerations:</td>
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<tr>
<td><strong>Marine-dependent coastal seabirds and waterfowl</strong></td>
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<td>Interests or Considerations:</td>
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<td><strong>Biofilm and other micro-organisms in intertidal areas</strong></td>
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<td>Interests or Considerations:</td>
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<tr>
<td><strong>Marine mammals</strong>, including whales, seals, sea lions and otters</td>
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<tr>
<td>Interests or Considerations:</td>
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</table>
6. TERRESTRIAL WILDLIFE AND VEGETATION

The terrestrial (land-based) environment in the proposed project area is an interconnected ecosystem made up of a wide range of plants, animals and terrestrial habitats. Port Metro Vancouver is undertaking rigorous scientific studies to understand terrestrial ecosystem components and their interactions. Studies on each of the following aspects of the terrestrial ecosystem will be undertaken; however, Port Metro Vancouver would like to determine your level of interest in each one.

6a. Please indicate how important you think each of the following aspects of the terrestrial ecosystem are for Port Metro Vancouver to focus on in its baseline studies, and please note any specific interests or considerations you may have for each one:

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<thead>
<tr>
<th>Aspect</th>
<th>Extremely important</th>
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<th>Somewhat important</th>
<th>Not very important</th>
<th>Not at all important</th>
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<tr>
<td>Vegetation in general – wildlife habitat and ecologically sensitive areas</td>
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<td>Interests or Considerations:</td>
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<tr>
<td>Birds species such as waterfowl, raptors and songbirds</td>
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<td>Interests or Considerations:</td>
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<tr>
<td>Invertebrate species such as butterflies and dragonflies</td>
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<td>Interests or Considerations:</td>
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<tr>
<td>Amphibians and reptiles, including frogs, turtles and snakes</td>
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<td>Interests or Considerations:</td>
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<td>Freshwater fish and their habitats</td>
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<td>Interests or Considerations:</td>
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</table>
7. **SOCIO-COMMUNITY AND SOCIO-ECONOMIC**

Port Metro Vancouver will undertake important studies concerning how the proposed project might interact with adjacent communities.

**SOCIO-COMMUNITY**

7a. Please indicate how important you think each of the following socio-community aspects are for Port Metro Vancouver to focus on in its baseline studies, and please note any specific interests or considerations you may have for each one:

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<th>Aspect</th>
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<th>Somewhat important</th>
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<tr>
<td>Noise and vibration</td>
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<td>Interests or Considerations:</td>
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<td>Air quality</td>
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<td>Interests or Considerations:</td>
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<td>Energy use and greenhouse gas emissions</td>
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<td>Interests or Considerations:</td>
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<td>Lighting</td>
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<td>Interests or Considerations:</td>
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<td>Viewscape and aesthetics</td>
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<tr>
<td>Interests or Considerations:</td>
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</table>
### SOCI-O-ECONOMIC

7b. Please indicate how important you think each of the following socio-economic aspects are for Port Metro Vancouver to focus on in its baseline studies, and please note any specific interests or considerations you may have for each one:

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<tr>
<th>Aspect</th>
<th>Extremely Important</th>
<th>Very Important</th>
<th>Somewhat Important</th>
<th>Not Very Important</th>
<th>Not at All Important</th>
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<tr>
<td>Jobs</td>
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<td>Interests or Considerations:</td>
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<td>Wages</td>
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<td>Interests or Considerations:</td>
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<td>Construction- and operations-related</td>
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<td>business opportunities</td>
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<td>Interests or Considerations:</td>
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<td>Government revenue</td>
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<td>Interests or Considerations:</td>
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### COMMUNITY LEGACY BENEFITS

Port Metro Vancouver is initiating discussions with local and regional government regarding community legacy benefits that could be provided as part of the Container Capacity Improvement Program. Port Metro Vancouver is also interested in feedback from communities, stakeholders and the public regarding the types of community legacy benefits that should be considered.

8. COMMUNITY LEGACY BENEFIT IDEAS

These community legacy benefits will be over and above the economic benefits that would result from the projects, and the mitigation measures that would be required through the environmental assessment process.

8a. Please indicate your level of agreement with regards to Port Metro Vancouver exploring community legacy benefits related to the following areas:

<table>
<thead>
<tr>
<th>Area</th>
<th>Strongly Agree</th>
<th>Somewhat Agree</th>
<th>Neither Agree nor Disagree</th>
<th>Somewhat Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts</td>
<td>☐</td>
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<td>☐</td>
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<tr>
<td>Community well-being</td>
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<tr>
<td>Environment</td>
<td>☐</td>
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<tr>
<td>Transportation</td>
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</table>
8b. Please provide any additional comments you may have regarding Community Legacy Benefits:

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9. Please provide any additional comments you may have regarding any aspect of the proposed Roberts Bank Terminal 2 Project:

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HOW INPUT WILL BE USED:

Input received during consultation will be considered, along with technical and economic information, in refining project designs or plans, including engineering and environmental mitigation plans.

The input received during this consultation will be summarized in a Consultation Summary Report, which will be made available online at www.portmetrovancouver.com/RBT2. A Consideration Memo will be produced, showing how input was considered in refining project designs or in mitigation and compensation measures.

PLEASE PROVIDE YOUR CONTACT INFORMATION (OPTIONAL):

Name:

Organization (if applicable):

Address:

Postal Code:

Email:

Phone:


You can return completed feedback forms by:

- Mail: Port Metro Vancouver
  Attention: Roberts Bank Terminal 2 Project
  100 The Pointe, 999 Canada Place
  Vancouver, BC V6C 3T4
- Fax: 1.866.284.4271 Attention: Roberts Bank Terminal 2 Project
- Email: container.improvement@portmetrovancouver.com
- Web: www.portmetrovancouver.com/RBT2

Any personal contact information you provide to Port Metro Vancouver on this form is collected and protected in accordance with the Freedom of Information and Protection of Privacy Act. If you have any questions regarding the Container Capacity Improvement Program or the Roberts Bank Terminal 2 Project, and/or the information collection undertaken on this form, please contact Port Metro Vancouver at container.improvement@portmetrovancouver.com.