Preliminary Project Description

for the

Roberts Bank Container Expansion Program

Deltaport Third Berth Project

Delta, B.C.

Draft Date: June 08, 2004
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1.0 INTRODUCTION

The Vancouver Port Authority ("VPA" or "proponent") has prepared a container terminal expansion strategy to enable the Port of Vancouver to maintain its strong competitive position as a North American gateway for container trade. Trans-Pacific container shipments are increasing due to the growth in global trade, particularly with China, and the ongoing containerization of products. As a result, major ports on the West Coast of North America expect their container traffic to triple in the next twenty years. South of Vancouver, the Ports of Seattle and Tacoma are making major investments in terminal facilities that will enable them to compete for future business. Port of Vancouver’s container terminal facilities must also expand in order for the port to continue serving Canada’s trade.

VPA’s expansion strategy proposes to increase the container terminal capacity at the Port of Vancouver from 1.7 million TEUs in 2003 to over 5 million TEUs by 2020, (a TEU, or twenty-foot equivalent unit, is a standard unit for measuring container volumes based on a container 20 feet in length). The expansion strategy includes the development of additional container facilities at VPA’s existing Roberts Bank Port facility located in Delta, British Columbia. The proposed expansion includes two separate container terminal projects: the Deltaport Third Berth Project and the Terminal 2 Project. The Deltaport Third Berth Project will add a third berth to the existing Deltaport Container Terminal, while the Terminal 2 Project will create a new three berth container terminal. VPA is studying the environmental impacts of the Deltaport Third Berth Project and is committed to developing a project that is socially, economically and environmentally sustainable.

This project description outlines the components associated with the Deltaport Third Berth Project (the Project).
1.1 PROJECT RATIONALE

The Deltaport Container Terminal (Deltaport) was built by VPA and is operated by Terminal Systems Inc. (TSI) under a long-term lease agreement. The terminal opened in 1997 and has a current operating capacity of 900,000 TEUs per annum. Deltaport has experienced significant growth in traffic during its first six years of operation with annual throughput increasing to 880,000 TEUs for 2003. The terminal requires expansion as soon as possible to serve the growing needs of its customers. The addition of Deltaport Third Berth will increase the capacity at Deltaport to 1,300,000 TEUs per annum (an increase of 400,000 TEUs). It is anticipated that Deltaport Third Berth will be operational in 2008 and will reach full capacity by 2012.

1.2 PROJECT LOCATION

The Deltaport Third Berth Project is located at the existing Roberts Bank Port facility in Delta, approximately 35 km south of Vancouver, as shown on Figure 1 – Location Map and Figure 2 – Site Map.

The existing VPA facilities at Roberts Bank include Deltaport, a 65 hectare (160 acres) container terminal operated by Terminal Systems Inc. (TSI), and Westshore Terminals, a 50 hectare (approximately 124 acres) bulk handling coal port facility. These terminals are connected to the mainland by a 4.1 km long causeway, which supports road and rail infrastructure.

Roberts Bank is located along the southwestern margin of the Fraser River delta. The Roberts Bank causeway and terminal is located on the south end of Roberts Bank, south of the main area of the Fraser River outflow. Roberts Bank itself consists of a shallow area of sediments extending out from the shoreline along the seaward side of the river delta. During low tide, these sediments are exposed as mudflats, which extend for several hundred meters from the shore towards the ocean. Marine vegetation in the area consists of estuarine marsh, salt marsh and eelgrass beds.

The VPA considered several locations for Deltaport Third Berth, including berth locations south of Deltaport and adjacent to Westshore operations, and terminal land areas on the west side of the causeway. After a review of these locations, it was determined that the project could not disrupt the existing Westshore operations, must have a berth location and terminal land location adjacent to the existing facility for operational reasons, and must be cost effective for both project construction and operation. In addition, the proposed footprint was designed to minimize impacts to the marine environment. These requirements led to the Deltaport Third Berth location north of the existing Deltaport terminal, as shown on Figure 2 – Site Map.
1.3 PROJECT PROPONENT

The proponent for the Deltaport Third Berth Project is the Vancouver Port Authority (VPA). Formerly operating as a member of the National Harbours Board (1936 – 1983), and as the Vancouver Port Corporation (1983-1999), the VPA is an independent agency created by the federal government in 1999 to manage federal port lands in Vancouver and surrounding municipalities. The VPA manages the Port of Vancouver to encourage and facilitate international deep-sea trade on behalf of and in the interests of all Canadians. The VPA manages 500 hectares of land and 6,000 hectares of water along 233 km of coastline from Roberts Bank to Burrard Inlet (Vancouver’s Inner Harbour).
2.0 PROJECT DESCRIPTION

Deltaport functions as a transshipment centre for the transfer of containers between marine vessels and inland transportation by road and rail. The Project consists of construction of a wharf to accommodate an additional berth and approximately 20 hectares (50 acres) of land for an expanded container storage yard. It will also include dredging to lengthen the existing ship channel and create a tug moorage area adjacent to the terminal. The Deltaport Third Berth Project will result in additional marine, road and rail traffic. Project infrastructure will support the movement of this additional traffic. Rail improvements will be required on the causeway and adjacent to Deltaport Way. Road improvements may also be required, pending further Ministry of Transportation and VPA studies.

2.1 TRAFFIC FORECASTS

2.1.1 Marine

In 2003, Deltaport recorded 365 vessel calls (ships that berthed at Deltaport) for the year. Vessels ranged in size from 1,600 TEUs to 6,300 TEUs with the average size being approximately 4,500 TEUs. Marine traffic at Deltaport is projected to change both in numbers and in vessel size over the next twenty years. Based on preliminary research, it is expected that the number of vessels will increase to approximately 500 vessel calls per year at full capacity in 2012. This represents, on average, less than three additional vessel calls per week. In the long term it is expected that vessel sizes will continue to increase and at some point, vessels as large as 10,000 TEUs will call at Deltaport. This could result in a lower number of vessel calls in the future.

2.1.2 Rail

In 2003, approximately 57% of all import and export containers were handled by rail. This represents an average of six container trains per day (three trains in and three trains out) that currently arrive and depart at Deltaport. In addition, twelve coal trains arrive and depart from Westshore Terminals coal facility. By 2012, rail container traffic is forecasted to increase to 65% of all import and export containers at Roberts Bank, which will increase container trains by three trains per day, resulting in a total of nine container trains per day. Total Roberts Bank rail traffic, including coal trains, will increase from the current 18 trains to a total of 21 trains. These train numbers are summarized below in Table 1.
Table 1: Current (2003) and Forecasted (2012) Train Traffic for Roberts Bank

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<th>2003 Conditions</th>
<th>Forecasted 2012 Conditions¹</th>
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<tr>
<td></td>
<td>Total Trains per day</td>
<td>Total Trains per day</td>
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<tr>
<td>Deltaport (container trains)</td>
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<tr>
<td>Westshore (coal trains)</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>21</td>
</tr>
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</table>

Note 1: Assumes Deltaport Third Berth is fully operational.

2.1.3 Road

In 2003, approximately 43% of all import and export containers were handled by truck. This generated approximately 1800 truck trips per day (900 in and 900 out). In early 2004, the terminal operator introduced a new policy to restrict the number of empty containers being repositioned to the terminal. This policy reduced the truck traffic to approximately 1500 trips per day.

By 2012, truck traffic is forecasted to represent 35% of all import and export containers. This will increase truck traffic to approximately to 2400 trips per day.

2.2 PROJECT COMPONENTS

The components of the Deltaport Third Berth Project consist of construction of a wharf to accommodate the third berth, land for the container storage yard, an additional truck exit gate, a tug moorage area and boat launch, extension of the ship channel, additional rail support track and some limited road improvements. A Project plan is shown below on Figure 3 – Terminal and Marine Plan.
2.2.1 Wharf to Accommodate the Third Berth

The Deltaport Third Berth Project is planned to handle a range of vessels including the largest 10,000 TEU ships currently being considered for the Trans-Pacific container trade. The wharf will be 427 metres (1400 feet) long as shown on Figure 3. The berth will be navigable to −16 metres elevation and the wharf will have a deck elevation of approximately +8.0 metres. Further design assessment is required to determine if the wharf will be caisson or pile and deck construction.

2.2.2 Container Storage Yard

The Deltaport Third Berth Project includes the construction of approximately 20 hectares (50 acres) of new land area for container operations and storage. This will increase the area of Deltaport from 65 hectares (160 acres) to approximately 85 hectares (210 acres). The land will be created through dredging and landfill operations, with soil densification works required along the perimeter berm and under most new structures. The revetment works (i.e., shoreline protection) for the northern shoreline of the container yard will consist of rock armoured slopes.

A preliminary container yard configuration is shown on Figure 4 – Deltaport Third Berth Terminal Plan.

Both the wharf structure and container storage yard will be designed to meet various conditions including wind, currents, waves and water level as well as seismic requirements.

2.2.3 Buildings

A truck exit gate is the only building required on the terminal as part of the Deltaport Third Berth Project.

2.2.4 Tug Moorage and Boat Launch

The tug moorage area currently located at the northeast corner of the existing Deltaport terminal will be relocated to the northern corner of the third berth, as shown on Figure 3. The tug moorage area will consist of a floating dock, walkway and dredged channel to allow tug access. The proposed tug moorage area will also require dredging to a depth of about 6.5 meters.

The safety boat launch, currently located in the Deltaport terminal tug moorage area, will be relocated as part of the Deltaport Third Berth Project. The new safety boat launch location will be identified as part of the engineering and environmental study program.
2.2.5 Ship Channel

The existing ship channel will be extended as shown on Figure 3 with a depth of approximately 16 metres to provide access and adequate draft for container ships.

2.2.6 Rail

Rail access to Roberts Bank is via a 42 km rail line that leaves the CN mainline in Fort Langley and travels west through Langley, Surrey and Delta. Trains arriving at Roberts Bank are marshalled through a series of arrival/departure tracks and support tracks before being delivered to Deltaport or Westshore.

There is approximately 50,000 feet of rail track currently used for container operations at Roberts Bank. This consists of two 10,000-foot arrival/departure tracks at the Gulf siding between 41B Street and Arthur Drive and approximately 30,000 feet of support track on the Roberts Bank causeway. In addition, there is approximately 28,000 feet of loading/unloading track within Deltaport.

Preliminary rail analysis indicates that there will be a requirement for approximately 23,000 feet of additional rail track for the Deltaport Third Berth Project. This rail track will be provided by extending the arrival/departure tracks at the Gulf siding (east of Arthur Drive to 64th Street) and adding support track on the causeway.

All of the rail improvements will be constructed within BC Rail’s property on the Roberts Bank causeway and within their existing right-of-way. The rail extensions at the Gulf siding may require closure of the road-rail grade crossing at 57B Street. No changes are required at the 41B Street grade crossing and this will remain open to vehicular traffic. The additional track requirements are shown on Figure 5 – Road and Rail Network.

2.2.7 Road

Road access to the Roberts Bank Port facility is via Highway 99 and Highway 17, both of which are designated provincial highways. Access from Highway 17 is via Deltaport Way, which was constructed in 1995 for the original development of Deltaport. Deltaport Way continues west onto the 4.1 km causeway leading to the Roberts Bank Port facility (Deltaport and Westshore).
No new road infrastructure along the causeway or on Deltaport Way will be required to support the Deltaport Third Berth Project. However, to address the additional Project traffic on Highway 17, the VPA and the Ministry of Transportation are currently assessing a number of options for short-term improvements. This option assessment will be completed prior to the Environmental Assessment (EA) Application. For the long-term, the provincial Gateway Program has initiated a planning study that is examining a number of options for the South Fraser Perimeter Road through Delta to the intersection of Highway 17 and Deltaport Way. This road will be more than adequate to handle the long term traffic generated by Roberts Bank port activities, future ferry traffic and regional growth.

2.2.8 Causeway Improvements

Widening of the Roberts Bank causeway is not required for the Deltaport Third Berth Project.

2.2.9 Site Services

There will be limited construction of new site services for the Project, as many of the existing Deltaport site services are adequate to meet the Deltaport Third Berth Project needs. For instance, no power line improvements are required, no additional fuel supply or fuel storage facilities are required, and no additional sewage or waste disposal facilities are required. No off-site water services will be required, however an on-site storage tank will be constructed.

Additional terminal lighting will be required but the detailed design has yet to be determined. Lighting for the Deltaport Third Berth Project will meet the Canada Labour Code requirements for worker safety, and will be designed to minimize environmental and socio-community impact.

Stormwater run-off from Deltaport Third Berth will be collected in a conventional drainage system of catchbasins, manholes and buried sewers. All runoff will pass through an oil water separator and sedimentation tank to remove potential hydrocarbons and suspended solids prior to discharge into the ocean. Additional spill control measures may be identified in an Operations Environmental Management Plan, which will be addressed in the EA Application.

2.2.10 Terminal Equipment

Deltaport operations consist of the loading and unloading of container ships, container storage, and container transfers to and from rail and road transport. The container ships are loaded and unloaded by electric powered ship-to-shore gantry cranes that are rail mounted at the berth face.

After the containers are unloaded from the ships, the containers are moved by tractor trailers to the container storage yard and stacked by rubber tire gantries (RTG). The tractor trailers and the RTGs are powered by diesel engines. The containers will be stacked to a maximum of five high in the storage yard. After a brief storage period, the containers are loaded onto trucks for road transport or onto yard based tractor trailers, which will move the containers to the existing Deltaport intermodal yard for rail transport. Electrified rail mounted gantries (RMG) are used in the intermodal yard to load the containers onto the rail cars.
New equipment for the Deltaport Third Berth Project includes three ship-to-shore gantry cranes, 20 RTGs, one RMG, numerous tractor trailers and other related equipment.

2.2.11 Security

The VPA is required for all its container terminals to meet the International Ship and Port-facility Security (ISPS) Code by July 1, 2004. As such, the Deltaport Third Berth Project will be designed and operated to meet the latest security standards.

2.3 CONSTRUCTION

2.3.1 Dredge Areas and Terminal Land

The dredging program requires further engineering assessment to optimize the dredge and fill volumes; therefore, the volumes presented herein should be considered preliminary. Final dredging program details will be presented in the EA Application. Preliminary estimates indicate dredging of approximately 1.6 million cubic metres of material is required to create the ship channel and an additional 2 million cubic metres will need to be dredged for reclamation of the third berth and terminal area. Up to 2.3 million cubic metres of the total dredge volume will be unsuitable for site fill.

Dredging equipment may consist of cutter-suction dredges, clamshell dredges or a combination of both. The dredging operations will run 24 hours/day within the allowable dredging windows established by the Department of Fisheries and Oceans, and based on the impact assessment of fish presence, composition and abundance in the area.

During landfilling operations the dredgeate will be hydraulically placed in layers. Waste silt material that is not geotechnically suitable for the creation of the new terminal land area will be managed and contained to minimize environmental impact. Details of the waste silt management program will be provided in the EA Application.

The VPA will use the waste silt material where possible for beneficial use as habitat compensation features. However, the VPA will also apply to re-activate the nearby Roberts Bank ocean disposal location for waste silt and excess dredged materials. The ocean disposal material will comply with Environment Canada’s Ocean Disposal Regulations and Interim Contaminant Testing Guidelines.

In addition to the placement of dredged materials, a total of approximately 290,000 m³ of imported material (rip rap, rock tailings and gravel) will be placed around the perimeter of the land area to retain the dredge fill and for shoreline protection of the terminal land area.
2.3.2 Wharf

The wharf structure is subject to engineering and environmental mitigation design and will either be a caisson or a pile and deck structure. Final selection of the appropriate structure will be based on engineering and construction requirements, impact on the environment and cost. Details of construction will be addressed in the final application once a design structure is selected.

2.3.3 Rail

The additional rail track on the causeway and at the Gulf siding, adjacent to Deltaport Way, will be constructed by BC Rail. Details of the construction program will be included in the final EA Application.
3.0 SCHEDULE

The proposed Deltaport Third Berth Project Schedule is presented below:

- Environmental and Engineering Studies: Summer 2003 - Summer 2004
- Application/Comprehensive Study (BCEAA and CEEA): Fall 2004
- Commencement of Construction: Spring 2006
- Construction Completion/Third Berth Operational: Summer 2008

A detailed construction schedule, including timing environmental windows for operation will be developed for the *BC Environmental Assessment Act* (BCEAA) Application / *Canadian Environmental Assessment Act* (CEAA) Comprehensive Study.
4.0 PUBLIC AND FIRST NATIONS CONSULTATION

The VPA has initiated a comprehensive community and stakeholder consultation process that is fully integrated with the project review. Consultation to date has focused on raising public awareness about the scope, necessity, and benefits of the Deltaport Third Berth Project; engaging the public and key stakeholders in identifying initial issues and interests pertaining to potential environmental, social, economic impacts and/or benefits of the project. Further details on the consultation program are presented in the “Consultation and Communications Plan – Roberts Bank Container Expansion Project, June 2003”, available on the BCEAO website, (www.eao.gov.bc.ca/epic/output/html/deploy/epic_document_212_15399.html).

Consultation with First Nations will be consistent to the Provincial Policy for Consultation with First Nations (October 2002). The following five First Nations have been identified as those that may potentially have an interest in the Project: Tsawwassen First Nation, Musqueam First Nation, Katzie First Nation, Sto:lo First Nation, Semiahmoo First Nation.
5.0 ENVIRONMENTAL ASSESSMENT

An environmental assessment will be conducted which will meet both provincial (BCEAA) and federal (CEAA) requirements. The environmental assessment will identify potential environmental, economic, social, heritage and health impacts associated with the Project and define how potential adverse impacts will be avoided or mitigated. As part of the environmental assessment, studies are presently being undertaken for the following components:

Biophysical Studies:
- Coastal Geomorphology
- Marine Environment
- Terrestrial Environment (wildlife and vegetation)
- Water and Sediment Quality
- Waterfowl and Coastal Seabirds (birds)

Socio-Community Studies:
- Air Quality
- Noise
- Archaeology/Heritage Resources
- Socio-Economic
- Visual Landscape
- Lighting

Supporting Studies:
- Transportation and Traffic (road, rail and marine)
- Seismic Assessment

In addition, to the above study components, the following factors will also be addressed in the environmental assessment:

- Cumulative environmental effects
- Accidents and malfunctions
- Effects of the environment on the project
- Sustainability of renewable resources
- Follow-up requirements.
6.0 SUMMARY

The VPA believes that the proposed Deltaport Third Berth Project will help meet the demand for additional container terminal facilities in the Port of Vancouver, increase BC/Canada competitiveness as a trade partner in the Pacific Northwest container market, and contribute to the economies of the Vancouver region, BC and Canada. The VPA is studying the environmental impacts of this expansion project and is committed to develop a project that is socially, economically and environmentally sustainable.
Canadian Environmental Assessment Registry

CEA Registry Reference Number: 04-03-3734

ENVIRONMENTAL ASSESSMENT DECISION STATEMENT

Deltaport Third Berth Expansion Project
Roberts Bank (BC)

November 3, 2006 - The Honourable Rona Ambrose, Minister of the Environment, responsible for the Canadian Environmental Assessment Agency, has reviewed the federal environmental assessment of the Deltaport Third Berth Expansion proposed by the Vancouver Port Authority.

Having taken into consideration the comprehensive study report and the public comments filed pursuant to subsection 22(2) of the Canadian Environmental Assessment Act (the Act), the Minister is of the opinion that:

- No additional information is necessary and that public concerns raised have been addressed through the comprehensive study;
- The project, taking into account the mitigation measures described in the comprehensive study report, is not likely to cause significant adverse environmental effects; and
- The mitigation measures and follow-up program described in the comprehensive study report are appropriate for the proposed project.

The Minister has referred the project back to the responsible authorities, Fisheries and Oceans Canada and Environment Canada, for appropriate action under section 37 of the Act.

The Minister recommends that the responsible authorities ensure the implementation of the mitigation measures described in the comprehensive study report. The Minister also recommends that the responsible authorities implement the follow-up program described in the comprehensive study report, in order to determine the effectiveness of the measures taken to mitigate any adverse environmental effects, and to verify the accuracy of the environmental assessment of the project.
For further information on this environmental assessment, please use the contacts provided in the Notice of Commencement.

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Updated: 2006-11-03

Important Notices