ROBERTS BANK TERMINAL 2 WORKING GROUP

Meeting #3
May 27th, 2014
Morning Session

(NOTE: contains preliminary information subject to revision)
WELCOME AND INTRODUCTION

- Facilitator: Malcolm Smith, R.P.Bio, Hemmera
- Working Group Members
- Presenters

- Housekeeping
  - Washrooms and exits
  - Breaks
  - Speaking protocol
1. Recap of Working Group#2
2. Issues Scoping Process for Candidate Valued Components
3. RBT2 Proposed Approach to the Environmental Assessment
   1. Recap – Review of Proposed Approach to EA Methodology
   2. Cumulative Effects Assessment
   BREAK
4. Proposed Intermediate Components
   LUNCH
5. Proposed Biophysical Valued Components
   BREAK
   Discussion: Social and Economic topics of interest for Working Group #4
7. Closing and Next Steps
RECAP FROM WG #2 – APRIL 15, 2014

WG #2 Re-cap:

• Comments received on EA methodology, Valued Components, Intermediate Components and Cumulative Effects Assessment
  • Focus of WG #3 reflects interests raised by members to better understand these aspects of the Environmental Impact Statement

• Final WG#2 meeting records distributed on May 23, 2014
  • Meeting record contains answers to questions raised in the meeting
  • Questions related to Air Quality provided via the Question Form at WG #2 is to be addressed in Working Group #4
Distribution of WG Information:

- Following each WG, members will receive the draft meeting record for input prior to finalisation, and copies of the presentations
- At the end of the Working Group process, PMV intends to prepare a summary report that will be shared with working group members prior to posting on CEAA’s registry website
ISSUES SCOPING

Presenter: Pamela O’Hara
Senior Project Manager, Hemmera

Objectives:

• To provide an overview of consultation and engagement activities conducted to date

• To summarise key interests and issues guiding the selection of candidate valued components.
Port Metro Vancouver has a strong understanding of the natural and human environments at Roberts Bank as:

- PMV has a long history of project development and operations on Roberts Bank (1970 to present)
  - Previous field studies, modelling, environmental assessments, and monitoring programs undertaken
- PMV has remained actively engaged with:
  - Federal and provincial regulatory agencies
  - Aboriginal groups
  - Local governments and communities
  - Stakeholders and the public
Interests and issues have been identified through:

- Technical Advisory Groups
- Regulatory advisory groups (e.g. Air Quality Scoping Study Team)
- Continued engagement on specific topics with regulators:

<table>
<thead>
<tr>
<th>Federal</th>
<th>Provincial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canadian Environmental Assessment Agency</td>
<td>B.C. Environmental Assessment Office</td>
</tr>
<tr>
<td>Environment Canada</td>
<td>B.C. Ministry of Environment</td>
</tr>
<tr>
<td>Canadian Wildlife Service</td>
<td>B.C. Ministry of Forests, Lands, and Resource Operations</td>
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<tr>
<td>Health Canada</td>
<td>B.C. Ministry of Health</td>
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<tr>
<td>Transport Canada</td>
<td>B.C. Ministry of Transportation and Infrastructure</td>
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<tr>
<td>Finance Canada</td>
<td>B.C. Ministry of International Trade</td>
</tr>
<tr>
<td>Fisheries and Oceans Canada</td>
<td>B.C. First Nations Health Authority</td>
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<tr>
<td>Public Safety Canada</td>
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<tr>
<td>Infrastructure Canada</td>
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</tr>
</tbody>
</table>

- Aboriginal groups, local governments, public and stakeholders
ABORIGINAL CONSULTATION
ABORIGINAL CONSULTATION

<table>
<thead>
<tr>
<th>Aboriginal Groups identified by CEA Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tsawwassen First Nation</td>
</tr>
<tr>
<td>Lake Cowichan First Nation</td>
</tr>
<tr>
<td>Musqueam First Nation</td>
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<tr>
<td>Lyackson First Nation</td>
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<tr>
<td>Semiahmoo First Nation</td>
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<tr>
<td>Penelakut Tribe</td>
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<tr>
<td>Tsleil-Waututh Nation</td>
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<tr>
<td>Métis Nation British Columbia</td>
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<tr>
<td>Stz’uminus First Nation</td>
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<tr>
<td>Stó:lō Tribal Council</td>
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<tr>
<td>Cowichan Tribes</td>
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<tr>
<td>Stó:lō Nation</td>
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<tr>
<td>Halalt First Nation</td>
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NOTE: As identified by CEA Agency in RBT2 EIS Guidelines (January 2014), PMV is also consulting with the Hwlitsum First Nation, as a member of the Cowichan Nation Alliance. In addition to these identified groups, there has been ongoing engagement with Kwantlen, Katzie and Squamish First Nations.
Consultation and engagement:

- Project update meetings and letters
- Open houses, community meetings, small group meetings, and presentations for Aboriginal groups
- Sharing of project-related materials and documents
- Current use studies and use of land and resources for traditional purposes
- Aboriginal use for traditional purposes and current use studies
- Feedback on valued component selection
- Working Groups
- Aboriginal Working Groups
## Key Aboriginal interests and issues raised to date

<table>
<thead>
<tr>
<th>Interest and Issue</th>
<th>Impacts on Aboriginal interests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health of marine ecosystem</td>
<td>Impacts on Aboriginal interests</td>
</tr>
<tr>
<td>Overall reduction in marine vegetation in the Lower Mainland (cumulative effects)</td>
<td>The potential for accidents and spills to impact the marine environment; effective spill response</td>
</tr>
<tr>
<td>Cultural importance of land, water and resources</td>
<td>Procurement and employment opportunities for Aboriginal groups</td>
</tr>
<tr>
<td>Impact to critical life history stages of fish</td>
<td>Effects to marshes, eelgrass beds, and enteromorpha species</td>
</tr>
<tr>
<td>Impacts to species listed under <em>Species at Risk Act</em></td>
<td>Reduction in crab harvesting area; impacts to crab health and population</td>
</tr>
<tr>
<td>Loss of marine habitat and fisheries impacts</td>
<td>Increase in vessel, train and vehicle numbers</td>
</tr>
<tr>
<td>Behavioural and cultural disruptions to marine mammals</td>
<td>Cumulative effects from port development at Roberts Bank</td>
</tr>
<tr>
<td>Impacts on wildlife</td>
<td>Increase in vessel and rail emissions</td>
</tr>
</tbody>
</table>
LOCAL GOVERNMENT, PUBLIC AND STAKEHOLDER CONSULTATION

For additional details refer to WG#1 presentation
Consultation with:

- Local and regional governments
  - Technical Liaison Committees
  - Elected Level Roundtable
  - PMV-led RBT2 Working Group
- Local communities and residents
- Tenants and terminals, and railways
- Community and business organizations
- Industry and agricultural groups
- Environmental non-governmental organizations
### Key interests and issues raised to date

<table>
<thead>
<tr>
<th>Ensure balance of environmental, social and economic needs during planning</th>
<th>Increase in road and rail traffic; improving efficiency of container truck operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health of marine ecosystem; ecological importance; species population and distribution changes</td>
<td>Cost of infrastructure; opportunities for local businesses; potential jobs</td>
</tr>
<tr>
<td>Effects on birds, fish, biofilm, noise, light pollution, land, air quality; marine habitat loss</td>
<td>Socio-community effects and well-being; reduced scenic quality; visual disturbance</td>
</tr>
<tr>
<td>Economic forecasts and project justification; project alternatives</td>
<td>Access to marine resources; fisheries support economy</td>
</tr>
<tr>
<td>Environmental assessment scope and regulatory process</td>
<td>Health related to air quality, quality of life and community well-being</td>
</tr>
</tbody>
</table>

A Consultation Summary Report for the activities described above is available on PMV’s website (http://www.robertsbankterminal2.com/) including a Consideration Memo with PMV responses to the feedback received.
## POTENTIAL FEDERAL PERMITS

<table>
<thead>
<tr>
<th>Federal Authority</th>
<th>Act</th>
<th>Activity</th>
<th>Potential Authorization Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fisheries &amp; Oceans Canada</td>
<td><em>Fisheries Act</em>, Paragraph 35(2)(b)</td>
<td>Serious harm to commercial, recreational and Aboriginal fisheries</td>
<td>Authorization for works, undertakings and activities in or around water that are likely to result in serious harm to fish.</td>
</tr>
<tr>
<td>Environment Canada</td>
<td><em>Canadian Environmental Protection Act</em>, 1999, Part 7, Div 3</td>
<td>Disposal of dredged material</td>
<td>Disposal at Sea Permit</td>
</tr>
<tr>
<td>Vancouver Fraser Port Authority (PMV)</td>
<td><em>Canada Marine Act</em>; Port Authorities Operations Regulations</td>
<td>Construction of terminal</td>
<td>PMV Project Permit</td>
</tr>
<tr>
<td>Fisheries &amp; Oceans Canada</td>
<td><em>Species at Risk Act</em> (SARA)</td>
<td>Construction and operation within southern resident killer whale critical habitat</td>
<td>Potential SARA Permit</td>
</tr>
</tbody>
</table>
QUESTIONS?
Presenter: Celesa Horvath, Senior Regulatory Advisor Ventus Development Services Inc.

Objective: to clarify aspects of the proposed approach to assessing effects related to RBT2, based on WG#2 questions.
EIS will focus the assessment on valued components.

- Valued components are “attributes of the physical, biophysical, and human environment that may be affected by the Project that have been identified to be of concern by the proponent, government agencies, Aboriginal peoples, and the public.”

- Proposed valued components were identified through the issues scoping process

- Following scoping, a three-step process was used for VC selection.
PROPOSED VALUED COMPONENT SELECTION PROCESS

Handout

Step 1. Screen Candidate VCs
Does the candidate VC occur near or within the Project area?
AND
Could the Project interact with the candidate VC?
AND
Is the candidate VC of interest to the public, Aboriginal groups, or government?
OR
Is the candidate VC particularly sensitive or vulnerable to disturbance?

yes
no

Candidate VC is not considered further

Step 2. Evaluate Project Interactions with Candidate VCs
Does the Project have the potential to adversely affect the candidate VC and can this effect be measured and monitored?

yes
no

Candidate VC is not considered further

Step 3. Select Valued Components
Is the candidate VC a receptor component in a Project-related effects pathway?

yes

Valued Component
Candidate VC is selected as a VC for the purposes of the effects assessment.

no

Intermediate Component
Candidate VC represents an intermediate step in an effects pathway.
Project-related changes to intermediate components inform the effects assessment of selected VCs.
Step 1
- Does the candidate VC occur near/within the Project area?
AND
- Could the Project interact with the candidate VC?
AND
- Is the candidate VC of interest to the public, Aboriginal groups or government?
OR
- Is the candidate VC particularly sensitive or vulnerable to disturbance?

Step 2
- Does the Project have the potential to adversely affect the candidate VC and can this effect be measured and monitored?

Step 3
- Is the candidate VC a receptor component in a Project-related effects pathway?

Selected as VALUED COMPONENT

PROPOSED VALUED COMPONENT SELECTION PROCESS

PRELIMINARY INFORMATION SUBJECT TO REVISION

portmetrovancouver.com

Working Group #3 – May 27, 2014.
Example of a pathway of effects for RBT2:

Legend

- Project Activity
- Project Effect
- Intermediate Component
- Valued Component

Project Activity: Dredging, Dyke Construction

Pathway of Effects:

1. Dredging
2. Sediment Re-suspension
3. Marine Water Quality
4. Marine Sediment
5. Marine Fish
6. Outdoor Recreation (Fishing)
7. Marine Commercial Use (Fishing)
8. Human Health
## Proposed Intermediate Components

<table>
<thead>
<tr>
<th>Proposed Intermediate Components</th>
<th>Proposed Valued Components and Sub-components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Quality</td>
<td>Marine Vegetation and Biofilm</td>
</tr>
<tr>
<td>Noise and Vibration</td>
<td>Marine Invertebrates</td>
</tr>
<tr>
<td>Light</td>
<td>Marine Fish</td>
</tr>
<tr>
<td>Coastal Geomorphology</td>
<td>Marine Mammals</td>
</tr>
<tr>
<td>Surficial Geology and Marine Sediment</td>
<td>Coastal Birds</td>
</tr>
<tr>
<td>Marine Water Quality</td>
<td>Roberts Bank Ecosystem</td>
</tr>
<tr>
<td>Underwater Noise</td>
<td>Ongoing Productivity of Commercial, Recreational, and Aboriginal Fisheries</td>
</tr>
<tr>
<td>Population Demographics</td>
<td>Labour Market</td>
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<tr>
<td></td>
<td>Economic Development</td>
</tr>
<tr>
<td></td>
<td>Marine Commercial Use</td>
</tr>
<tr>
<td></td>
<td>Local Government Finances</td>
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<tr>
<td></td>
<td>Services and Infrastructure</td>
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<tr>
<td></td>
<td>Outdoor Recreation</td>
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<td></td>
<td>Visual Resources</td>
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<tr>
<td></td>
<td>Land and Water Use</td>
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<tr>
<td></td>
<td>Physical and Cultural Heritage</td>
</tr>
<tr>
<td></td>
<td>Human Health</td>
</tr>
</tbody>
</table>

- Elgrasse, Intertidal Marsh, Macrogae, Biorat, Biofilm
- Benthic Invertebrates, Dungeness Crabs, Orange Sea Pens, Bivalve Shells
- Reef Fish, Forage Fish, Flatfish, Pacific Salmon, Demersal Fish
- Southern Resident Killer Whale, Humpback Whale, Steller Sea Lion
- Shorebirds, Waterfowl, Herons, Diving Birds, Raptors, Gulls and Terns, Passeuns
- n/a
- Commercial Fishery, Recreational Fishery, Aboriginal Fishery
- n/a
- n/a
- n/a
- Housing, Emergency Services, Health Services, Municipal Infrastructure
- n/a
- n/a
- n/a
- n/a
Proposed Intermediate Components

Air Quality  
Noise and Vibration  
Light  
Coastal Geomorphology  
Surficial Geology and Marine Sediment  
Marine Water Quality  
Underwater Noise  
Population Demographics

Proposed Valued Components

Marine Vegetation and Biofilm  
Marine Invertebrates  
Marine Fish  
Marine Mammals  
Coastal Birds  
Roberts Bank Ecosystem  
Ongoing Productivity of Commercial, Recreational, and Aboriginal Fisheries  
Labour Market  
Economic Development  
Marine Commercial Use  
Local Government Finances  
Services and Infrastructure  
Outdoor Recreation  
Visual Resources  
Land and Water Use  
Physical and Cultural Heritage  
Human Health

NOTE: Potential effects on established and asserted Aboriginal rights, title, and other interests, including current use of land and resources for traditional purposes, will be provided in the EIS separately from the ICs and VCs.
For each intermediate component, the EIS will describe:

- **Study purpose and approach**
- **Study methods**
- **Existing conditions**
- **Expected conditions**
- **Future conditions with the Project**
- **Future conditions with the Project and other projects/activities**
For each valued component, the EIS will describe:

- **VC sub-components and indicators**
- **Assessment boundaries**
- **Existing conditions**
- **Expected conditions prior to the Project**
- **Project-VC interactions and effects**
- **Mitigation measures**
- **Residual effects (if any)**
- **Cumulative effects assessment (if required)**
- **Monitoring and follow-up Programs**
QUESTIONS?
Presenter: Celesa Horvath, Senior Regulatory Advisor
Ventus Development Services Inc.

Objective: To provide an overview of the proposed approach to cumulative effects assessment to facilitate further discussion and understanding.
PRESENTATION OUTLINE

• Legislative framework
• When is a cumulative effects assessment required?
• The two ‘parts’ of a cumulative effects assessment
• What the spatial boundaries mean
• What will be in the Environmental Impact Statement for intermediate components and valued components
19. (1) The environmental assessment of a designated project must take into account the following factors:

(a) the environmental effects of the designated project, including the environmental effects of malfunctions or accidents that may occur in connection with the designated project and any cumulative environmental effects that are likely to result from the designated project in combination with other physical activities that have been or will be carried out.
WHAT DOES THAT MEAN?

- There must be an effect of the Project.
- It must combine with the effects of other projects and activities.
- The other projects and activities must not be hypothetical.
- The cumulative effect must be likely.

\[ X = \text{Combination of effects} \]
Questions on Legislative Framework?
WHEN IS A CUMULATIVE EFFECTS ASSESSMENT REQUIRED?

- If the Project is expected to have a residual effect on a VC, an assessment of potential cumulative effects on that VC is required.
A CUMULATIVE EFFECTS ASSESSMENT COMES IN TWO PARTS

The cumulative effects that are likely to result from the Project in combination with other projects and activities:

1. That have been carried out
2. That will be carried out
CONSIDERING THE EFFECTS OF “PROJECTS AND ACTIVITIES THAT HAVE BEEN CARRIED OUT”

- Existing conditions reflect everything that has happened so far.
- Any change in existing conditions caused by the Project is, by default, cumulative with what has happened before.
- The residual effects of the Project are cumulative effects.
SOME PROJECT OR ACTIVITY EFFECTS ARE STILL EXPECTED

• A project or activity has occurred so recently that the effects of it have not yet appeared.
• A situation in which a VC has not yet reached a new state of equilibrium after a past project or activity affected it.
HOW WE DEAL WITH THESE EXPECTED EFFECTS

Existing Conditions case
• Includes all currently observable effects

Expected Conditions case
• Includes effects that will have occurred by the time the Project commences

Future Conditions with Other Projects and Activities case
• Includes all other future effects
CONSIDERING THE EFFECTS OF “PROJECTS AND ACTIVITIES THAT WILL BE CARRIED OUT”

• What other projects and activities are considered?
  • Certain
  • Reasonably foreseeable
• ‘Master list’ of other projects and activities in the region
  • Each specialist will consider projects and activities that may cumulatively affect their component
  • Compilation based on CEA Agency’s Operational Policy Statement Assessing Cumulative Environmental Effects Under the Canadian Environmental Assessment Act, 2012 (CEA Agency 2013)

Handout: ‘Project Inclusion List’
### PROJECT INCLUSION LIST

- **Other projects and activities identified from:**
  
<table>
<thead>
<tr>
<th>Resource</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canadian Environmental Assessment Agency Registry</td>
<td>Existing land and resource management plans and land use plans</td>
</tr>
<tr>
<td>B.C. Environmental Assessment Office’s on-line Project Information Centre</td>
<td>Port Metro Vancouver’s Land Use Plan</td>
</tr>
<tr>
<td>B.C. Major Projects Inventory</td>
<td>Other publicly available information sources</td>
</tr>
<tr>
<td>Provincial government websites listing approved and applied-for tenures and licences</td>
<td></td>
</tr>
</tbody>
</table>

- **Other projects and activities limited to those that:**
  - Have been publicly announced
  - Have information on project scope, boundaries, timing, and potential effects publicly available
WHAT THE SPATIAL BOUNDARIES MEAN

• Local Assessment Area (LAA)
  The area within which the Project is expected to interact with and potentially have an effect on the VC

• Regional Assessment Area (RAA)
  Provides the regional context for the assessment of potential Project-related effects within the LAA.
  Includes the area within which the residual effects of the Project are likely to combine with the effects of other projects and activities to result in a cumulative effect

• Cumulative Effects Assessment Area
# ICS AND VCS – CASES DESCRIBED IN EIS

<table>
<thead>
<tr>
<th>Case</th>
<th>Described in EIS for:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Conditions</td>
<td>All ICs and VCs</td>
</tr>
<tr>
<td>Expected Conditions</td>
<td>Those ICs and VCs expected to be affected by current, ongoing projects</td>
</tr>
<tr>
<td>Future Conditions with the Project</td>
<td>All ICs and VCs</td>
</tr>
<tr>
<td>Future Conditions with the Project and Other Projects and Activities</td>
<td>All ICs, and VCs expected to be affected by the Project (after mitigation)</td>
</tr>
</tbody>
</table>
QUESTIONS?
PROPOSED INTERMEDIATE COMPONENTS

Presenter: Pamela O’Hara, Senior Project Manager Hemmera

Objective: To provide an overview of each proposed intermediate components including:
  • Rationale for selection as IC
  • Linkages to other ICs and VCs
  • Proposed study areas
PROPOSED INTERMEDIATE COMPONENTS

- Air Quality
- Noise and Vibration
- Light
- Coastal Geomorphology
- Surficial Geology and Marine Sediment
- Marine Water Quality
- Underwater Noise
- Population Demographics

PRELIMINARY INFORMATION SUBJECT TO REVISION

portmetrovancouver.com
Working Group #3 – May 27, 2014.
Purpose: To identify and quantify potential changes in air quality resulting from the proposed RBT2 Project.

Detailed presentation provided during WG#2
Rationale for IC selection:

- **Key interests and issues:**
  - Increased emissions from vessels, trains and vehicles
  - Cumulative effects from port development at Roberts Bank
  - Effects on future air quality to human health
- **Potential changes to air quality from fuel combustion in diesel, propane and gasoline-powered engines**
  - Federal, provincial and regional standards and criteria set for contaminants of concern
The assessment of Air Quality will include:

- Determination of approach to quantifying changes in air quality, through Air Quality Scoping Study process
- Identification and quantification of potential changes in air quality in construction and operation phases

PRELIMINARY INFORMATION SUBJECT TO REVISION
Purpose: To identify and quantify potential changes in noise and vibration resulting from the proposed RBT2 Project.

Detailed presentation provided during WG#2
Rationale for IC selection based on key interests and issues:

- Noise, low frequency noise, and vibration raised as issues within local area (noise survey)
- Project-related noise sources: construction activities, operation of diesel-powered equipment, and road and rail traffic
- Effects of noise and vibration on human health, birds, and marine commercial use
The assessment of noise and vibration will include:

- Results of survey of residents in the near Project area
- Effects of meteorology on sound propagation
- Models to predict noise levels ground-borne vibration levels for existing and future conditions
Purpose: To identify and quantify potential changes in light resulting from the proposed RBT2 Project.
Rationale for IC selection:

- Key interests and issues:
  - Disturbance and annoyance from existing port infrastructure
    - Gantry cranes
    - Blinking lights from other equipment
  - Increased light pollution
- The proposed Project may result in changes to light trespass and sky glow
LIGHT BASIS FOR PROPOSED SELECTION AS IC

• An analysis of potential changes to Light is required for other IC and VC assessments:

Project Interaction → Light → Marine Fish → Coastal Birds → Visual Resources
Areas with unobstructed views within 60-70 km of light source

Rationale:
- Final study area will be based on analysis of viewshed results
- Includes key land-based points of reception:
  - Vancouver west to Gulf Islands and south to Orcas Island

PRELIMINARY INFORMATION SUBJECT TO REVISION
MARINE PHYSICAL ENVIRONMENT AT ROBERTS BANK
EXISTING TOPOGRAPHY AND BATHYMETRY

Note: Vertical scale is 10 times horizontal scale
Purpose: To identify and quantify potential changes in coastal geomorphology resulting from the proposed RBT2 Project.
COASTAL GEOMORPHOLOGY
BASIS FOR PROPOSED SELECTION AS IC

• Coastal geomorphology - includes the physical environment and the physical processes that have created and maintain the physical form

• Rationale for IC selection:
  • Key interests and issues raised:
    • Cultural importance of land, water and resources
    • Effects to marine habitat and wildlife
  • Coastal Geomorphology Technical Advisory Group – early input from the scientific community on potential effects and assessment approach
  • Project interaction with wind-generated waves, tides, and sediment transport
An analysis of potential changes to Coastal Geomorphology is required for other IC and VC assessments:
COASTAL GEOMORPHOLOGY
PROPOSED STUDY AREA

Includes:
• Roberts Bank tidal flats from flood protection dykes to -60 m CD depth, and B.C. Ferries terminal to Canoe Passage.

Rationale:
• Includes the natural and human-made boundaries influencing sediment and water movements at Roberts Bank by waves, and river and ocean currents
• Area is adequate to inform other ICs and VCs
SURFICIAL GEOLOGY AND MARINE SEDIMENT STUDY

Purpose: To identify and quantify potential changes in surficial geology and marine sediment resulting from the proposed RBT2 Project.
Rationale for IC selection:

- Key interests and issues raised:
  - Changes to ecosystem health and species distributions
  - Effects to marine habitat and wildlife
- Project interaction from sediment re-suspension and distribution
- Surficial sediments provide habitat for marine VCs
SURFICIAL GEOLOGY AND MARINE SEDIMENT BASIS FOR PROPOSED SELECTION AS IC

• An analysis of potential changes to Surficial Geology and Marine Sediment is required for VC assessments:

  - Marine Vegetation and Biofilm
  - Marine Invertebrates
  - Marine Fish
  - Marine Mammals
  - Coastal Birds
  - Roberts Bank Ecosystem
  - Ongoing Productivity of CRA Fisheries
Roberts Bank tidal flats to -100 m CD depth, and B.C. Ferries terminal to Canoe Passage, plus tidal flat reference areas at Boundary Bay, Roberts Bank North and Sturgeon Bank

Rationale:

- Includes tidal flat and delta foreslope seabed areas in areas of project activities
- Area is adequate to inform marine biophysical VCs
Purpose: To identify and quantify potential changes in marine water quality resulting from the proposed RBT2 Project.
Rationale for IC selection:

Key interests and issues raised:

- Cultural importance of and effects to land, water and resources
- Effects to marine habitat and wildlife

Marine and estuarine waters provide habitat for marine VCs

The project has the potential to change water parameter concentrations and the distribution of fresh and marine water masses
An analysis of potential changes to Marine Water Quality is required for VC assessments:

- Marine Vegetation and Biofilm
- Marine Invertebrates
- Marine Fish
- Marine Mammals
- Coastal Birds
- Roberts Bank Ecosystem
- Ongoing Productivity of CRA Fisheries
- Outdoor Recreation
Roberts Bank tidal flats to -100 m CD depth, and B.C. Ferries terminal to Canoe Passage, plus tidal flat reference areas at Boundary Bay, Roberts Bank North and Sturgeon Bank

Rationale:
- Includes tidal flat and delta foreslope seabed areas in areas potentially affected by project activities
- Area is adequate to inform marine biophysical and social VCs
Purpose: To identify and quantify potential changes in underwater noise resulting from the proposed RBT2 Project.
Rationale for IC selection:

- Key interests and issues raised:
  - Behavioural disruption to marine mammals and influences on cultural use
  - Cumulative effects from port development at Roberts Bank
- Southern Resident Killer Whale (SRKW) Technical Advisory Group - importance of changes to ambient underwater noise levels
- Noise can have a range of effects on marine fish and marine mammals.
- SRKW and Humpback whales are both SARA listed species
• Analysis of potential changes to Underwater Noise is required for VC assessments:

Project Interaction → Underwater Noise

- Marine Fish
- Marine Mammals
Roberts Bank west to the Gulf Islands and within ~90 km north and south from the Project area.

Rationale:

- Area where project-related effects could potentially occur.

- Boundary limits based on marine mammal focal species zone of audibility for project-related activities that generate underwater noise.
Purpose: To identify and quantify potential changes in population demographics resulting from the proposed RBT2 Project.
POPULATION DEMOGRAPHICS
BASIS FOR PROPOSED SELECTION AS IC

• Population Demographics – analysis of population change as a result of direct as well as indirect and induced employment opportunities associated with the Project

• Rationale for IC selection:
  • Key interests and issues raised:
    • Labour demands during construction and operation phases may result in an increase in population in surrounding areas
    • Ensure balance of environmental, social and economic needs during project planning
  • Project-related workforce requirements and project spending on goods and services during construction and operation phases
Analysis of potential changes to population demographics is required for VC assessments:

- Labour Market
- Local Government Finances
- Services and Infrastructure
- Outdoor Recreation
- Human Health
Metro Vancouver with a focus on Corporation of Delta and Tsawwassen First Nation

Rationale:
• Corresponds directly with LAA for labour market as the existing local labour market will drive any population change
Intermediate components will inform other ICs and VCs
QUESTIONS?