Meeting #2
April 15, 2014
Morning session

(NOTE: contains preliminary information – may be subject to future revisions)
WELCOME AND INTRODUCTIONS

Presenter: Garry Alexander, Independent Facilitator
AGENDA

9:00-9:10  Welcome and Introductions
9:10-9:30  Working Group Process and WG #1 Recap
9:30-10:15 Introduction to Container Movement in the Pacific Gateway

BREAK

10:30-11:00 Container Movement at Roberts Bank
11:00-11:30 Pacific Gateway Transportation Infrastructure and Initiatives
11:30-12:00 Container Movement outside PMV Jurisdiction

LUNCH

1:00-1:30  Approach to the Environmental Assessment
1:30-2:30  Air Quality Study

BREAK

2:45-3:45 Noise and Vibration Study
3:45-4:00 Questions, Closing and Next Steps
HOUSEKEEPING

• Breaks and food
• Washrooms and exits
• Speaking protocol
• Meeting notes
WORKING GROUP PROCESS

Presenter: Garry Alexander, Independent Facilitator
Reminder of Goals:

- Participants to gain an increased awareness and understanding of the work undertaken by PMV for the RBT2 EA

- Opportunity for PMV to solicit input to be considered in the development of the Environmental Impact Statement (EIS)
WG #1 FOLLOW UP

• WG#1 (February 25, 2014) Meeting Notes
  • Draft March 14, 2014
  • Final April 9, 2014

• WG#1 presentation slides
  • Link to pdf within March 14, 2014 email

• WG Terms of Reference
  • Draft (h/c at February 25 mtg), email March 03, 2014
  • Final April 9, 2014
  • Update to WG#1 presentation slides
RECAP FROM WG#1

• WG #1 covered off the following main topics:
  • Port Metro Vancouver Overview
  • Roberts Bank Terminal 2 Project Description
  • EA Process Overview
  • Consultation to Date
  • Technical Advisory Group Process
  • Site Tour
RECAP FROM WG#1

During the WG #1, comments were provided on:

• EIS and Regulatory Process Related Topics
• Transportation Related Topics
  • Socio-economic effects on communities from traffic
  • Increases to projected container traffic in region
  • Local road network improvements
• Other Topics
  • Technical Advisory Group process and topics
  • SRKW recovery strategy
  • Aboriginal consultation process
RECAP FROM WG #1

• Based on comments from WG#1, WG#2 focus is on transportation related issues:
  • Container Movement in the Pacific Gateway
  • Container Movement within and outside PMV Jurisdiction
  • Pacific Gateway Transportation Infrastructure and Initiatives aimed to address concerns
  • Descriptions of RBT2 Studies:
    • Air quality assessment
    • Noise and vibration assessment
CONTAINER MOVEMENT IN THE PACIFIC GATEWAY

Presenter: Cliff Stewart, Port Metro Vancouver
INTERMODAL TRANSPORT – PRE 1960
THE TWENTY FOOT CONTAINER

One 20 Foot Container = 1 TEU.
One 40 Foot Container = 2 TEUs.
MODERN INTERMODAL TRANSPORT

9,500 TEU

2 TEU

400 TEU
TYPES OF CONTAINER TERMINALS
PORT METRO VANCOUVER

2013 Imports
1,507,992 TEUs

2013 Exports
1,317,483 TEUs
PORT-RELATED INFRASTRUCTURE
CONTAINER TRANSLOAD

Reduces Transportation Costs

40’ Marine Containers

53’ Domestic Containers

portmetrovancouver.com
Working Group #2 – April 15, 2014
CONTAINER TRANSLOAD

Increases Destination Efficiencies

Local Delivery

5%
CONTAINER FLOWS - EXPORTS
Port Metro Vancouver’s Role:

- PMV is focused on the operational needs of port users, and guided by a vision for long-term efficient growth and competitiveness.
- Most lands managed by PMV are federally owned.
- PMV manages marine infrastructure in a commercial manner, taking into account input from users and the community.
- PMV applies vessel, cargo, and passenger fees, and administration and user fees to the marine terminals (i.e. Tenants)
SUPPLY CHAIN RELATIONSHIPS & INTERESTS

Cargo Owners
Importers / Exporters

Shipping Lines (22)

Railways (2)

Off-Dock Facilities (25 Major)

Terminals (4)

Trucking Companies (193 FSO, 961 IO)

Contractual Relationships (Flow of Payments)

Operational Relationship (Service Level Agreement)

Contractual Relationships (No Service Level Agreement)
• 4 container terminals
• Extensive on-dock rail facilities
• Container handling capacity is 3.7 million TEUs
• Commodities include household goods, produce, machinery, wood pulp, lumber and metals
CONTAINER | VOLUMES – ALL TERMINALS

(in thousands of TEUs)

2.83 Million TEUs in 2013
CONTAINER CONTENTS – ALL PMV IMPORTS 2012

* Containerized tonnage is estimate, based on actual TEUs.
CONTAINER CONTENTS – ALL PMV EXPORTS 2012

- Lumber: 33%
- Woodpulp: 19%
- Meat, Fish & Poultry: 4%
- Metals: 4%
- Paper Products: 6%
- Specialty Crops: 14%
- Others: 20%

* Containerized tonnage is estimate, based on actual TEUs.
QUESTIONS?
CONTAINER MOVEMENT AT ROBERTS BANK

Presenter: Wade Major, WorleyParsons
Purpose – to describe anticipated traffic volumes at Roberts Bank without the RBT2 project (Baseline Year 2012), and with the RBT2 project (Year 2030).

Topics covered:

- Introduction to:
  - Terminal capacity, general traffic numbers, ship sizes, road traffic data, container truck data, container truck variables, and rail traffic.

- Roberts Bank Traffic – Net Change Predictions:
  - Terminal capacity, ship traffic, container truck traffic, other vehicle traffic, rail traffic.
TERMINAL CAPACITY

- Deltaport current annual capacity is 1.8 MTEU.
- The Deltaport Terminal Road and Rail Improvement Project (DTRRIP) will add ~0.6 MTEU of additional annual capacity, bringing Deltaport to 2.4 MTEU annually.
- General rule of thumb for current terminal configurations including equipment capability and operating practices is 0.8 MTEU per berth annually.
- RBT2 as a 3-berth container terminal will have a annual capacity of 2.4 MTEU.
- The combined capacity of Deltaport and RBT2 will be 4.8 MTEU annually.

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• Travel to and from the terminal is 2 movements:
  • 260 annual ship calls = 520 annual ship movements.
  • 500 trucks in and out per day = 1,000 truck movements.
  • 4 trains in and out per day = 8 train movements.

• Summary:
  • Ships                  Annual average
  • Container Trucks      Average day
  • Other Vehicles        Average day
  • Trains                Average day

• EIS will provide average and peak numbers.
• For brevity, this overview only speaks to averages noted.
Container ship sizes (TEUs):

- Currently 4,000 - 10,000
- Predicted 6,000 - 18,000

**RBT2** will be able to simultaneously accommodate 2 New Panamax, and 1 Triple E.
CONTAINER TRUCK VARIABLES

- Variables that affect volume and peaking characteristics:
  - TEUs per container (1.72 currently, trending to 1.75).
  - Rail modal split (65% rail / 35% truck).
  - Double-ended truck moves (37% currently).
  - Monthly, weekly, daily, hourly peaking factors.
  - Terminal gate hours (M-F 0700-1600, night gate as needed).
  - Each container truck carries between 1 and 4 TEU.
• Rail modeling performed using Rail Traffic Controller (RTC) model of the Greater Vancouver Rail Networks (GVRN).

• Trains move through a defined network and the model considers track speed, train length and weight, motive power, and signals, bridges, and train priorities.

• Rail model input assumptions included:
  • 2.4 MTEU annually per container terminal, 4.8 MTEU total.
  • 65% rail / 35% truck.
  • 53% import / 47% export.
  • 20% peaking factor.
RAIL TRAFFIC (2)

• Calculations created 39,000 feet per day of train per terminal on an average day.

• Arriving and departing trains had lengths varying between 8,000 and 12,000 feet.

• Each container train typically carries between 445 and 667 TEUs.

• Railway companies are trending toward running longer trains.
The difference in total traffic volumes at Roberts Bank between 2030 and the baseline year (2012), is defined as:

\[
\text{2030 Number} - \text{2012 Number} = \text{Net Change}
\]

The incremental traffic volumes attributed to RBT2 in 2030 relative to all future traffic is defined as:

\[
\text{2030 Number With RBT2} - \text{2030 Number Without RBT2} = \text{Net Change}
\]
TERMINAL CAPACITY
ANNUAL FOR 2012 AND 2030

2012 (MTEU)

2030 (MTEU)

Net Change (MTEU)

Without RBT2: 2.4
With RBT2: 4.8
Net Change: 2.4 (100%)

Total MTEU (2030)

WIDENED CAUSEWAY

MARINE TERMINAL

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SHIP TRAFFIC
ANNUAL SHIP MOVEMENTS FOR 2012 AND 2030

2012 (ship movements)
2030 (ship movements)
Net Change (movements)

Without RBT2: 15,798
With RBT2: 16,318
Net Change: 520 (3%)

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CONTAINER TRUCK TRAFFIC
DAILY AVERAGE FOR 2012 AND 2030, IN & OUT COMBINED

2012 (trucks)
2030 (trucks)
Net Change (trucks)

Without RBT2: 3,692
With RBT2: 7,384
Net Change: 3,692 (100%)

TOTAL (2030)

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OTHER VEHICLE TRAFFIC
DAILY AVERAGE FOR 2012 AND 2030, IN & OUT COMBINED

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Traffic</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>1,742</td>
<td></td>
</tr>
<tr>
<td>2030</td>
<td>2,092</td>
<td>710</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Traffic (2030)</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without RBT2</td>
<td>2,092</td>
<td></td>
</tr>
<tr>
<td>With RBT2</td>
<td>3,834</td>
<td>1,742 (83%)</td>
</tr>
</tbody>
</table>

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RAIL TRAFFIC
DAILY AVERAGE FOR 2012 AND 2030, IN & OUT COMBINED

2012 (trains)
2030 (trains)
Net Change (trains)

Without RBT2: 21
With RBT2: 29
Net Change: 8 (38%)
QUESTIONS?
SCOPE OF TRANSPORTATION WITHIN RBT2 EIS

Presenter: Kyle Robertson, Port Metro Vancouver
• The scope of the Project is articulated in the Final EIS Guidelines (January 7, 2014)
• The scope of the Project includes: “the marine, road, and rail transportation within the areas for which the proponent has jurisdiction”
• The scope of the Project for traffic activity during operations includes the marine terminals and waters within PMV jurisdiction, and the Roberts Bank causeway.
• A description of the vessel, road and rail transportation associated with the movement of materials, equipment, and personnel to and from the Project site during construction will also be included.
• Concerns have been raised regarding road and rail traffic activities in the Pacific Gateway that are not included within the scope of the Project as determined by the federal Minister.

• PMV recognizes the need to continue working with Gateway Stakeholders to identify shared emerging and future transportation infrastructure needs in key goods movement corridors.
• Port Metro Vancouver, the Ministry of Transportation and Infrastructure, Transport Canada, our Municipal partners, TransLink, and other supply chain stakeholders and funding partners have achieved major results by working together to address transportation infrastructure needs associated with the expansion of our Asia-Pacific Gateway.

• Our combined commitment to identifying and resolving concerns relating to growing transportation infrastructure needs have produced highly successful solutions and projects of which we can all be proud.

• The following section describes some of the key initiatives and infrastructure either completed or underway in the Asia-Pacific Gateway.
Presenter: Kyle Robertson (for Dennis Bickel, Manager, Transportation Planning, Port Metro Vancouver)
GATEWAY TRANSPORTATION INFRASTRUCTURE AND INITIATIVES

• **Purpose**: To summarise PMV’s involvement in infrastructure and transportation initiatives and partnerships within the Pacific Gateway to enable sustainable growth

• **Topics**:
  • Operational challenges and public concerns
  • PMV’s Transportation-Related Initiatives
  • Regional Transportation Plans & Strategies
  • Description of gateway infrastructure
Operational challenges:

• Achieving consensus on preferred operating hours
• Visibility into performance metrics for truckers and terminal operators
• The lack of a common appointment system or portal to establish standards, facilitate visibility of empty container sourcing, and support trip planning

Public Concerns:

• Congestion (wait times / frequency)
• Emissions causing air pollution
• Safety concerns
• Noise & vibration impacts
PMV’S TRANSPORTATION-RELATED INITIATIVES

• PMV has a tradition of innovation, accountability and leadership.
• Past and ongoing examples of PMV-led Gateway transportation initiatives and projects to address key concerns include:

- Smart Fleet Trucking Strategy
- Noise Monitoring Program
- EcoAction Program
- Shore Power Initiative
- Landside Air Emission Inventory
- Non-Road Diesel Emission Initiative
- Northwest Ports Clean Air Strategy
- Truck Licensing System

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- Northwest Ports Clean Air Strategy
- Truck Licensing System
• Increasing environmental requirements
• Opacity and idling limits
• Phasing out older, dirtier trucks
• Equivalent particulate matter of 2007 truck or newer by 2017
SMART FLEET TRUCKING STRATEGY

- A 3-year action plan to drive efficiency, reliability and long-term sustainability in the container trucking sector
- The Clean Transportation Initiative identifies technology-based solutions to improve sustainability:

<table>
<thead>
<tr>
<th>INITIATIVE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPS Pilot Program</td>
<td>Improved tracking (to date, GPS on 1000 trucks)</td>
</tr>
<tr>
<td>Container Drayage Leadership Team</td>
<td>A forum for terminal operators and industry leaders to work openly to solve challenges</td>
</tr>
<tr>
<td>Container Vessel On-Time Incentive</td>
<td>Encourages container vessel operators to arrive on schedule</td>
</tr>
<tr>
<td>Common Reservation System</td>
<td>Planning tool to increase truck utilization and revenue generating trips per day</td>
</tr>
<tr>
<td>Truck Licensing System Review</td>
<td>To enhanced performance, safety and environmental standards</td>
</tr>
</tbody>
</table>
SHORE POWER INITIATIVE

- First Port in Canada to implement
- Ships can shut down engines and connect to electrical grid when docked
- In 2012 60 vessels plugged in
- Reduction of 2,266 tCO2 in 2012
- Plans to retrofit Deltaport third berth
• To determine how much noise is attributable to port operations compared with other community noise sources.
• Helps identify the source to determine if operational improvements can be made.
• Recently installed on both the North and South Shores of Burrard Inlet, plans for Roberts Bank underway
NON-ROAD DIESEL EMISSION INITIATIVE

- Developed to reduce diesel particulate matter emissions from non-road equipment and cargo-handling equipment operating within PMV's jurisdiction
- Program effective January 1, 2015
- Aims to advance idle reductions and clean technologies in non-road diesel equipment (i.e. forklifts, cranes, yard trucks, construction equipment)
• Reduced harbour fees for ocean-going vessels with lower emissions
• Incentivizes low sulphur fuels and other reduction options
• Blue circle award recognizes highest participation in Program
• PMV led the development of a port landside emissions inventory of common air contaminants, and GHGs with support from Environment Canada and Metro Vancouver.

• The Phase One report included emissions from cargo-handling equipment, trucks and rail along Burrard Inlet and Roberts Bank.

• Inventories in 2005 and 2010
• Collaboration with Ports of Seattle and Tacoma
• To reduce port-related emissions affecting air quality and climate change in Pacific Northwest
• Annual implementation reports
To address these concerns, PMV collaborates on a number of Gateway Transportation plans and strategies, including:

**Fraser River Transportation Plans**
- Fraser-Richmond Port Area Transportation Plan
- Fraser-Surrey Port Area Transportation Plan
- Rail Network Improvements

**Regional Transportation Strategy**
- Strategic framework with goals, directions, key initiatives and principles for the system for the next 30 years
GATEWAY INFRASTRUCTURE

• Key Gateway infrastructure include:

  • Deltaport Terminal, Road and Rail Infrastructure Project (DTRRIP)

  • Roberts Bank Rail Corridor (RBRC)

  • Other Gateway Infrastructure in the Region
DELTA PORT TERMINAL ROAD AND RAIL IMPROVEMENT PROJECT

- Increase capacity to 2.4 million TEUs at Deltaport
- Implemented mostly within the existing terminal, road and rail footprint
- Project Cost: $200 million
- Provincial Contribution: $50 million
- Estimated Completion: 2016
- Construction employment: 400 jobs per year for a three-year construction period.
- Total jobs from DTRRIP: 5,000-5,500
Roberts Bank Rail Corridor

- $307m funded by collaboration of 12 partners
- 9 projects and one Intelligent Transportation System (ITS)
- Scheduled completion 2014
- Improves traffic, safety, noise, air quality
ROBERTS BANK RAIL CORRIDOR
• South Fraser Perimeter Road (completed 2013)
• Port Mann Bridge
• New Westminster Rail Bridge
• George Massey Tunnel
• Pattullo Bridge
• Westminster Hwy and Nelson Road Widening
• Intersection Improvements (e.g. Chester Road, Nordel Way, etc)
• Regional Transportation Management Centre
• The pending completion of existing infrastructure projects provides another opportunity for all partners to come together in a coordinated way to identify and address transportation infrastructure needs that will support regional development and future gateway expansion.
• Building on these success, PMV, with support from the BC MOTI, will be developing a framework for engaging with the partner agencies and will facilitate discussions that allow all involved parties to:

• identify shared emerging and future transportation infrastructure needs in key goods movement corridors;

• develop criteria for establishing priorities and shared solutions for infrastructure needs; and,

• identify funding sources that could support development of infrastructure including, but not limited to, the New Building Canada Plan.

• PMV will be looking to convene a meeting with all key stakeholders shortly.
QUESTIONS?
CONTAINER MOVEMENT OUTSIDE PMV JURISDICTION

Presenter: Wade Major, WorleyParsons
To support future discussions amongst involved parties, this section describes anticipated movement of containers (by vessels, trucks, and trains) and other traffic outside PMV’s jurisdiction for two scenarios:

- Without the RBT2 project (Baseline Year 2012); and
- With the RBT2 project (Year 2030).

Topics covered:

- General assumptions
- Regional ship traffic
- Regional road traffic
- Regional rail traffic
GENERAL ASSUMPTIONS

- Existing traffic data collected from:
  - MOTI counts.
  - TransLink counts.
  - Municipal counts.
  - SFPR project counts.
  - George Massey Tunnel Replacement project counts.
  - Previous reports.

- Background traffic estimated using latest version of TransLink’s Regional Travel Demand Model.

- Site-specific traffic from Roberts Bank, and Tsawwassen First Nation development plans has been superimposed onto the background traffic.
• 2008 origin-destination survey and update produced baseline.
• Validated by GPS samples for George Massey Tunnel in April, May, and June 2012.
• Also validated for George Massey Tunnel using traffic counts as part of Tsawwassen First Nation development study.
REGIONAL SHIP TRAFFIC
AVERAGE ANNUAL SHIP CALLS FOR 2030

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Table:

<table>
<thead>
<tr>
<th>Average Annual Ship Calls in Year 2030</th>
<th>Without BRT2</th>
<th>With BRT2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Vessels Transiting Near Roberts Bank</td>
<td>11,345</td>
<td>11,607</td>
</tr>
<tr>
<td>BC Ferries</td>
<td>7,274</td>
<td>7,274</td>
</tr>
<tr>
<td>Total Container Ships</td>
<td>3,015</td>
<td>3,027</td>
</tr>
<tr>
<td>Container Ships (Not Calling on Roberts Bank)</td>
<td>503</td>
<td>503</td>
</tr>
<tr>
<td>Container Ships (Calling on Roberts Bank)</td>
<td>312</td>
<td>572</td>
</tr>
<tr>
<td>Roberts Bank Container Ships (% of Total)</td>
<td>3%</td>
<td>5%</td>
</tr>
<tr>
<td>Roberts Bank Container Ships (% of Total - Excluding BC Ferries)</td>
<td>8%</td>
<td>13%</td>
</tr>
<tr>
<td>Roberts Bank Container Ships (Increase)</td>
<td>0</td>
<td>260</td>
</tr>
</tbody>
</table>

Note: 1 Ship Call = 2 Ship Movements
REGIONAL ROAD TRAFFIC - NET CHANGE PREDICTIONS

• For Regional road traffic:
  • Without RBT2
    • RBT2 Container Trucks Column B
    • RBT2 Cars & Other Port Vehicles Column C
    • Total RBT2 Traffic Column D (sum of B and C)
  • With RBT2
    Column E (sum of A and D)
  • Net Change (%) due to RBT2
  • % of all traffic due to RBT2

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D = B + C</th>
<th>E = A + D</th>
<th>F = D / A</th>
<th>G = D / E</th>
</tr>
</thead>
<tbody>
<tr>
<td>29,388</td>
<td>3,692</td>
<td>1,552</td>
<td>5,244</td>
<td>34,632</td>
<td>17.8%</td>
<td>15.1%</td>
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</tbody>
</table>
REGIONAL ROAD TRAFFIC
AVERAGE DAILY MOVEMENTS FOR 2030

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REGIONAL RAIL TRAFFIC - NET CHANGE PREDICTIONS

• For Regional Roberts Bank Rail Corridor (RBRC) rail traffic:
  • Without RBT2 Column A
  • With RBT2 Column B
  • Net Change due to RBT2 Column C (B minus A)
  • Net Change (%) due to RBT2 Column D (C / A * 100%)
  • % of all trains due to RBT2 Column E (C / B * 100%)

<table>
<thead>
<tr>
<th>Without RBT2</th>
<th>With RBT2</th>
<th>Net Change Due To RBT2</th>
<th>Net Change (%) Due To RBT2</th>
<th>% Of All Trains Due To RBT2</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
<td>C = B - A</td>
<td>D = C / A</td>
<td>E = C / B</td>
</tr>
<tr>
<td>21</td>
<td>29</td>
<td>8</td>
<td>38%</td>
<td>28%</td>
</tr>
</tbody>
</table>
# Regional Rail Traffic

## Average Daily Movements for 2030

### Average Day Train Movements in Year 2030

<table>
<thead>
<tr>
<th>Rail Segment</th>
<th>Without RBT2</th>
<th>With RBT2</th>
<th>Net Change Due To RBT2</th>
<th>Net Change (%) Due To RBT2</th>
<th>% Of All Trains Due To RBT2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roberts Bank Terminals to Mud Bay Junction</td>
<td>21</td>
<td>29</td>
<td>8</td>
<td>38%</td>
<td>28%</td>
</tr>
<tr>
<td>Mud Bay Junction to Pratt Junction</td>
<td>16</td>
<td>24</td>
<td>8</td>
<td>50%</td>
<td>33%</td>
</tr>
<tr>
<td>Pratt Junction to Livingstone Junction</td>
<td>19</td>
<td>27</td>
<td>8</td>
<td>42%</td>
<td>30%</td>
</tr>
<tr>
<td>Livingstone Junction to Hydro Junction</td>
<td>16</td>
<td>24</td>
<td>8</td>
<td>50%</td>
<td>33%</td>
</tr>
</tbody>
</table>

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*Working Group #2 – April 15, 2014.*
QUESTIONS?