**PATH – PRE FEASIBILITY STUDY PROJECT BRIEF**

**PROJECT OVERVIEW**

The Port Alberni Port Authority (PAPA) is pursuing a strategic opportunity to develop a new container trans-shipment hub in the Alberni Inlet to enhance capacity and create greater efficiencies, resiliency and environmental benefits throughout the Asia-Pacific Gateway.

The Port Alberni Trans-Shipment Hub (PATH) is envisioned to become a modern, fully automated container terminal, able to efficiently handle any size vessel, including new Ultra Large Container Ships up to 22,000 TEU’s. This project would create one of the largest container terminals in Canada.

PATH is premised on a hub and spoke container trans-shipment model, which has been used successfully throughout Europe and Asia. The primary focus of PATH as the “hub”, is to service the “spokes”, the container handling facilities in Salish Sea area (“lower mainland and Puget sound) with dedicated cellular barges. The barges will deliver pre-sorted cargo at the right time and at the closest point to the end destination. In addition PATH conceptually envisions servicing Vancouver Island’s “captive” market and ever growing business and population base. PATH also provides an opportunity to service coastal trade; providing an opportunity to combine Pacific Northwest and Pacific Southwest service in one.

As envisioned, PATH provides an opportunity to truly expand and maximize the use of our “marine highway”.

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**Socio & Economic Impact Benefits**

- Increase Canada GDP by $21.3 B
- Full Time Equivalent (FTE) jobs would be 288,079 in Canada
- Increase Tax Revenue $1,6B
- Reducing 14.4 million truck-kilometers annually
- Reducing commuter’s time in George Massey Tunnel alone by 98,750 hours; time and fuel savings by at least $ 6 mill. p/a
- Total Positive impact on social structure of $74.6 Million p/a
- Relieves pressure from Lower Mainland already congested transportation infrastructure

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The Pre-Feasibility study, which was equally funded by Transport Canada and PAPA, was completed by a multi-disciplinary team of industry leaders to assess technical, economic, logistics, social and environmental opportunities and impacts related to PATH.
PRE-FEASIBILITY ASSESSMENT AND HIGHLIGHTS

Engineering studies undertaken have included operational planning; evaluation of potential sites; preliminary design; and the development of first order of magnitude capital cost estimates. Two suitable sites have been identified in Alberni Inlet and preliminary layouts were developed. Optimization of each site configuration has occurred to balance functional layout and construction cost to achieve a first order of magnitude total cost estimate from “first shovel to first container” at approximately $1.7B.

An analysis of navigation issues, such as channel characteristics and open sea wave, current, wind and weather conditions associated with “short sea” tug and barge container operations in Alberni Inlet was completed. While challenging navigation conditions occur from time to time along the proposed shipping routes, appropriately sized and configured tugs and barges, combined with standard operating procedures, allow navigation issues to be effectively managed.

The Pre-Feasibility Assessment included a review of potential markets, strategic and business requirements, and potential logistics cost advantages of the PATH concept. Under a PATH Single Port of Call scenario, it is estimated that the typical rotation (Asia-Vancouver-Seattle) of an ocean shipping line would be reduced by as many as three to four days and generate an estimated net savings for the shipper of $540,000 (time and fuel) for each vessel call. An analysis of supply chain (handling charge) price differential between PATH and status quo concepts was also considered. As this model was evaluated it was determined that the single port of call model offers an opportunity to achieve significant savings in overall transportation costs. Very high level estimates are that PATH has room to charge at least $205 per TEU for lower mainland cargo, $114 per TEU for intermodal cargo and more than $500 per TEU for Vancouver Island Cargo and not surpass cost incurred in the present model.

An overview screening of environmental characteristics and resources of potential sites and the marine transportation corridor was undertaken to identify possible constraints and risks to developing PATH. Minor terrestrial environmental constraints were identified. Higher level of risk to aquatic resources occurs at both locations. The marine transportation corridor of Trevor Channel (Barkley Sound) is environmentally sensitive and important as habitat for marine mammals, birds, fish and vegetation. Trevor channel and area is used as a main transportation corridor for Port Alberni for a number of decades and has developed to coexist in harmony with environment.

ENVIRONMENTAL IMPACT REDUCTIONS/SAVINGS

- 22,000 Tons of CO2
- 470 tons of Nitrogen Oxides
- 16 tons of Sulfur
- 8 tons of PM25
- 14.5 million truck kilometers
- Reduce wear and tear on the municipal infrastructure

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**KEY ADVANTAGES AND BENEFITS OF PATH**

PATH is expected to generate considerable advantages and benefits for communities, residents and businesses of Vancouver Island and BC’s Lower Mainland, marine shippers and Asia-Pacific trade in support of the entire Canadian economy. Highlights of such benefits include but are not limited to:

- Broader and more direct distribution of containers to coastal and inland terminals, reducing congestion and potential conflicts from truck transportation (drayage) on local roads, and improving air quality

Additional and cost-efficient automated container terminal and handling capacity to support growing Asia-Pacific trade and the Government of Canada’s Asia-Pacific Gateway and Corridor Initiative

**Benefit of Consolidating PNW Services Using PATH**

<table>
<thead>
<tr>
<th>Class</th>
<th>Effective TEUs</th>
<th>Voy Cost ($mil)</th>
<th>Cost Per TEU</th>
</tr>
</thead>
<tbody>
<tr>
<td>6000</td>
<td>5,600</td>
<td>$2.92</td>
<td>$522</td>
</tr>
<tr>
<td>8000</td>
<td>7,091</td>
<td>$3.55</td>
<td>$500</td>
</tr>
<tr>
<td>Combined</td>
<td>12,691</td>
<td>$6.47</td>
<td>$510</td>
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Alternate: PATH - Service Design 2  

| Savings Per TEU | $143 |

“This analysis shows that deployment of a single string of 13000 TEU ships in lieu of 6000 and 8000 TEU strings would generate a vessel network cost savings of $143 per round trip TEU. If the use of the PATH system was what allowed the deployment of 13,000 TEU ships in the Asia-PNW trade (because the ships could not otherwise be deployed on a direct call basis), then this savings can be attributed to the PATH system, greatly increasing the network savings attributable to PATH.”

**DIRECT COST BENEFITS**

- Reduced Ocean Shipping Cost
- Reduced Trucking Cost
- Reduced Terminal handling Cost
- Reduced Drayage Cost
- Reduced Land Transportation Cost
- Reduced Transportation Cost for Vancouver Island

**QUANTIFIABLE BENEFITS**

- Strengthen Canada’s Gateway Resiliency and Stability
- Innovative approach to marine transportation
- Increase competitiveness of the Gateway
- Allows development and better use of the new and existing port facilities
- Provides more options for port users
- Opportunity to capture more cargo destined to US
- Opportunity to have coastwise transportation link

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Ability to accommodate Ultra-Large Container Ships at a specifically designed, purpose-built facility and attract additional container volumes through Gateway.

<table>
<thead>
<tr>
<th>Service</th>
<th>#Ships</th>
<th>Class</th>
<th>Capacity</th>
<th>Distance</th>
<th>Speed</th>
<th>Port Hours</th>
<th>Vsl$</th>
<th>Port$</th>
<th>Fuel$</th>
<th>Total$</th>
<th>Voy</th>
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<tr>
<td>SERVICE DESIGN 1</td>
<td>6</td>
<td>5,600</td>
<td>12,118</td>
<td>15.3</td>
<td>90</td>
<td>96</td>
<td>186</td>
<td>228</td>
<td>45</td>
<td>248</td>
<td>532</td>
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<td>236</td>
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<td>29</td>
<td>179</td>
<td>366</td>
<td>5,997</td>
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“This analysis indicates that a meaningful reduction in mainline vessel slot costs could be achieved through the combination of PNW and PSW markets using the PATH terminal. As outlined above, a carrier or carrier group that combined a 6000 TEU class PNW string with an 8000 TEU class PSW string into a single 13000 TEU class service for both markets, could reduce its average slot costs from about $535/TEU to about $494/TEU, a savings of about $41/TEU slot for the roughly 12,000 TEU slots on the service. Annual savings from this network change would thus amount to about $25 million. If the savings applied to the 5600 TEUs per week of capacity previously dedicated to the PNW, the savings per TEU is about $96/TEU. While not all carriers and shippers would be equally willing to consider a ½ day transit extension for California cargo, it seems that such a service design could be feasible.”

Gateway resiliency, sustainability and diversity

Employment and business growth for local and regional communities

Reduced shipper costs for expensive land and drayage associated with terminals, warehousing and distribution centers.

Unlocking Land and Gateway Potential Upstream of the Fraser River, Puget Sound and Vancouver Island.

MARSEC Security

“Path provides clear potential for further economic development for Vancouver Island, Lower Mainland and Puget Sound. Such seismic change in the way of distributing containers would provide new and innovative opportunities for producer’s shippers and carriers “

PATH Technical Specs

- 250 acres
- 2 Main Berths - 1500 m
- 3 Barge Berths
- 14 Ship Cranes- Dual hoist/trolley
- 6 Barge Cranes – Dual hoist
- 43 Yard Cranes - ASC
- 135 yard truck/robots – AGV – battery operated
- 8 gate cranes
- All equipment -electrical

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SOCIAL LICENCE
- Support from Local First Nations
- Support From local Government
- Support from Provincial Government
- Support from Federal Government
- Support from Vancouver Island
- Support from Lower Mainland municipalities
- Community at large support
- Industry support
- Labor Support