

GREATER VANCOUVER SHORT-SEA CONTAINER SHIPPING STUDY

PRE-FEASIBILITY REPORT



Submitted by the Consulting Team of:

NOVACORP INTERNATIONAL - Vancouver

in association with

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with specialist sub-contracting firms:

Royal LePage Advisors Inc. - Vancouver

and

Trow Associates - Vancouver

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Transport
Canada

Transports
Canada



Burrard Inlet
Environmental
Action
Program



Fraser River
Estuary
Management
Program

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EXECUTIVE SUMMARY

The Situation

Greater Vancouver is home to one of the largest ports in North America and some of the most modern container terminals in the world. The trans-Pacific container trade has grown dramatically in recent years, and this growth is not expected to subside significantly over the next two decades. Container handling facilities on the Lower Mainland are, accordingly, being expanded and developed to capitalize on this major market opportunity and the considerable economic benefits it represents. The region's container terminals are well positioned to capture a large share of the growth in container imports from and exports to Asia.

Container terminals in Greater Vancouver include those located in Vancouver's Inner Harbour, at Roberts Bank in Delta and Fraser Surrey Docks in Surrey. Combined, these facilities handled 2 million TEUs (twenty-foot equivalent units) in 2004, an increase of more than 11% from 2003. With capacity expansion and new terminal development, the area's container terminals are expected to handle 4.3 million TEUs within six years, an annually compounded growth of 13.7%. Throughput is expected to nearly triple by 2020 to 5.8 million TEUs. Business expansion of this magnitude has extremely important economic and transportation system implications.

The Issue and The Opportunity

Containers, and the goods they carry, must move efficiently throughout the supply chain. It is simply not enough to process containers effectively at the terminal. The most efficient rail and road transportation infrastructure must also be in place to move containers and their cargoes to and from their ultimate destinations throughout North America.

Currently, about 65% of Greater Vancouver's containers leave or arrive at the deep-sea terminals by rail. The remaining 35% are transported within the region by truck to a wide variety of container industry businesses. These ratios are not expected to change dramatically in the future as major throughput expansion occurs. This study focused on those containers which are transferred intra-regionally by truck. Intra-regional container transport demand is projected to more than double in six years and triple within 16 years.

Greater Vancouver's road and highway network is becoming more congested, especially during peak periods and primarily because of increasing commuter traffic. Despite the major road transportation improvements planned on the Lower Mainland, trucking companies are expected to face increasing challenges in the future to move containers in a timely manner and at reasonable rates.

The proponents of this study have had the foresight to assess the potential for transporting some intra-regional container traffic via tug and barge (i.e. “short-sea” service) to and from the myriad of container businesses already located within the region. The ability to do so is somewhat unique in Greater Vancouver, and potentially possible, given the navigable Fraser River and its access to many industrial areas. Short-sea container operations have proven to be successful in many parts of the world, especially in Europe and Asia. Determining the likely commercial viability of such a network connecting the Lower Mainland’s container terminals with remote short-sea terminals and nearby container businesses along the Fraser River was the fundamental objective of this study.

Proponents of Short-Sea Container Service

Since short-sea container transfer within Greater Vancouver does not presently take place, the industry is just ‘warming up’ to the concept. The work undertaken went a long way to instill interest within the private sector, and several companies are interested in discussing the opportunity further.

The current study was conceived and funded cooperatively by the following organizations:

- Vancouver Port Authority (VPA);
- Fraser River Port Authority (FRPA);
- Fraser River Estuary Management Program (FREMP); and
- Transport Canada.

Each of these proponents is keenly aware of the potential benefits of short-sea container service and very interested in the results of the work and the direction they provide.

An Overview of the Work Carried Out

This pre-feasibility study was carried out by Novacorp Consulting Inc. of Vancouver in association with JWD Group (Oakland), Royal LePage Advisors (Vancouver) and Trow Associates (Vancouver). The research and analysis focused on the following:

- Prospective site areas along the Fraser River which might reasonably support commercially viable short-sea container terminals within the next several years, and the key operational and market factors for container barge terminal location;
- Preliminary operating and capital cost analyses for short-sea operations on “priority” routes;
- The operational practicality of the proposed short-sea service and how it might be configured (i.e. equipment, short-sea terminals, integration with deep-sea terminals, etc.);
- The conditions under which commercially viable (i.e. fully private sector operated, profitable and non-subsidized) short-sea container services might be established;
- The prospective markets for these services, their competitive positioning relative to truck transport (i.e. advantages and disadvantages) and the conditions under which markets, and more particularly customers, might be successfully secured; and

- A preliminary comparison of the greenhouse gas emissions for trucking and short-sea transport of containers to identify any possible environmental benefits from barging.

Conclusions

The results of the work were revealing and provide reliable and practical guidance and direction for those private and public sector organizations who may wish to pursue the opportunity. A summary of the principal conclusions reached by the Consulting Team is included below:

- **Intra-regional short-sea container shipping in Greater Vancouver offers promising, commercially viable, private sector opportunities in the short to medium-term for several short-sea container terminals on the Fraser River ... specifically in the Fraser Surrey area, the Tilbury Island area and the Coast 2000 area ... if route volume can be secured in the range of 200 containers per round trip or greater (i.e. a minimum of 20,000 to 40,000 containers annually).**
- **It is critical for short-sea container terminals to be strategically located close to (or have sufficient land to establish) a variety of container industry facilities and businesses and to have, on-site or nearby, rail inter-modal capability.**
- **The ‘target market’ (i.e. intra-regional container transfer) share required to support commercially viable short-sea operations is quite small (i.e. 4 ½% to 9% of current -2004 - demand and 2% to 4% of demand in 2010). It is expected that short-sea operators will need to secure 45% to 60% of the current container transfer business located close-by in the Fraser Surrey, Tilbury or Coast 2000 areas (and/or 20% to 30% of the same local area market in 2010) to maximize their opportunity for commercial success.**
- **Given the likely competitive positioning of short-sea shipping, it is expected that the levels of market share described in the previous paragraph are achievable for the locations specified.**
- **Short-sea container shipping, on selected routes with sufficient volume, can offer price competitiveness with trucking and some competitive advantages, which will likely expand dramatically over time, in the areas of delivery time and delivery time reliability.**
- **It will be critical for short-sea service investors and proponents to invest the capital and make the long-term commitment necessary to establish reliability and confidence in the market place.**
- **It will be critical for the short-sea operator to secure sufficient base, container transfer volume commitments from nearby importers, exporters, agents and/or logistics companies to approach the annual volume ‘threshold’ levels required for commercial success. These levels are relatively low and can likely be achieved in the Fraser Surrey, Tilbury Island and/or Coast 2000 areas over the next year or two.**
- **Expected increases in environmental emissions from the intra-regional transfer of containers by truck will be moderated to the extent that short-sea operations absorb some of the future growth. This is particularly true of the key greenhouse gas emission (CO₂) as well as VOC emissions.**
- **More detailed work is required before investors can be expected to commit to the opportunity, but the promotion of, and transfer to, the private sector can likely be achieved within six months. There is genuine private sector interest in this opportunity.**