



North Shore Trade Area logistics infrastructure positioned for growth

By Darryl Anderson
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The big yellow sulphur pile at Kinder Morgan's Vancouver Wharves provides a cheery greeting to Stanley Park tourists and serves as a sign to mariners that they are entering a powerhouse bulk cargo region. Combined, the eight marine terminals located on the north side of Vancouver's Inner Harbour handled approximately 35 million tonnes of cargo in 2017. When the North Shore Trade Area Study was commissioned almost 10 years ago as part of Canada's on-going effort to support the Asia-Pacific Gateway and Corridor Initiative, the study's ultimate goal was to assess the transportation and infrastructure conditions to determine the transportation infrastructure improvements required to accommodate and enhance with the least social, community and environmental impacts. Needless to say, it worked.

The initiative catalyzed the federal-provincial, port authority and regional stakeholder collaboration required to see the projects through from inception to implementation. Public sector entities included Transport Canada, the Port of Vancouver, the British Columbia Ministry of Transportation and Infrastructure, TransLink and the Greater Vancouver Gateway Council, the District of West

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Vancouver and the Squamish Nation. Private sector parties included Canexus Chemicals Canada Ltd. Partnership, Cargill Ltd., Fibreco Export Inc., Neptune Bulk Terminals (Canada) Ltd., Richardson International, Univar Canada Ltd., Washington Marine Group and Western Stevedoring Company Ltd.

Peter Xotta, Vice-President, Planning, and Operations, Vancouver Fraser Port Authority, observed that the development of the port's railway model was instrumental in securing the necessary federal funding. The \$283-million investments enhanced rail and port operations, improved access to terminal facilities for commercial traffic, and reduced congestion on the local road network.

When the last of six North Shore Trade Area projects were completed in 2015, it marked a turning point for international trade. The upgrades laid the foundation for the North Shore trade area's present, unprecedented level of private sector marine terminal investment. Therefore, this article will focus on the generational

infrastructure and logistics improvements positioning the area for future growth.

Bulk liquid cargo investment

The 125 acres that make up Vancouver Wharves handles more than four million tonnes of inbound and outbound bulk cargo annually. The dry bulk commodities of mineral concentrate from B.C. mines and smelters, sulphur exports and agricultural products are the most visible traffic. However, since 2009, the facility has also specialized in diesel and biodiesel import and export. With construction scheduled to start in September 2018, a \$32-million Diesel Handling Facility Expansion Project is anticipated to be operational in late 2020. The capital investment will lead to a very modest increase in vessel traffic with 12 ships and 24 barge visits annually.

Univar Canada Ltd.'s North Vancouver Distribution Centre (NVDC) is a bulk liquid chemical marine terminal. It handles caustic, glycols and ethanol and transfers via truck, rail, barge and vessel. Since 1979, Western Stevedoring has



The iconic yellow hills of sulphur at Kinder Morgan's Vancouver Wharves signal the start of the North Shore Trade Area.

been the labour contractor. Over the last few years, the facility has upgraded their fender system, replaced timber piles and refitted their ethanol storage tank.

At the April 2018 North Shore Environmental Community Advisory Panel meeting, Robin Lee, Terminal Manager for NVDC, advised that the site is operating with steady volumes. Univar is hoping to add some additional rail track but it still requires some internal and external approvals according to Lee.

Chemtrade completed the acquisition of Canexus Corporation in 2017. The North Vancouver facility has sodium hydroxide and hydrochloric acid production plants. In 2009-2010, the infrastructure profited from a major technology upgrade that brought the facility to a state-of-the-art operation. Other improvements have included the brine treatment area containment project, marine structural repairs and two phases of bulkhead wall repairs and rehabilitation. Class 1 railway service is vital to even the smaller marine terminals as evidenced by the fact that Rob Schultz, Chemtrade Logistics, advised the North Shore Environmental Community Advisory Panel in April 2018 that, due to limited railcar supply from CN, the plant was currently operating at reduced production rates.”

Steelmaking coal investment

Neptune Bulk Terminals (Canada) Ltd. is a joint venture of bulk commodity handlers, including Teck Resources Ltd., Canpotex Bulk Terminals Ltd., and Bunge Canada. Since 1970, the 71-acre facility has handled potash, coal, bulk vegetable oils, fertilizers and agricultural products.

Neptune Terminals is presently upgrading their steelmaking coal handling capacity. Construction began on July 20, 2018, and is expected to take until August 2020. The purpose of the upgrade is to increase throughput and improve coal operations. The equipment includes a new coal train dumper building at the east end of the site, which tips the coal from incoming rail cars onto a series of new conveyors.

In May 2014, a Port of Vancouver project permit was extended until January 2020. The amendment relates to a re-design and replacement of the west quadrant shiploader (at Berth 1), another mooring

dolphin and a gangway at the west end. The replacement shiploader includes a longer reach and more modern discharge chute, reducing particulate emissions during the loading process and allowing more complete loading of a ship’s holds as ships trend larger. The replacement shiploader includes 72 additional in-water piles to support the increased weight of the new loader.

Donald R. Lindsay, President, CEO & Director of Teck Resources Ltd. stated on the company’s first quarter 2018 earnings call, “We are accelerating planned upgrades to the Neptune Bulk Terminals facility...we’ll now spend approximately \$120 million this year versus the \$85 million we had disclosed before.” Lindsay stated on the company’s July 26, 2018, second quarter 2018 earnings call that “board approval for the Neptune Expansion Project has been given.” The total cost to the project, including what Teck has spent to date, is \$345 million.

The upgrades will take Teck’s Neptune facility export capacity up to 18.5 million tonnes. However, Lindsay stressed additional upside potential, certainly beyond

20 million tonnes and more.” Concerning capacity, this equates to approximately one extra coal unit train per day, and about 0.3 additional ships per week.

The proposed capacity expansion will fit entirely within the existing terminal footprint. The process of transferring coal from trains to stockpiles to ships would become more efficient, allowing higher throughput hence overall coal export capacity. Coal stockpiles are not proposed to be larger or higher.

Lindsay stressed that while Teck has not disclosed the magnitude of the potential cost savings, they are expected to be significant. Beyond that however is the reliability factor. “It’s really about having a long-term, reliable supply chain for various businesses. So that’s how we think about it.”

Grain cargo investment

Fibreco Export Inc. has successfully served the western Canadian forest industry by moving wood chips and wood pellets to customers throughout the world for over 40 years. It now handles a significant

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portion of B.C.'s wood pellets destined for the European and Asian energy markets. It also handles canola meal pellets. In 2017, Fibreco phased out handling wood chips to make way for new business opportunities in bulk handling.

Fibreco is one of two major terminals in the North Shore Trade Area that will see a profound shift in their cargo profile in the coming years, thanks to a 2017 decision by Regina based AGT Food and Ingredients Inc. to enter into a long-term terminal services agreement. Consequently, Fibreco is constructing an agriproducts export terminal facility at their existing North Vancouver location. AGT's agreement with Fibreco will allow the company to target increased volumes to their critical markets for pulses as well as diversified products such as durum wheat and other agri-commodities.

The agriproducts facility will include approximately 43,000 metric tonnes of dry bulk storage, rail capacity to receive full unit trains, and a new shiploader and expanded ship berth capable of loading Panamax vessels.

Fibreco President and CEO Kerry Lige noted that the new grain terminal project is on schedule for operations to start by mid-2019. Construction will take place while the wood pellet business line continues operating. He also observed that the current trade disputes are impacting steel costs and is having a significant impact on their construction costs.

Maintaining logistics fluidity while completing an expansion project is not without its challenges. Lige stated that "the new project is being built in an area that is segregated from the wood pellets. The marine berth will be shared as well as the rail infrastructure and dump shed." His team is carefully managing the dumper, transition to ship loader and ship loader process because these areas have the most significant potential to impact cargo fluidity during the construction process.

"We do not have any long-term commitments with any canola meal pellet customers at this time," Lige said, "but are positioned to accommodate handling this commodity in the future when required."

When asked about the importance of the North Shore Trade Area projects, Lige commented that he was involved in high-level discussions on behalf of Fibreco. The company's focus was on rail access since it is a significant issue for them.

Lynnterm is an 80-acre facility operated by Western Stevedoring, a diversified stevedoring contractor, terminal operator and logistics company with operations throughout B.C. Historically, the marine terminal has acted as a consolidation point for forest products, steel and breakbulk cargo. Ships agents from Westwood Shipping Lines, G2 Ocean, Saga Welco As, Swire Shipping Ltd., Montreal Shipping Co. Ltd., Eastern Carliner and Pacific Basin Shipping (Canada) Ltd. are among some of the companies that support the marine traffic that uses the facility. A dramatic shift in the terminal's cargo profile is on the horizon.

G3 Terminal Vancouver, an affiliate of G3 Global Holdings (G3), announced in late 2016 that it would construct a state-of-the-art grain export terminal at Lynnterm West. The primary commodities to be handled at the new G3 facility include wheat, soybeans, canola, peas, corn (occasionally) and some specialty by-products.

Construction of G3's Vancouver terminal started in 2017 and will take three years to complete. Brett Malkoske, Vice-President Business Development, G3 Canada **Ltd. Reported** that "construction on the terminal project is progressing safely and according to plan."

The plan includes the construction of new buildings, conveying systems, 48 concrete grain storage silos and a new berth for vessel loading. The maximum capacity of the terminal is estimated at eight million metric tonnes per year with onsite storage of up to 200,000 tonnes in silos. The rail loop will accommodate three trains of up to 150 cars each per day which will allow trains to travel to Vancouver, unload while in continuous motion and return to G3 Canada's primary elevators without detaching from their locomotives. In addition to improved rail efficiency, G3's Vancouver facility is designed with a focus on high-velocity receiving, shipping and best-in-class environmental and safety standards, representing the next generation in grain terminal design.

The Richardson International marine terminal's \$140 million expansion project and the Cargill Ltd. rail improvement project are helping to reinforce the North Shore Trade Area's reputation as a bulk juggernaut.

Richardson International Limited has nearly doubled the storage and receiving capacity of its export terminal. The company added an 80,000-metric-tonne concrete grain storage annex, increasing storage capacity to 178,000 metric tonnes. The terminal now can handle more than six million tonnes each year to meet the growing demand for Canadian grains and oilseeds. Richardson also upgraded and enhanced its rail yard and receiving system to handle and process railcars more efficiently.

Phil Hulina, Senior Director, Vancouver Terminal Operations for Richardson International, indicated that while their expansion project was completed in time for the 2016 new crop year, several investments led up to the project including the rail track yard to improve logistics.

The facility handles a high volume of grain (wheat, canola, barley, rye, flax, grain and feed products) that originate from the company's inland facilities. "Richardson's project added flexibility and capacity to both handle the different variety and grades of grain (which requires segregation in bins) but flexibility to receive and handle the cargo when the railways deliver grain to the facility," Hulina said. "For example, #1 Red wheat may require between 10 to 15 different segregations. The new facility is completely automated and dust-free and is a great asset."

The expanded facility provides efficiency and helps them with their customer service. For example, the grain needs to be processed and cleaned at the terminal before loading the ship. Thus, the logistics associated with preparing and loading the cargo volume associated with a super-Panamax size ship can be handled more efficiently.

Hulina stressed that the Gateway has some pinch points but that the Port Authority does a good job in identifying issues and that the project was necessary for gateway rail car fluidity. He further expressed appreciation for being part of a collaborative process that sought to identify solutions. Since Richardson is paying for the investment as part of the Gateway Improvement Fee, the company needs to show the benefits of increased capacity with higher throughput.

In a three-phase project that started in 2015 and finished in the fall of 2016, Cargill's North Vancouver terminal saw their existing rail track system reconfigured including the addition of a new lead track and installation of a new rail car indexer to increase capacity and efficiencies. In 2017, as part of an electrical distribution upgrade, Cargill constructed a new 69kV substation at the North Vancouver grain handling facility. The investments were projected to lead to:

- An annual increase in vessel calls from the current 88 to a maximum of 132 trips per year.
- A yearly increase in train locomotive trips from the current 325 to a maximum of 500 per year.
- A daily increase in the total number of rail cars unloading at the terminal from 140 to 180 per day to a maximum of 200 cars per day during peak periods.

Conclusion

The review of the North Shore Trade Area logistics infrastructure reveals that

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the marine terminals that handle liquid and dry bulk along with grain cargoes are well positioned for growth. In large part, the increase in port throughput capacity is occurring within the existing terminal footprints and as a result of rail infrastructure upgrades. It also reaffirms the fact that rail service is essential for unlocking Canada's international maritime trade diversification opportunities. The significance of the Port of Vancouver's rail model in helping to secure federal infrastructure funding highlights just one small facet of what is perhaps the most effective port and stakeholder collaboration process in the country.

Rail challenges experienced in late 2017 and early 2018 resulted in the Port of Vancouver suffering an 11.8 per cent drop in grain, specialty crops and feed cargo. Industry observers will be looking to see

if improvements to the existing Thornton Rail Tunnel ventilation system to allow trains to pass through the tunnel more frequently (announced by the Honourable Marc Garneau, Minister of Transport in late June) will also improve rail logistics fluidity to the North Shore Trade Area.

The construction of a double-tracked section between Willingdon Junction and CP Junction on the Burrard Inlet Line along with grade separations on Douglas Road and Piper Avenue in Burnaby is also essential for increased rail capacity. The project would allow for the staging of trains thereby permitting more frequent Second Narrows rail bridge crossings.

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