Canadian and US Port Infrastructure Funding and Policy Study
Technical Appendix

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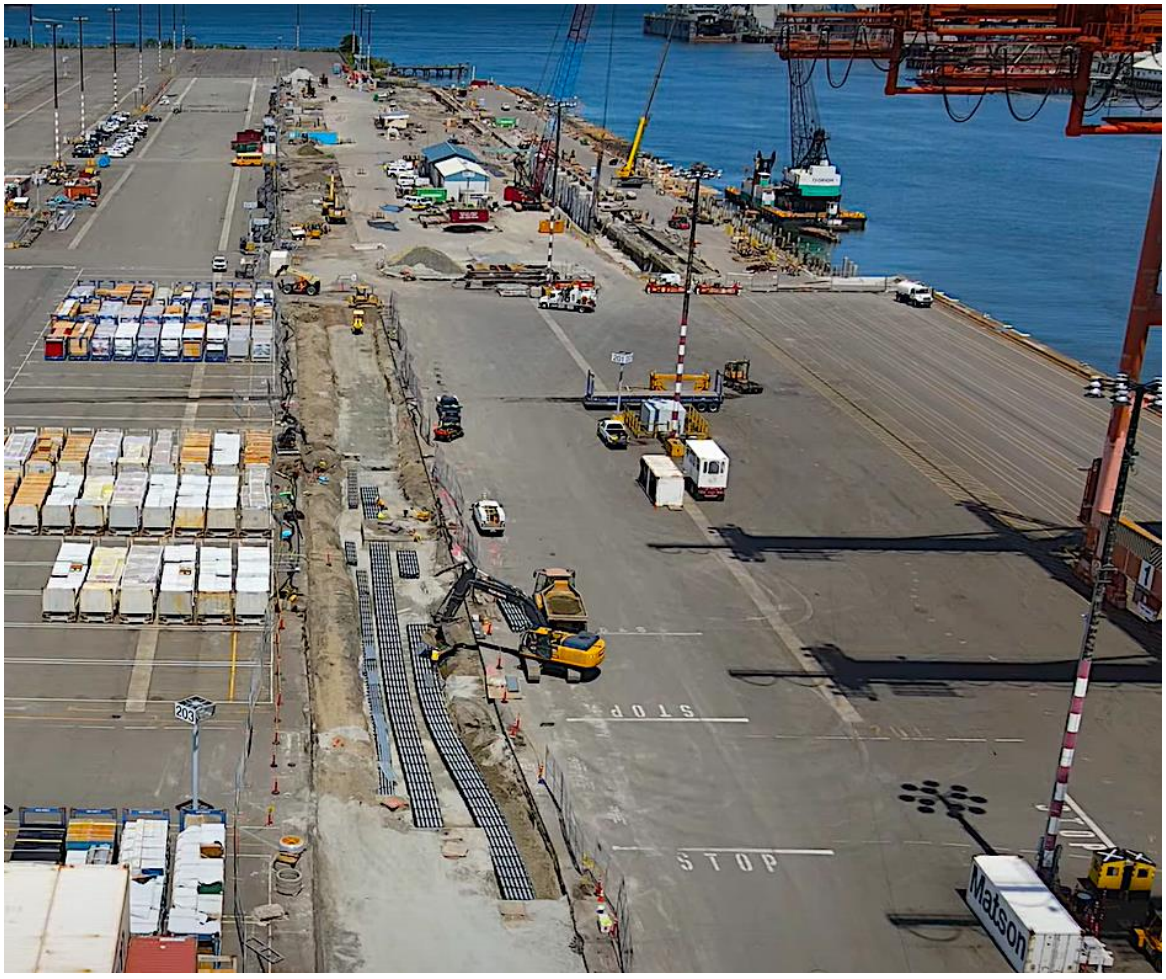

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1. CANADIAN GOVERNMENT FUNDING PROGRAMS

1.1 Background

The Canadian federal government has jurisdiction over all modes of transportation used in inter-provincial and international commerce.

Provincial governments have jurisdiction over highway infrastructure and intra-provincial rail and trucking.

Canada and the U.S. have similar mechanisms of coping with overlapping jurisdiction through delegation of powers. Overall economic and safety regimes are overseen by federal agencies, with enforcement powers delegated to State or provincial authorities as deemed appropriate. State and local agencies also regulate transportation matters within their own jurisdiction.

Economic regulation of the rail and trucking industries is guided by similar policy principles in Canada and the U.S. Both countries have deregulated commercial operations of railways and trucking in the interests of economic efficiency, and federal policies are designed to restrict the ability of lower levels of government to regulate in these areas. As an example, federal responsibilities for the regulation of inter-provincial and international trucking are delegated to the provinces under the *Motor Vehicle Transport Act* (MVTA), although the federal government sets policy parameters. Coordination is achieved through cooperative agreements between the federal and provincial governments.

1.2 Federal Policies & Programs

Canadian federal policies and programs are typically revamped when the party holding power in Parliament changes. Within the period considered for this study (2005 to 2021), the government has changed twice: in January 2006, with the election of a Conservative government which held power for approximately ten years; and October 2016, when a Liberal government won a majority in the House of Commons. The Liberal government was re-elected as a minority government in 2019. In the Canadian governmental system, the executive branch of government is held by elected officials appoint by the Prime Minister to Cabinet.

1.2.1 Liberal Government 1993 to 2006

The Canadian federal government's role was fundamentally changed because of the fiscal austerity program introduced by the Liberal government in 1994. Previously, the federal role included ownership, operation of large parts of the transportation system. From 1993 to 2006, these functions ceased to be a major part of the federal role. Subsidies were reduced or eliminated, commercial operations divested, and operational responsibilities transferred to others. These changes have had a substantial impact on the national freight transportation system. Major changes included:

- Passage of the *Canada Transportation Act* (CTA) in 1995. The CTA eased regulatory requirements for abandonment of branch lines.
- Elimination of the subsidy for transportation of Western Canadian grain to export position in 1995. This was previously paid under the Western Grain Transportation Act and totaled approximately $560 million in its last year (1994/95).
- Elimination of the $15 million Feed Freight Assistance Program which subsidized the transportation of feed grains to domestic livestock producers.
- Liberalization of Canada-U.S. air services through the Open Skies Agreement in 1995.
- The privatization of CN Rail in 1995.

- Transfer of the air traffic control system to NavCanada, an independent not-for-profit corporation.
- Implementation of cost recovery for government-supplied services such as navigational aids.
- Divestiture of federal ports and airports to local control.

Divestiture and/or devolution of responsibility for port operations under the *Canada Marine Act* (1998) was the most consequential change with regard to funding of port infrastructure. The Canada Marine Act (CMA) established the first single, comprehensive piece of legislation to govern many aspects of Canada's marine legislation. Key features included:

- Transferring the ownership and operation of its regional/local and remote ports to other federal departments, provincial governments and local interests, including municipalities. As of 2007, 85% of 549 smaller ports previously owned and operated by Transport Canada had successfully divested.[1]
- Establishment of Canada Port Authorities (CPAs) to oversee the operation of nineteen major ("commercially important") ports, including six in British Columbia (Vancouver Port Authority, Fraser River Port Authority, and North Fraser Port Authority in the Lower Mainland; and the ports of Prince Rupert, Nanaimo and Port Alberni).

Canada Port Authorities are created by the federal minister of transport by issuing Letters Patent that structure each Port Authority as a federally incorporated non-for-profit entity. As such there are no ownership shares, and a Port Authority is an agent of the federal government. Many port-related assets and real property remain under the "ownership" of the federal government through Transport Canada though some port assets are also owned by the private sector. Federal Port Authorities in British Columbia can also hold Crown Provincial waterlots that are used for the conduct of port business and maritime activity.

Among other things, a Port Authority's federal Letters Patent set out the code of conduct governing the directors and officers of the port authority, as well as specify the extent of the activities the port authority may undertake, the limits of a port authority's ability to contract as agent for Her Majesty, and the limits of the port authority to borrow money.[2] In order to maintain its Letters Patent in good standing, a Port Authority is required annually to pay the Minister of Transport a charge on gross revenue.

Port Authorities are financially self-sufficient, earning revenues from port users who lease the port's federal lands and pay various fees such as harbour dues. In addition to covering operating expenses, Port Authorities are required to invest excess revenues in port infrastructure.

When introduced the *Canada Marine Act* was specifically designed to limit Canada Port Authorities' (CPAs) access to government financing or program funding. Each CPA has access to private debt financing up to a limit specified in their respective Letters Patent. The CMA also mandates payment of an annual stipend by the CPA to the Crown as a means of providing a financial return on port investments made by the federal government prior to passage of the CMA. Certain financial obligations and responsibilities previously carried out by other federal agencies (for example dredging of the Fraser River) were transferred to CPA's. CPA's are exempt from local property taxes but make equivalent payments to municipalities as Payments in Lieu of Taxes (PILT). Port Authorities also have environmental and First Nations responsibilities as agents of the Crown.

Federal funding for non-port transportation infrastructure has evolved over time. For example, it was provided through several programs, including the Strategic Highway Infrastructure Program (SHIP). In April 2001, the SHIP program committed up to $600 million over five years in highway infrastructure across

[1] Transport Canada Performance Report 2006 – 2007 p. 37.
[2] Port of Vancouver website https://www.portvancouver.com/about-us/faq/canada-port-authority-governance-and-oversight/

Canada. The program had two components: a $500-million highway construction component and a $100-million national system integration component. An allocation formula was developed to distribute the $485 million available to the provinces and territories for road construction under SHIP. The formula consists of a minimum of $4 million per jurisdiction plus a share based on population and a 50-50 cost-sharing ratio with the province.

1.2.2 Federal Conservative Government 2006 to 2015

Following their victory in the 2006 election the new Conservative government created a new Transport, Infrastructure and Communities Portfolio to consolidate federal infrastructure funding programs. The new portfolio included Transport Canada and a new Infrastructure Canada department. The umbrella funding program was called the Building Canada Plan.

The Government of Canada's Building Canada Plan which was announced in November 2007 provided $33 billion for infrastructure investments between 2007 and 2014 through various funding mechanisms, including the Provincial/Territorial (P/T) Base Funding, the Gas Tax Fund (GTF), the General Sales Tax (GST) rebate, the Building Canada Fund (BCF), the Gateways and Border Crossings Fund (GBCF), the Asia-Pacific Gateway and Corridor Initiative (APGCI) and Public-Private Partnership (P3) Fund.

The primary program for funding trade-related transportation infrastructure in Western Canada was the Asia Pacific Gateways and Corridors Initiative (APGCI) which was first announced by the Prime Minister in October 2006 with an initial investment of CDN$591 million (US$ 547 million). A further commitment of CDN$410 million (US $340 million) was made in Budget 2007, bringing total federal funding for the APGCI to more than CDN$1 billion (US$ 887 million).[3]

By the end of fiscal year 2007-2008, the Government of Canada, in partnership with all four western provinces and various stakeholders, announced infrastructure projects worth over CDN$2.3 billion (US$ 2.1 billion), including federal contributions of over CDN $800 million (US$ 740 million). These projects include road/rail grade separations and improved access to ports or inter-modal facilities to promote more efficient and seamless connections between the various modes of transportation.[4]

In 2007, the *Canada Marine Act* was amended to enhance CPA's access to capital, including:

- Allow Canada Port Authorities to apply for contribution funding regarding, environmental sustainability, security and capital costs related to infrastructure;
- Introduce a market-based borrowing regime;
- Facilitate port amalgamation;
- Incorporate a more responsive governance framework; and
- Provide more options for Canada Port Authorities who wish to stimulate and pursue business opportunities that were previously not available to them.

The three BC Lower Mainland CPA's (Vancouver Port Authority, Fraser River Port Authority, and North Fraser Port Authority) were amalgamated into the Vancouver Fraser Port Authority on December 21, 2007.

The federal government introduced the New Building Canada Fund in 2014 as the primary source of federal funding contributions for infrastructure projects. It had two components: the CDN $4-billion (US$ 1.3 billion) National Infrastructure Component (NIC) which provided funding for projects of national significance, and

[3] "Canada's New Government Announces Projects for The Asia Pacific Gateway and Corridor Initiative" News Release No. GC 016/07 May 11, 2007.
[4] Transport Canada Performance Review 2007 – 2008

the CDN $10-billion US$ 9 billion) Provincial-Territorial Infrastructure Component (PTIC) to support infrastructure projects of national, regional and local significance that contribute to economic growth, a clean environment, and stronger communities. The PTIC was divided into two sub-components: CDN $9 billion (US$ 8 billion) for National and Regional projects (PTIC–NRP); and CDN $1 billion (US .9 billion) for projects located in communities of fewer than 100,000 residents through the Small Communities Fund (PTIC–SCF).[5]

The Asia-Pacific Gateway and Corridor Initiative (APGCI) remained the primary funding mechanism for trade-related transportation infrastructure in Western Canada (the provinces of BC, Alberta, Saskatchewan and Manitoba) until the program ended in 2018. The APGCI was launched as an integrated package of investment and policy measures to strengthen the efficiency, capacity, security and reliability of the Asia-Pacific Gateway and Corridor transportation system. The objectives of the program included:

- Gateway capacity - Strategic infrastructure investments and network improvements.
- Competitiveness - Increase Canada's share of Asia-Pacific commerce.
- Efficiency and reliability - Improve movement of goods throughout supply chains.
- Security and border efficiency - Establish a secure and efficient transportation network linking Canadian and North American markets; and
- Integrative policy frameworks and regulations that address new approaches to governance.

The APGCI was structured as a horizontal initiative and its development and implementation involve multiple federal departments/agencies. The Minister of International Trade and Minister for the Asia-Pacific Gateway was the champion of the APGCI, with support in this effort provided by Transport Canada. The Minister of Transport, Infrastructure and Communities was accountable for the management of resources in the Asia-Pacific Gateway and Corridor Transportation Infrastructure Fund. These two Ministers were jointly responsible for the APGCI. Partner departments/agencies in the APGCI and their roles are outlined in the summary below:

Transport Canada (TC), as the lead department for the APGCI, reported to the Minister of International Trade and Minister for the Asia-Pacific Gateway and to the Minister of Transport, Infrastructure and Communities. TC was responsible for the on-going coordination, management, integration and strategic development and implementation of the initiative. TC was also responsible for the management of the Asia-Pacific Gateway and Corridor Transportation Infrastructure Fund (TIF), whose primary objective was to address capacity challenges facing the Asia-Pacific Gateway and Corridor. Strategic project investments were funded under TIF to enhance the efficiency and capacity of Canada's multi-modal transportation network and are focused specifically on the movement of international commerce between the Asia-Pacific region and North America.

While transportation infrastructure formed the core of the initiative, the APGCI also addressed the interconnected issues that impact the competitiveness, further development and exploitation of the Asia-Pacific Gateway and Corridor transportation system. Transport Canada completed several non-infrastructure/competitiveness measures in the following areas:

- Renewing and analyzing policy and regulations to improve the efficiency and use of the Gateway and Corridor system.
- Ensuring the secure and efficient movement of goods and people, including participation in related areas outlined in the Canada-U.S. Beyond the Border Action Plan.

[5] 2014 New Building Canada Fund National Infrastructure Component
https://www.infrastructure.gc.ca/site/alt-format/pdf/pdf-ptic/20160501-NBCF-PTIC-NRP-PNR-VIPT-NFCC-eng.pdf

- Developing new supply chain performance metrics that reflect how transportation systems are used in an era of globalization and global supply chains and that provide an evidence-base for promotion and continuous improvement.
- Supporting innovative partnerships among federal and provincial counterparts to understand how and where future trade patterns will affect system-wide transportation capacity, and among Asia-Pacific Gateway stakeholders to develop a shared vision about the optimal performance and efficiency of the Asia-Pacific Gateway.
- Engaging stakeholders across Western Canada to advance understanding of the long-term challenges and opportunities of the Gateway by tapping into Canadian and international expertise; and
- Undertaking studies on the operations, use and efficiency of the Gateway and Corridor system to better understand and improve the multi-modal infrastructure network, to increase the productivity of the full supply chain and to provide an evidence-base for future action.

The Department of Foreign Affairs and International Trade (DFAIT) supported the ongoing implementation of international marketing activities, in coordination with Transport Canada and with Asia-Pacific Gateway stakeholders, promoting greater use of the Gateway for Asia-Pacific business travel and as the supply chain route of choice for North American and Asia-Pacific importers, exporters, investors and transportation companies.

Canada Border Services Agency (CBSA) was responsible for the implementation of a marine container inspection operation located at the Port of Prince Rupert. The marine container inspection ensured that containers arriving from other countries are properly inspected by means of effective processes and through the use of state-of-the art technology.

Human Resources and Skills Development Canada (HRSDC) was responsible for the Asia-Pacific Gateway Skills Table (Skills Table). Modeled on the Sector Council Program, the Skills Table was launched in September 2008 to help address the skills and human resource pressure issues related to the APGCI.

Parks Canada is responsible for the maintenance and recapitalization of highways that pass through national parks, including the Trans-Canada Highway (TCH). The TCH is a major pan-Canadian highway that connects the West Coast and its Asia-Pacific linkages to the rest of Canada, especially markets in the western provinces. Within the context of the APGCI , Parks Canada was responsible for the twinning of a 10 km section of the TCH through Banff National Park to improve transportation capacity and efficiency.

Western Economic Diversification Canada (WD) was responsible for some APGCI elements in the first phase of the Initiative. This included development of "Seizing the Gateway Opportunity", a study on how best to capitalize on the long-term value added economic opportunities presented by rise of the Asia-Pacific market, along with case studies of successful Canadian SMEs in the Asia-Pacific market, establishing a Canadian presence at the China International Fair for Investment and Trade, a study tour of Western Canadian innovation capabilities by Trade Commissioners from Canadian Posts in the Asia-Pacific region and an assessment of community-level needs in Saskatchewan and Manitoba for doing business in and with Asia.

1.2.3 Federal Liberal Government 2015 – 2021

Following their victory in the 2015 election, the new Liberal government introduced a new infrastructure funding plan called the Investing in Canada Plan. The new plan was intended to deliver investments across five streams:

- Public Transit - Investments to build new urban transit networks and service extensions.
- Green Investments to ensure access to safe water, clean air, and greener communities.
- Social - Investments to provide adequate and affordable housing and childcare as well as cultural and recreational centers.

- Trade and Transportation - Provide safe, sustainable, and efficient transportation systems that will bring global markets closer to Canada to help Canadian businesses compete.
- Rural and Northern Communities - Investments to grow local economies, improve social inclusiveness and better safeguard the health and environment of rural and northern communities.

In the 2017 federal budget, the government proposed to invest $10.1 billion over the next decade in trade and transportation projects. One part of the Government's overall investment in trade and transportation infrastructure is the Trade and Transportation Corridors Initiative, led by Transport Canada. The initiative prioritizes investments that address congestion and bottlenecks along vital corridors, and around transportation hubs and ports providing access to world markets.

National Trade Corridors Fund

Under the Trade and Transportation Corridors Initiative (TTCI), the 2017 budget committed CDN$1.9 billion (US$ 1.5 billion) over 11 years for the National Trade Corridors Fund, a merit-based program to make Canada's trade corridors more efficient and reliable. CDN $400 million (US$ 307 million) was committed to projects in Northern Canada. Contributions are available under the NCTF for up to 50% of eligible project costs. The program is designed to:

- Support the flow of goods and passengers by reducing bottlenecks, and address capacity issues.
- Help the transportation system withstand the effects of climate change and make sure it can support new technologies and innovation.
- Address the unique transportation needs in Canada's territorial North to improve safety and foster economic and social development.
- Build on investments made by a variety of public and private sector partners.
- In addition to streamlining transportation along Canada's major trade corridors, the Fund will look for ways to:
- Improve the flow of supplies to northern communities.
- Support economic opportunities in the three Northern territories.

An additional CDN$400 million (US$ 308 million) was allocated to the NTCF for Northern projects in 2019.

In July 2017, the first call for proposals was launched to address urgent capacity constraints and to improve supply chain performance. Transport Canada approved more than CDN$800 million (US$ 615 million) to fund 39 projects across Canada, including every province and territory.

A Northern call for proposals was launched on November 19, 2018, which focused specifically on targeting transportation-related infrastructure investments in Yukon, the Northwest Territories and Nunavut. This call, which closed March 29, 2019, resulted in funding 11 projects and a federal funding commitment of more than CDN$230 million (US$ 177 million) to address unique transportation priorities in Canada’s territorial North.

A third call for proposals was launched on January 15, 2019, which focused on diversifying Canada’s trade. The call for proposals was intended to be open if there were funds available with no specific deadline to submit proposals. Transport Canada evaluates projects on specific trade-related criteria that:

- Improve the fluidity and/or performance of the transportation system to contribute to an increase in the value and/or volume of goods exported from Canada to overseas markets; and/or
- Increase existing, or generate new, overseas trade as a result of the investment.

In addition to the above criteria, projects are assessed for the extent to which they will add capacity or address bottlenecks near major ports, airports, or along road and rail corridors in Canada that help generate or increase overseas trade.

Canada Infrastructure Bank

The Canada Infrastructure Bank (CIB) is a Crown corporation established in June 2017. *The Canada Infrastructure Bank Act*, the legislation that established the CIB, was part of Bill C-44, *Budget Implementation Act, 2017*, which became law on June 22, 2017. CIB's mandate is to invest up to $35 billion of capital into new infrastructure projects alongside private and institutional investors. Priority areas for the CIB are green infrastructure, clean power, public transit, trade and transportation and broadband infrastructure. The CIB is focused on making investments, providing advisory expertise, and building knowledge as a center of excellence about infrastructure investments. The CIB will leverage $35 billion to attract private capital and co-invest with private-sector and institutional investors in new, revenue-generating infrastructure.

For federal, provincial, territorial, municipal governments, and their agencies, and Indigenous communities, the CIB is another option to help structure and finance new infrastructure projects. The Canada Infrastructure Bank does not replace existing infrastructure funding models, such as grants and PPPs, but seeks to complement and expand these models.

CIB has a wide range of financial instruments available, including senior debt, subordinated debt, preferred equity, equity and structured risk positions, depending upon the needs of a specific project or business case. British Columbia Government. No projects have been funded to date by the CIB.

1.3 Provincial Funding

The British Columbia government has jurisdiction over highway infrastructure and intra-provincial rail and trucking. By far the largest share of provincial transportation expenditures is devoted to maintenance, rehabilitation and expansion of the provincial highway network.

The B.C. Ministry of Transportation and Infrastructure plans transportation networks, provides transportation services and infrastructure, develops and implements transportation policies, and administers many related acts, regulations and federal-provincial funding programs. The Ministry strives to build and maintain a safe and reliable transportation system and provide affordable, efficient and accessible transportation options for all British Columbians. This work includes investing in road infrastructure, public transit, the coastal and inland ferry service, active transportation network improvements and other green modes of transportation, reducing transportation-related greenhouse gas emissions, and strengthening the economy through the movement of people and goods. The Ministry invests in highway rehabilitation and side road improvements, which includes road resurfacing, bridge rehabilitation and replacement, seismic retrofits, intersection improvements and upgrades to smaller side roads to help connect communities.

The Ministry is responsible for four Crown corporations: the B.C. Transportation Financing Authority (BCTFA); B.C. Railway Company (BCRC); Transportation Investment Corporation (TI Corp); and B.C. Transit.

The B.C. Transportation Financing Authority (BCTFA) was established in 1993 as a Crown corporation operating under the *Transportation Act* with a mandate to plan, acquire, construct, hold, improve or operate transportation infrastructure throughout B.C. The BCTFA owns all provincial highways and land held for construction of future transportation infrastructure. However, administration, regulatory responsibility and operational authority for management of highways, as set out in the *Transportation Act*, are the responsibility of the Minister and the Ministry of Transportation and Infrastructure. The BCTFA has no dedicated staff. Management is provided by staff at the Ministry of Transportation and Infrastructure.

The provincial government allocated CDN$1.62 billion (US$ 1.2 billion) for municipalities, transit and education as part of the government's pandemic economic recovery plan released Sept. 17, 2020. The funding is a combination of federal and provincial monies. The provincial plan to support communities includes CDN$400 million (US$ 308 million) to revitalize community infrastructure and support local governments to provide the services. Community infrastructure eligible for funding under the CDN$300

million (US $231 million) for infrastructure and connection grants, including roads and highways, small airports, and paths and trails.[6]

In 2004 the Province of BC passed the Ports Property Tax Act to stimulate investment in port facilities. The Ports Property Tax Act limits the municipal property tax rate on selected port properties in the Major Industry (Class 4) category. The legislation exempts berth corridor improvements at specific facilities, places a cap on municipal tax rates for most major terminals and lowers the cap rate on new investment. Properties covered by the PPTA are specified in the Ports Property Tax Act Eligible Port Property Designation Regulation, and include essentially all major cargo terminals in the Lower Mainland and Prince Rupert. The PPTA includes provisions for provincial compensation to municipalities affected by the PPTA.

1.4 Translink (Metro Vancouver)

TransLink, formally the South Coast British Columbia Transportation Authority, is the statutory authority responsible for the regional transportation network of Metro Vancouver in British Columbia, Canada, including public transport, major roads and bridges. TransLink was created in 1998 as the Greater Vancouver Transportation Authority (GVTA) and was fully implemented in April 1999 by the Government of British Columbia to replace B.C. Transit in the Greater Vancouver Regional District and assume many transportation responsibilities previously held by the provincial government. TransLink is responsible for various modes of transportation in the Metro Vancouver region as well as the West Coast Express, which extends into the Fraser Valley Regional District (FVRD). On November 29, 2007, the province of British Columbia approved legislation changing the governance structure and official name of the organization.

Translink works with municipalities within the region to plan and maintain the region's Major Road Network (MRN). The MRN consists of major arterial roads throughout the region which carry commuter, transit, and truck traffic. The 675-kilometre-long (419 mi) network serves to connect the provincial highway system with local municipalities' road networks. TransLink contributes funding for the operation and maintenance of the MRN, but ownership and operation of the roads remain with the local municipalities. Road, cycling, and pedestrian improvement projects in the MRN are also partially funded by TransLink. As a part of the MRN, TransLink also owns and maintains three bridges handling truck traffic the region:

- Golden Ears Bridge
- Knight Street Bridge
- Pattullo Bridge.

In December 2018, 236 lane-kilometres (147 lane-mi) of roadway was added to the MRN. This was the largest one-time addition to the MRN since the arterial roadway network designation was created in 1998.[7]

1.5 Local Governments

Local (municipal) governments are responsible for construction and maintenance of local roads.

[6] "Local B.C. communities to share in $1.62 billion recovery cash" Business in Vancouver September 17, 2020.
[7] "236 kms of regional roadway added to TransLink's Major Road Network" Daily Hive Kenneth Chan Dec. 7, 2018 https://dailyhive.com/vancouver/translink-major-road-network-december-2018

2. PORT OF VANCOUVER

2.1 Background

Located on the southwest coast of British Columbia, the Vancouver Fraser Port Authority (Port of Vancouver) extends from Roberts Bank and the Fraser River up to and including Burrard Inlet. Geographically, the Port of Vancouver includes more than 16,000 hectares of water, more than 1,500 hectares of land and hundreds of kilometers of shoreline, bordering 16 municipalities and intersecting the traditional territories and treaty lands of several Coast Salish First Nations.

The Port of Vancouver is Canada's largest port. The Port of Vancouver is about the same size as the next five largest Canadian ports combined. Home to 29 major terminals, the port can handle the most diversified range of cargo in North America: bulk, containers, breakbulk, liquid bulk, automobiles, and cruise traffic.

In 2020, the Port of Vancouver handled 145.5 million tonnes of cargo. The largest portion was bulk traffic, 01.8 million tonnes accounting for 70% of the total. In 2020, container traffic totaled almost 3.5 million TEUs. The Port handled 16.7 million tonnes of breakbulk cargo, and over 345,000 autos.

From 1983 to 1998 the Port of Vancouver was one of 15 major federal ports overseen by the Canada Ports Corporation, a Crown corporation based in Ottawa. Responsibility for management of the port was transferred to the Vancouver Port Authority in 1998 with the passage of the *Canada Marine Act*. Vancouver Port Authority was amalgamated with the other Lower Mainland port authorities (Fraser River Port Authority and North Fraser Port Authority) to become the Vancouver Fraser Port Authority on January 1, 2008.

Port Authorities are financially self-sufficient, earning revenues from port users who lease the port's federal lands and pay various fees such as harbour dues. In addition to covering operating expenses, port authorities are required to invest excess revenues in port infrastructure. In the case of the Port of Vancouver, about $80 million has been reinvested in infrastructure each year. Canada Port Authorities are also required to pay an annual gross revenue charge that is laid out in their letters patent.

Among other things, a Port Authority's Letters Patent set out the code of conduct governing the directors and officers of the port authority, as well as specify the extent of the activities the port authority may undertake, the limits of a port authority's ability to contract as agent for Her Majesty, and the limits of the port authority to borrow money.

Any changes to the Letters Patent require supplementary Letters Patent. The Minister of Transport can approve supplemental Letters Patent if the changes are relating to activities that are core to the port authority's usual port activities. If the changes are not core to port operations, the supplementary Letters Patent must be approved by the president of the federal Treasury Board and the Minister of Finance. If the changes are to a Port Authority's borrowing limit, they must be approved by the Governor in Council (executive branch of government, on the recommendation of the Ministers of Transport and Finance.

The Port of Vancouver's financial results for 2018 and 2019 are highlighted in the table below. In 2019 rental income accounted for approximately 59 percent of their revenue, with other fees accounting for 31 percent and income from other sources the remaining 10 percent.

The Port Authority's income from operations totaled CDN$ 138.0 million (US$ 106 million) in 2018 and CDN $153.8 million (US$ 118 million) in 2019.

Figure 2-1 Port of Vancouver Financial Statements 2018 and 2019

Vancouver Fraser Port Authority Financial Statement 2018 and 2019		
CDN$ Millions		
	2018	2019
Income		
Rental Income	**$162,236**	**$178,638**
Fixed Rent	$135,103	$150,928
Variable Rent	$27,133	$27,710
Port Income	**$88,122**	**$92,396**
Wharfage	$44,840	$45,644
Cruise	$15,893	$20,999
Harbour Dues	$10,939	$10,394
Gateway Infrastructure Fee	$9,450	$8,569
Berthage	$6,985	$6,776
Log revenues	$15	$14
Other Income	**$24,095**	**$30,284**
Total Operating Revenue	**$274,453**	**$301,318**
Expenses		
Total Operating Expenses	**$136,451**	**$147,471**
Wages Salaries and Benefits	$44,375	$45,492
Depreciation & Amortization	$35,735	$37,860
Other Admin & Operating Expenses	$23,069	$29,165
Professional Fees & Consulting Serv	$9,983	$11,163
Dredging	$9,509	$10,251
Maintenance Repairs	$7,836	$6,636
Payments in Lieu of Taxes	$5,944	$6,904
Income From Operations	**$138,002**	**$153,847**
Other Expense	**$12,897**	**-$97,009**
Federal Stipend	$7,477	$8,039
Finance Costs	$5,194	$5,354
Loss (Gain) on Disposal of Assets	$470	-$109,469
Investment Income	-$215	-$903
Other Income	-$29	-$30
Net Income	$125,105	$250,856

- To provide safe and unimpeded access to terminals and to allow vessels to navigate through the Fraser River channel, the Port Authority carries out an annual maintenance dredging program to remove sediments and sand. The recovered sand is then sold and used for preload in local construction projects. Dredging costs totaled CDN$ 10.3 million (US$ 8 million) in 2019.
- Tenants pay property taxes to municipalities on the port authority's leased properties. The Port Authority makes payments in lieu of taxes (PILT) to local municipalities on unoccupied lands within the port authority's jurisdiction. PILT payments totaled CDN $6.9 million (US$ 5.3 million) in 2019.

- The Port Authority is exempt from income taxes but is obligated to pay an annual federal stipend to the Minister of Transport under the *Canada Marine Act*. The stipend was CDN $8.0 million (US$ 6.2 million) in 2019.

The Vancouver Fraser Port Authority's Letters Patent limit the port's borrowing capability to CDN $510 million (US$ 392 million) of debt outstanding at one time. In 2010, VFPA obtained an AA credit rating from Standard & Poor's. In 2019, the rating was reaffirmed at AA with a stable outlook.

On April 19, 2010, VFPA issued, through a private placement, CDN $100 million (US$ 77 million) unsecured senior debentures that were fully repaid upon maturity in April 2020. The bonds had a 10-year term bearing interest at 4.63%, incorporating a 0.85% spread over Government of Canada bonds. Interest on the bonds was paid semi-annually.

Early in 2020, the port authority increased its revolving credit facilities from CDN $200 million (US$ 154 million) to CDN$ 500 million (US 385 million). The port authority renewed its CDN $200 million (US$ 154 million) credit facility with Toronto Dominion Bank and added two new credit facilities for CDN $150 million (US$ 115 million) each from Royal Bank of Canada and CIBC. All revolving credit facilities have a five-year term expiring in March 2025. As of December 31, 2019, there were no outstanding amounts owing on these three facilities.

In 2010 VFPA implemented a Gateway Infrastructure Fee to recover the costs of the Port's investments in infrastructure projects. These were valued at CDN $167 million (US$ 128 million), and the fees were designed to recover 90% of the Port's expenditures over a 30-year period. The fees are paid by terminal operators based on throughput. The rate varies by commodity and location of the terminal. In 2020 the rate varied from CDN$ .43 to CDN$ $1.49 per TEU, and for bulk cargo from CDN$.05 to CDN$.15 per tonne

2.2 Key Infrastructure

For purposes of planning, Port of Vancouver facilities are allocated to four "trade areas" based on location, as shown in the figure below.

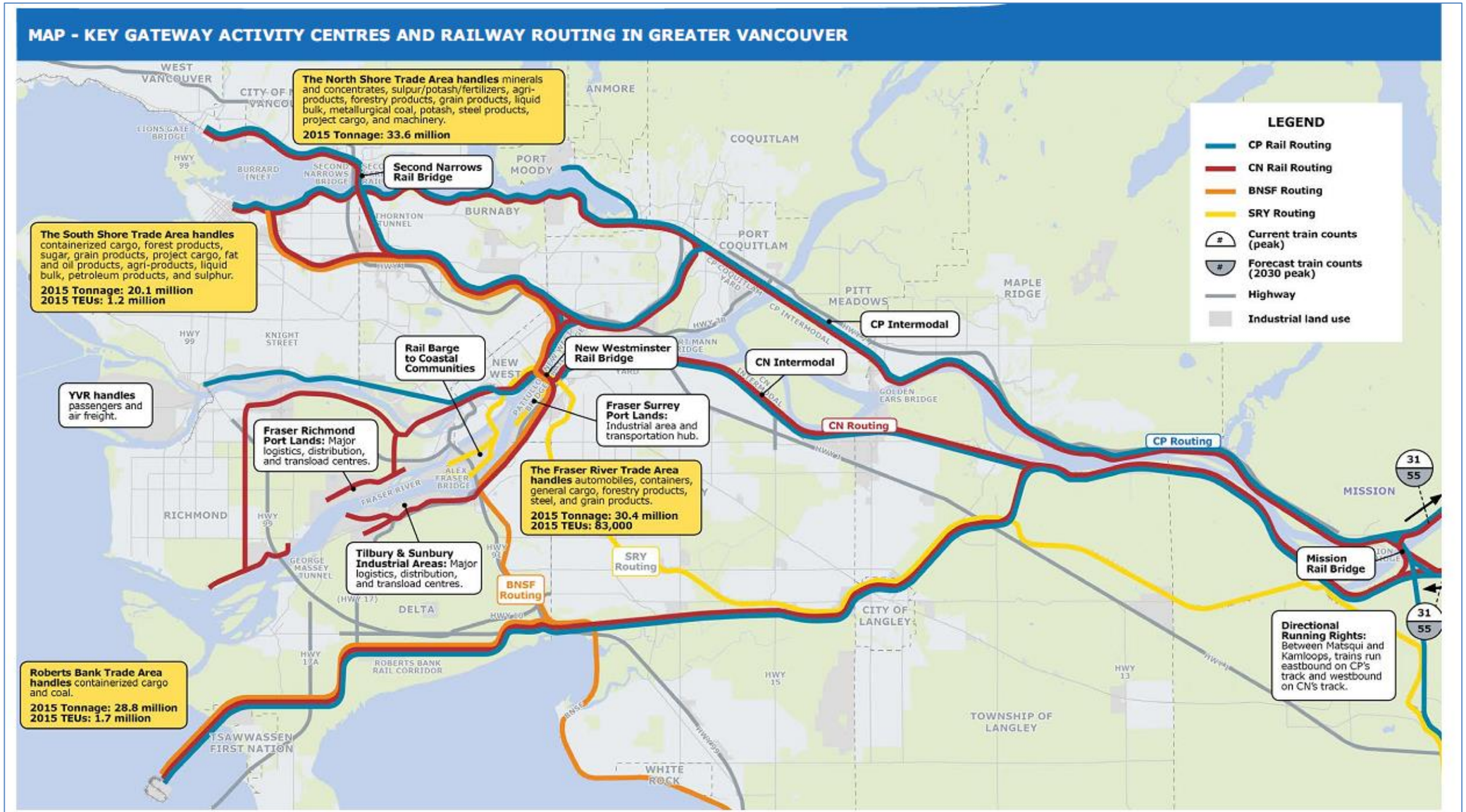
Figure 2-2 Port of Vancouver Trade Areas[8]



Major activity centers and transportation infrastructure are highlighted in the figure below.

[8] Source: Translink Request for Proposals Reference Number: Q14-149 Roberts Bank Trade Area Study November 6, 2014.

Figure 2-3 Key Gateway Activity and Rail Routing in BC Lower Mainland[9]



[9] Source: Greater Vancouver Gateway 2030 Draft Gateway Transportation Collaboration Forum May 2017.

2.3 Port-Related Infrastructure Funding

The table below shows B.C. Lower Mainland port-related projects receiving federal funding from 2005 to 2021, based on publicly available information. Only partial information is available on total project costs and contributions by other project participants. "Port-Related" projects include "Direct Port" projects are projects for which a Port is the lead agency and/or the infrastructure funded is on or directly adjacent to port property; and projects which may improve goods movement systems infrastructure and freight operations efficiency but are not specifically related to port operations.

Figure 2-4 Federal Funding of Gateway Projects B.C. Lower Mainland 2005 – 2021

Federal Funding - Lower Mainland Infrastructure 2007 - 2021										
Year	Program	Project	Recipient	Federal Funding	Provincial Funding	VFPA Funding	Translink Funding	Railway Funding	Other Funding	Total Cost
2005	APGCI	Pitt River Bridge & Mary Hill Interchange	Province	$90.0	$108.0					$198.0
2007	APGCI	Annacis Island road improvements Delta	Local Gov	$1.8						$11.6
2007	APGCI	Regional Traffic Management Centre BC Lower Mainland	Province	$5.0						$11.8
2007	APGCI	Roberts Bank Rail Corridor	Multiple	$75.0	$50.0	$50.0	$50.0	$32.0	$50.0	$307.0
2007	APGCI	South Fraser Perimeter Road	Province	$365.0	$899.0					$1,264.0
2007	WD	Fraser Port Dredging	Port	$4.0						$4.0
2008	APGCI	North Shore Trade Area	Port	$75.0	$62.0	$79.3	$5.0	$23.7	$8.3	$270.7
2008	APGCI	SRY Annacis Rail Barge	Railway	$4.6				$7.4		$12.0
2009	APGCI	South Shore Trade Area	Port	$49.7		$63.2	$3.8	$4.5	$3.8	$132.1
2013	APGCI	Deltaport Causeway Overpass	Port	$19.9		$24.8				$44.8
2015	APGCI	13th St. & Bellevue Ave. Rail Crossing Improvements W. Vancouver	Local Gov	$0.2						
2015	APGCI	Bridgeview Drive Improvement Project Surrey	Local Gov	$3.0						
2015	APGCI	Deltaport Truck Staging Area	Port	$6.0	$6.0	$6.0				$18.0
2015	APGCI	Inter-Regional Commercial Corridor Travel Time System Surrey	Local Gov	$0.9						
2015	APGCI	Knight Street and Marine Drive Intersection Improvements	Local Gov	$1.0						
2015	APGCI	Lansdowne Road Extension and No. 2 Road Upgrade Richmond	Local Gov	$5.0						
2015	APGCI	Railway Information Crossing System RBRC	Province	$0.3						
2015	APGCI	Westminster Hwy & Nelson Road widening Richmond	Local Gov	$5.5						
2016	APGCI	Highway 91 & 72nd Avenue Interchange	Province	$10.0	$20.0					$30.0
2017	NTCF	Port of Vancouver Supply Chain Visibility Project	Province	$0.3						
2017	NIC	Highway 91/17 and Deltaport Way Upgrade	Province	$81.7	$88.0	$88.0			$2.3	$260.0
2018	NTCF	Burrard Inlet Line Project –Phase 1A	Railway	$22.5		$29.0				
2018	NTCF	Burrard Inlet Road and Rail Improvement Projects	Port	$67.6		$55.0				$138.0
2018	NTCF	Harris Road Underpass and Kennedy Road Overpass	Port	$48.8		$61.0				$126.0
2018	NTCF	Mountain Highway Underpass	Port	$3.8		$6.0				
2018	NTCF	North Shore Corridor Capacity Improvement	Port	$76.9		$58.0		$10.1		$145.0
2018	NTCF	Westwood St and Kingsway Ave Grade-Separations Project Design	Port	$1.1		$2.0				$3.1
2019	NTCF	Annacis Auto Terminal Optimization	Port	$42.7		$42.3				$85.0
2019	NTCF	Fraser Surrey Port Lands Transportation Improvements	Port	$12.2		$12.8				$25.0
2019	NTCF	Glen Valley Double Track	Railway	$20.0		$10.0				
2019	NTCF	Portside Blundell Overpass and Upgrade	Port	$39.4		$42.0				$100.0
2019	NTCF	Short Sea Shipping - Concept Development	Port	$1.6						
2019	NTCF	West Coast Supply Chain Visibility System	Port	$6.5						
2020	NTCF	Annacis Island Track Capacity Improvements	Railway	$3.6				$3.6		$7.2
2020	NTCF	Fibreco Rail Jetty Expansion	Terminal	$7.5						
2020	NTCF	Raymont Terminal Capacity Expansion	Terminal	$17.5						
2020	NTCF	Pitt River Rd and Colony Farm Rd Rail Overpasses Project Design	Port	2.1		$2.0				$4.1
Grand Total				$1,175.5	$363.5					
		APGCI, NIC Projects 2007 - 2017		$803.8						
		NTCF Programs 2018 - 2021		$373.8						

2.4 Major Projects: APGCI and New Building Canada Fund 2005-2017[10]

Major projects funded under the Asia Pacific Gateways and Corridors Initiatives (APGCI) are described (in chronological order) below.

2.4.1 Pitt River Bridge and Mary Hill Bypass

This project was one of three major Lower Mainland highway projects undertaken by the B.C. Ministry of Transportation and Infrastructure as part of the provincial Gateway Program. The three projects included:

- The **Port Mann /Highway 1 Project** includes twinning the Port Mann Bridge, upgrading interchanges, and improving access and safety on Highway 1 from Vancouver to Langley. The project provides for extending HOV lanes to Langley, allows for transit over the Port Mann Bridge and includes cyclist facilities across the new structure. It relieves severe congestion impacting commuters and the large numbers of commercial vehicles that rely on this route – the Lower Mainland's primary truck route. The project included the replacement of the old Port Mann Bridge, as well as upgrading and widening Highway 1 (Trans-Canada Highway) and its interchanges. The whole project covered 37 km from the McGill Street Interchange in Vancouver to 216th Street in Langley. Construction started in 2009 and the project was completed in December 2013. The total project cost was estimated at approximately CDN$ 3.3 billion (US$ 3 billion). The final cost of the Port Mann Bridge replacement was CDN $3 billion (US$2.7 billion), CDN$ 300 million (US$ 278 million) over budget.[11] The project was implemented under a design-build contract at a cost of approximately $2.5 billion.
- The **North Fraser Perimeter Road Project** is a set of improvements to existing roads to provide an efficient, continuous route from New Westminster to Maple Ridge. TransLink is responsible for the section through New Westminster, while the Ministry is responsible for the segments from King Edward Street (Coquitlam) to Maple Ridge, including a new Pitt River Bridge to replace the aging swing bridges.
- The **South Fraser Perimeter Road Project** is primarily a new four-lane 80 km/h route along the south side of the Fraser River extending from Deltaport Way in southwest Delta to 176th Street and the Golden Ears Bridge connector road in Surrey/Langley. It will provide a continuous and efficient route to serve the port facilities, rail yards and industrial areas along this key economic corridor and will also benefit commuters.

The Pitt River Bridge and Mary Hill Interchange Project was one component of the proposed North Fraser Perimeter Road Project (NFPR), which extends from King Edward Street in Coquitlam to Maple Meadows Way in Maple Ridge.[12] The proposed section of the NFPR through New Westminster was never built due to municipal opposition.

The federal government announced a contribution of CDN$ 90 million (US$ 84 million) to the Pitt River Bridge – Mary Hill Bypass project in 2005, prior to official announcement of the Asia Pacific Gateway and Corridors Program. The B.C. Government provided the remaining CDN $108 million (US$ 101 million) required to complete the project.

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[10] The Asia Pacific Gateway Program was officially announced in 2006, but a contribution was made to the Pitt River Bridge and Mary Hill Bypass was made ion 2005 and retroactively credited to APGCI.

[11] 'Weak oversight' plagued B.C. megaproject, which insiders believe cost taxpayers millions CBC News September 7, 2017 https://www.cbc.ca/news/canada/british-columbia/weak-oversight-plagued-b-c-megaproject-which-insiders-believe-cost-taxpayers-millions-1.4144535

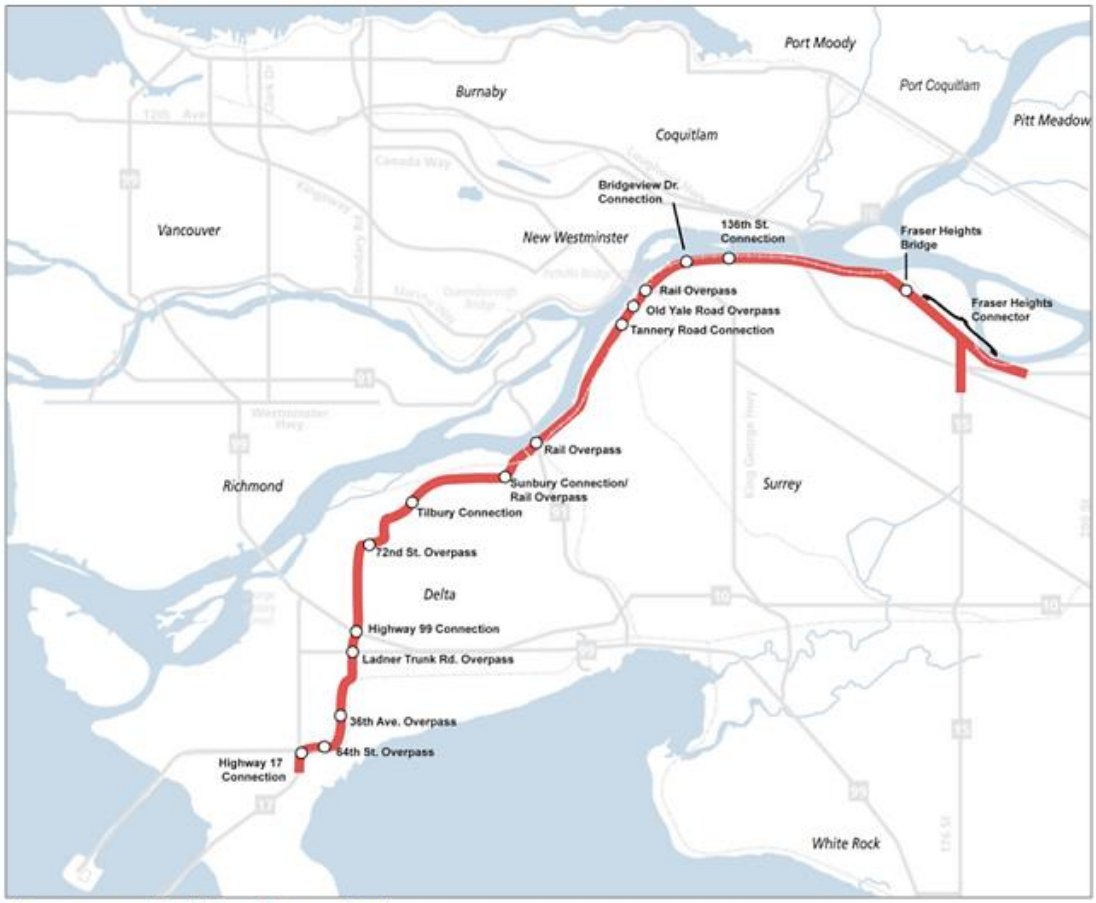
[12] Pitt River Bridge & Mary Hill Interchange Project Backgrounder BC Ministry of Transportation and Infrastructure December 2005 https://www.infrastructurebc.com/pdf/pitt%20river%20bridge%20backgrounder%2014-dec-05.pdf

2.4.2 South Fraser Perimeter Road

The CDN $365 million (US$ 338 million) federal contribution to the South Fraser Perimeter Road was the largest contribution made under the Asia-Pacific Gateways and Corridors Initiative, accounting for 45 percent of total gateway-related infrastructure contributions to Lower Mainland projects from 2005 to 2017. The total capital cost was budgeted at CDN$ 1.3 billion (US$ 1.2 billion).[13]

The South Fraser Perimeter Road project (SFPR) involved the construction of a new four-lane route, approximately 40 kilometers in length, located on the south side of the Fraser River. The road extends from the existing Highway 17/Deltaport Way interchange, through Delta and Surrey, and along the south bank of the Fraser River, with connections to Highways 1, 15, 17, 91, 99 and the Golden Ears Bridge. The figure below shows the alignment of the SFPR. The SFPR connects Deltaport and Fraser Surrey Docks to the TransCanada Highway (Highway 1).

Figure 2-5 South Fraser Perimeter Road



Alignment map of South Fraser Perimeter Road

2.4.3 Roberts Bank Rail Corridor

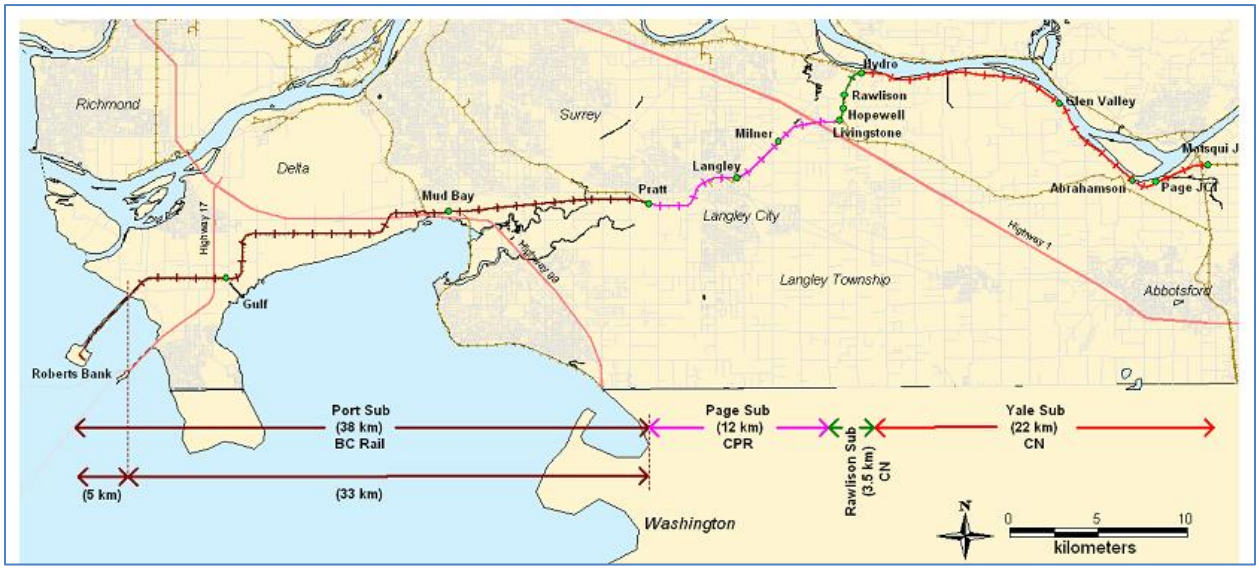
The Roberts Bank Rail Corridor is a combination of four rail subdivisions as shown in the figure below.

- B.C. Rail Port Subdivision (burgundy) extends from Roberts Bank to approximately 184 Street in Surrey.
- Canadian Pacific Railway Page Subdivision (pink) extends from approximately 184 Street in Surrey to just north of Highway 1 at 232 Street.

[13] Project Report South Fraser Perimeter Road Partnerships BC June 2011.

- Canadian National Railway Rawlison Subdivision (green) extends from just north of Highway 1 at 232 Street to approximately River Road in Fort Langley.
- Canadian National Railway Yale Subdivision (red) extends from approximately River Road in Fort Langley to Highway 11 in Abbotsford (Mission Bridge).

Figure 2-6 Roberts Bank Rail Corridor



Rail traffic on this corridor includes coal handled at Westshore Terminals and intermodal trains serving the Deltaport container terminal at Roberts Bank. Prior to 2007, the Roberts Bank Rail Corridor had 38 at-grade crossings on public roads, and growing port traffic was resulting in significant delays to road traffic.

A federal contribution of CDN$ 75 million (US$ 70 million) under the APGCI program was announced in 2007. Transport Canada took a lead role in planning for the corridor, sponsoring the Roberts Bank Rail Corridor: Road / Rail Interface Study[14] and working with a large stakeholder group including the BC Ministry of Transportation and Utilities, Port of Vancouver, Translink, Greater Vancouver Gateway Council, five municipalities and four railways (CN, CP, Southern Railway of B.C., and B.C. Rail) to develop a plan and funding agreements. The final plan included construction of 14 grade separations along the corridor at a total cost of CDN $307 million (US$ 284 million). The locations are shown in the figure below.

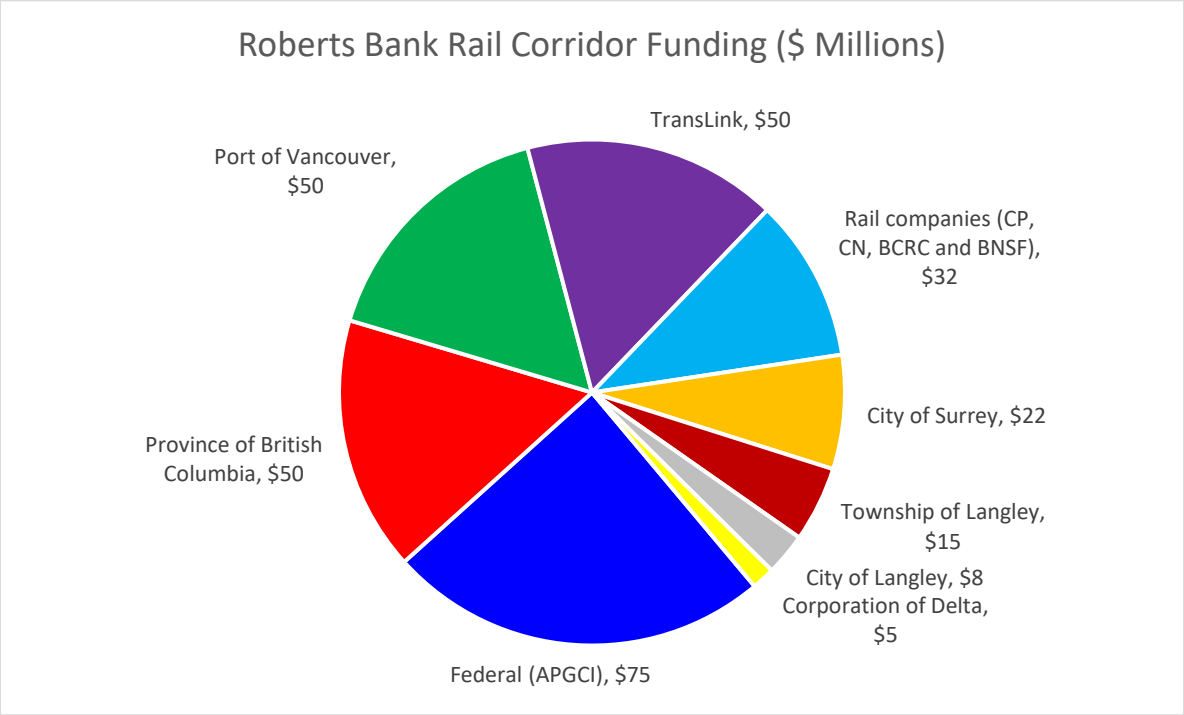
Figure 2-7 Roberts Bank Rail Corridor Project[15]

[14] Roberts Bank Rail Corridor: Road / Rail Interface Study ND LEA Inc. Consulting Engineers for Transport Canada February 2007.
[15] Source: Roberts Bank Rail Corridor TP 14689 Transport Canada.



Project costs totaled CDN$ 307 million (US$ 284 million), with funding provided as shown below.

Figure 2-8 Roberts Bank Rail Corridor Funding



2.4.4 North Shore Trade Area

In 2008, the North Shore Trade Area Study was conducted as part of Canada's on-going effort to support the Asia-Pacific Gateway and Corridor Initiative. Commissioned by Transport Canada, the Port of Vancouver, the British Columbia Ministry of Transportation and Infrastructure, TransLink and the Greater Vancouver Gateway Council, the North Shore Trade Area Study reviewed the transportation infrastructure issues in the area directly adjacent to the port terminals and Canadian National Railway corridor. The study focused on rail switching and road/rail traffic conflicts at level crossings and rail infrastructure requirements to support traffic growth at the largely bulk cargo marine terminals.

The North Shore Trade Area is located on the North Shore of the Burrard Inlet and is adjacent to the port terminals and along the rail corridor between the Lions Gate Bridge to the west and the Iron Workers Memorial Second Narrows Bridge (or Second Narrows Bridge) to the east. The area encompasses three

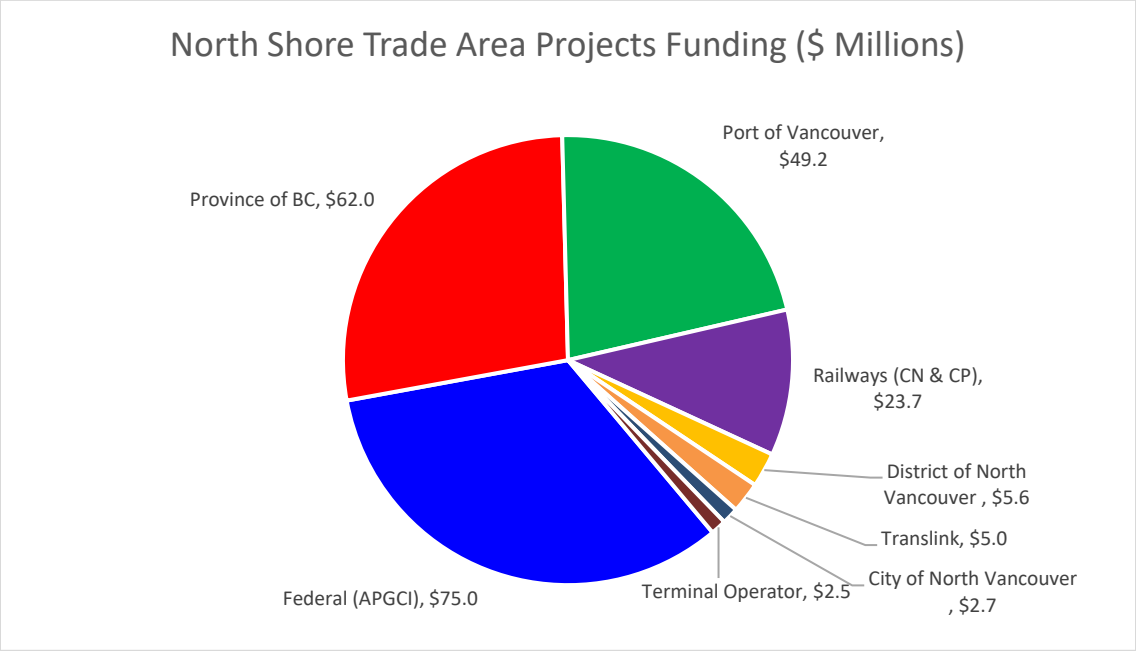
municipalities (City of North Vancouver, District of North Vancouver, and District of West Vancouver), as well as two First Nations (Squamish Nation and Tsleil-Waututh Nation).[16]

Following completion of the study, five projects were undertaken, including:

- Western Lower-Level Route Extension - Extension of Lower-Level Route from Garden Avenue to Marine Drive near Park Royal Shopping Centre, including a two-lane road and new bridge over the Capilano River.
- Philip Avenue Overpass Project – Grade separation.
- Low Level Road Realignment - Realignment and elevation of existing Low-Level Road to accommodate additional rail tracks for terminal expansion.
- Neptune/Cargill Grade Separation - Elimination of existing at-grade crossing at Low Level Road and 3rd Street East.
- Lynn Creek Rail Bridge and Brooksbank Avenue Underpass - Construction of a new concrete and steel rail bridge addition over Lynn Creek to widen the existing port rail corridor. Modification of underpass to accommodate additional rail tracks necessary for terminal expansion plans.

Total costs were initially estimated at CDN$ 223 million (US$ 206 million), with funding contributed by the federal government and multiple partners as shown below. Final project costs totaled CDN$ 283 million (US$ 206 million).

Figure 2-9 North Shore Trade Area Initial Funding Commitments



2.4.5 South Shore Trade Area

The South Shore Trade Area Study was conducted under the direction of Transport Canada and completed in February 2009. The South Shore Trade Area (essentially the Port of Vancouver) is a thin strip of land bordered on the north side by the waters of Burrard Inlet and to the south by residential and commercial neighborhoods of the City of Vancouver, and level crossings on the rail corridors serving

[16] North Shore Trade Area Study Final Report SNC Lavalin for Transport Canada September 30, 2008 p. 25.

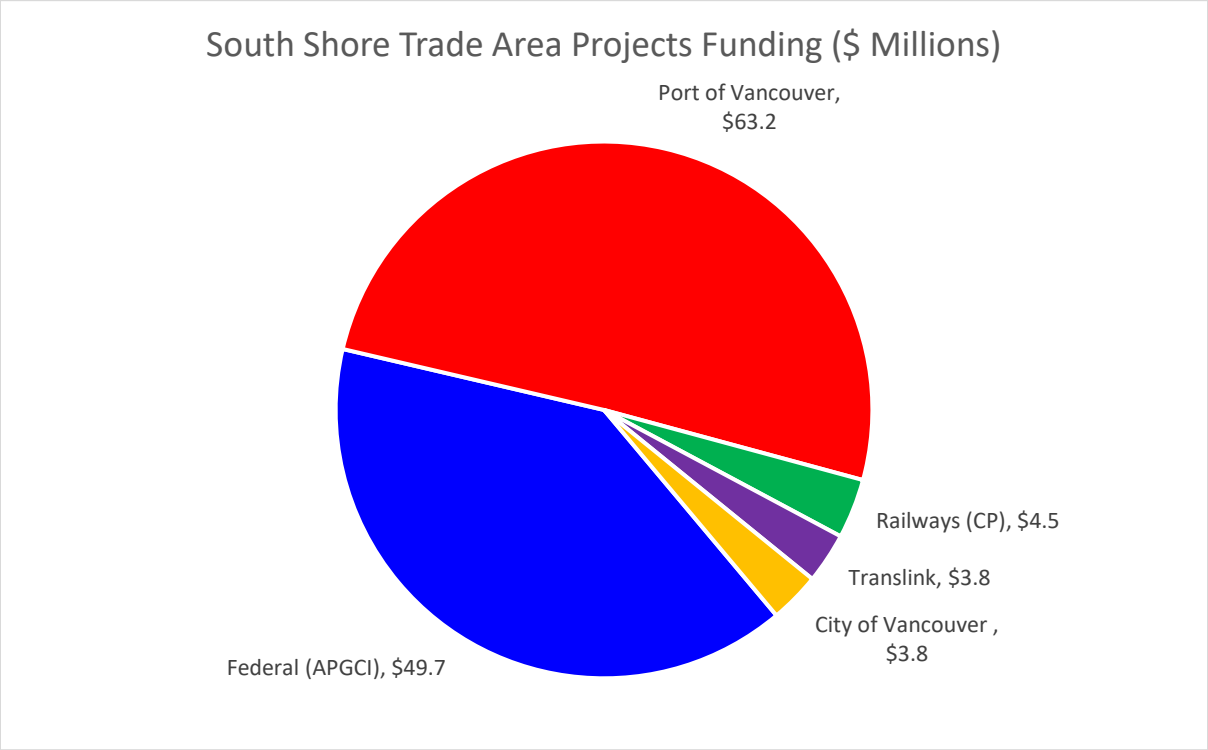
the South Shore terminals. This land contains the port terminals, the CPR corridor that connects them to the rest of Canada, and access roads for trucks serving the Vanterm and Centerm container terminals. The scope of the study also included level crossings on the rail corridors serving the South Shore Terminals.

The study recommended two projects:

- An elevated structure on Port property to separate truck traffic from rail operations serving the port terminals, including a pedestrian overpass at Victoria Drive.
- A grade separation over the Burrard Inlet line at Powell Street in the City of Vancouver. The Burrard Inlet Line is CN's direct access to the Centerm and Vanterm container terminals. Other CN traffic to the South Shore terminals is interchanged with CP and routed via CP's rail corridor along the south shore of Burrard Inlet.

The initial estimate of project costs was CDN$ 125 million (US$ 110 million), and funding details are shown in the figure below. Final cost of the projects totaled CDN $132 million (US$ 117 million).

Figure 2-10 South Shore Trade Area Funding



2.4.6 Deltaport Terminal, Road and Rail Improvement Projects

The Deltaport Terminal, Road and Rail Improvements project was undertaken as part of the Port of Vancouver's Container Capacity Improvement Program to increase Deltaport's container capacity by 600,000 TEUs to 2.4 million TEUs, mostly within the existing terminal, road, and rail footprint with no marine works. The project initially included four components:

- An overpass on the existing Roberts Bank causeway that will separate road and rail traffic.
- Reconfiguration of rail track and additional container handling equipment within the existing Deltaport Terminal.
- Additional rail track within the existing railway corridor and a portion of the Option Lands owned by the Province of British Columbia.

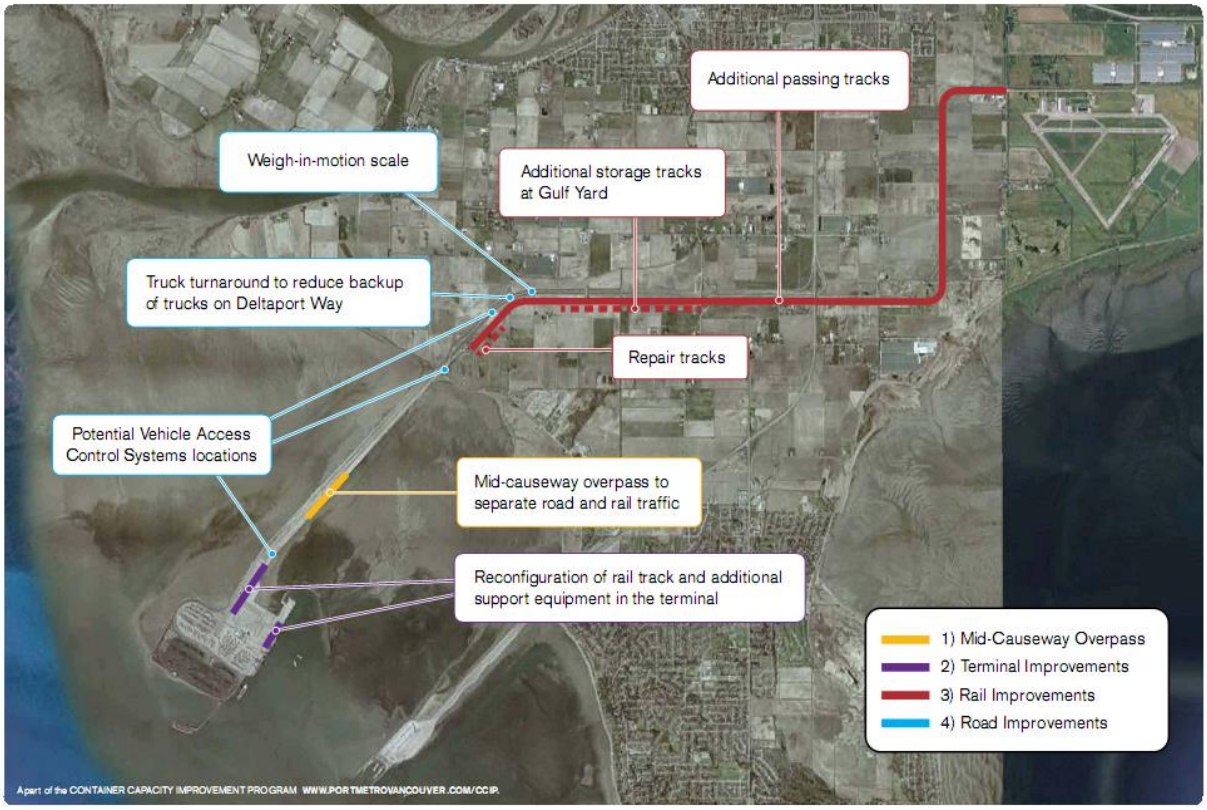
- Road improvements on Deltaport Way to improve the movement of container trucks at Deltaport.

A fifth project was subsequently added – a truck staging area on Deltaport Way for container trucks calling at Deltaport.

Federal funding was provided for two components of the project: the Roberts Bank Causeway grade separation and the Deltaport Truck Staging Area. The total cost of the Roberts Bank causeway grade separation was CDN $44.7 million (US$ 34 million), with a federal government contribution of a maximum of CDN $20 million (US$ 19 million) under the Asia-Pacific Gateway and Corridor Transportation Infrastructure Fund (APGCTIF). The Port of Vancouver contributed CDN $24.8 million (US$ 19 million).

Total cost of the Deltaport Truck Staging Area was CDN$ 18 million (US$ 14 million), shared equally between the federal government, Province of B.C., and the Port of Vancouver.

Figure 2-11 Deltaport Terminal, Road and Rail Improvements Project Locations



2.4.7 Highway 91 and 72nd Avenue Interchange

The Highway 91/17 and Deltaport Way Upgrade Project is a combination of improvements to the existing Highway 91, Highway 17, Highway 91 Connector and Deltaport Way to improve safety and efficiency. These upgrades will improve local and commercial travel time and reliability in the area, reduce conflicts between commercial vehicles and other traffic, and support community and economic development. They also complement the Alex Fraser Bridge and 72nd Avenue Interchange improvements. The Highway 91/17 and Deltaport Way Upgrade Project included:

- Highway 91 at Nordel Interchange—upgraded ramps to and from Delta, improved acceleration and deceleration lanes and additional through-lanes for Nordel Way traffic crossing over Highway 91.

- Highway 91 Connector at Nordel Way intersection upgrades—combination of direct access roads and additional turning lanes to remove one signal light and improve all movements, including significantly improved access to and from the Nordel Way commercial vehicle inspection station and truck parking area.
- A new interchange at Highway 17 and Highway 91 Connector (Sunbury) and improvements to the River Road connection—replace the existing signalized intersection and eliminate the need for an at-grade rail crossing to access the highway.
- Intersection improvements at Highway 17 at 80thStreet (Tilbury)—upgrade the connection from 80th Street to Highway 17 westbound, to improve merging and reduce queuing.
- 27B Avenue to Deltaport Way access improvements—providing a smoother, safer merge for westbound traffic.
- 27B Avenue upgrades between Deltaport Way and 41B Street—roadway widening and upgrading in cooperation with Tsawwassen First Nation to improve access to industrial lands and the Canadian Border Service Agency's container examination facility.

These projects can be viewed as enhancements to the South Fraser Perimeter Road project (now Highway 17) following its completion in December 2013. Of these projects, the last two (27B Avenue projects) are being undertaken primarily to benefit port truck traffic at Deltaport and the newly developed Tsawassen First Nations industrial lands.

The cost of the entire project was estimated at CDN$ 260 million (US$ 200 million), with CDN $81.7 million (US$ 63 million) from the federal government under the National Infrastructure Component (NIC) of the New Building Canada Fund; CDN$88 million (US$ 68 million) from the Province of BC; CDN$ 88 million (US$ 68 million) from the Port of Vancouver; and CDN$ 2.3 million (US$ 1.8 million) from the Tsawassen First Nation.

2.5 Major Projects: National Trade Corridors Fund 2018-2021

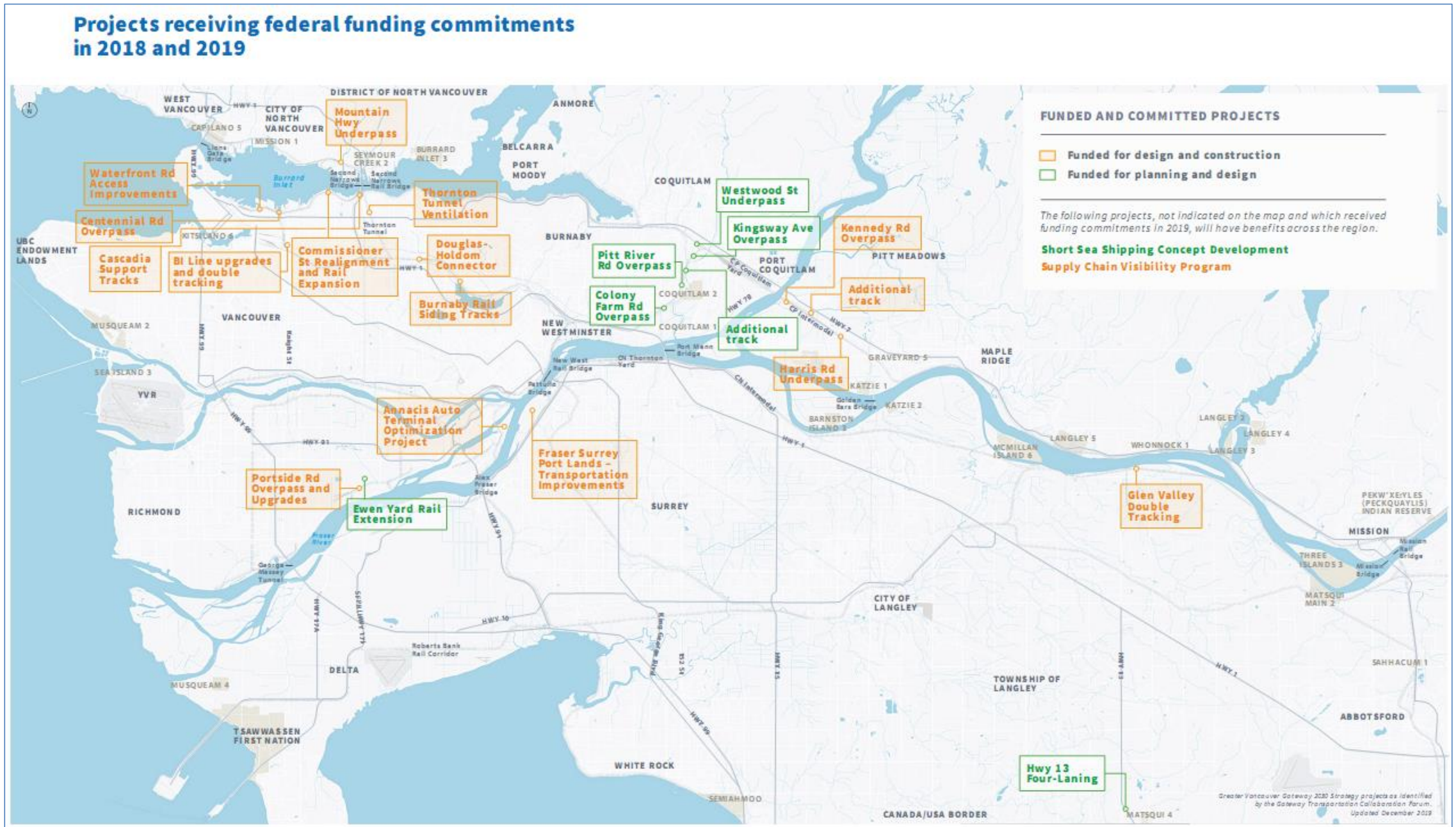
Major funding commitments under the Asia Pacific Gateways and Corridors Initiatives are described below. The first call for projects was issued in 2017 and funding announcements were made in 2018. For many of these projects, full cost information is not available; however, information on federal funding commitments[17] and Port of Vancouver project funding estimates[18] has been publicly released.

Lower Mainland projects for which funding commitments were made under the NTCF up to November 2020 are shown in the figure below.

[17] "Projects funded by the National Trade Corridors Fund" Transport Canada https://tc.canada.ca/en/programs/projects-funded-national-trade-corridors-fund

[18] Summary of cost-benefit/impact analyses Projects and initiatives to be cost recovered through GIF 2022 Vancouver Fraser Port Authority November 2020

Figure 2-12 Lower Mainland Projects Receiving Federal Funding Commitments in 2018 & 2019



Major projects for which funding commitments have been made are highlighted below.

2.5.1 North Shore Corridor Capacity Improvements

The North Shore Corridor Capacity Improvements project includes the following components:

- Thornton Rail Tunnel Ventilation Improvements: The Thornton Rail Tunnel, which extends from the Willingdon Junction area of Burnaby to the Second Narrows Rail Bridge, constrains capacity because a delay of 20 minutes between train transits is required to ventilate the tunnel. This project will enhance the ventilation system to reduce the time required between trains.
- Burnaby Rail Siding Tracks: CN plans to construct an 18,900 ft siding between Willingdon Junction and a level crossing at Piper Avenue for staging of traffic through the Thornton Rail Tunnel. Capacity for North Shore traffic routed via Thornton Yard and the New Westminster Railway Bridge is constrained because the 3-mile (4.8 km) segment between Burrard Inlet and Willingdon Junction in Burnaby is only a single track. Consequently, a train must have a clear track from south of the NWRB to north of the Second Narrows bridge before it can proceed. Transit time is approximately 30 minutes. The new track will increase capacity by facilitating staging of trains between the Second Narrows and New Westminster Rail Bridges.
- Douglas/Holdom Overpass: A four-lane overpass, elevating and extending Holdom Avenue south over the rail corridor and Still Creek and connecting with Douglas Road at Norland Avenue. This will enable staging of trains on the new rail siding by eliminating existing at-grade crossings.

The federal contribution to this package of projects is $76.9 million, and the Port of Vancouver committed $58.0 million. Total cost is unknown as the amount to be committed by CN has not been disclosed.

2.5.2 Burrard Inlet Road and Rail Improvements Project

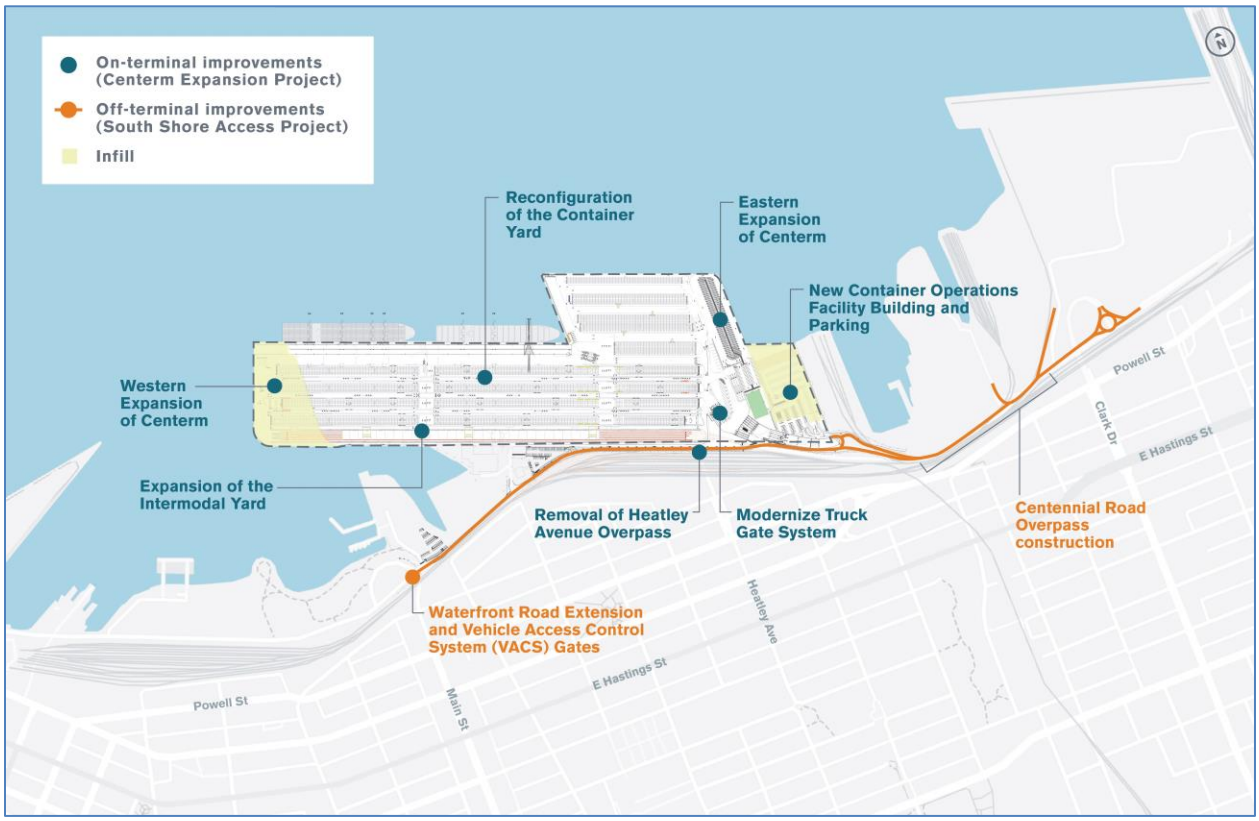
These projects are associated with the Centerm Expansion and South Shore Access Project. Construction is currently under way to expand the capacity of the DP World (Centerm) container terminal on the south shore of Burrard Inlet from 900,000 to 1.5 million TEUs per year. Completion of the Centerm expansion is scheduled for the 2nd quarter of 2022.

The Burrard Inlet Road and Rail Improvements Project includes the following components:

- Centennial Road Overpass:
- Waterfront Road Access Improvements: Changes to Waterfront Road to create a continuous port road from Canada Place to Highway 1
- Commissioner Street Road and Rail Expansion: Project to widen and realign Commissioner Street to the north between Nanaimo Street and Slocan Street to make room for future installation of additional rail tracks next to current tracks, from four tracks to six tracks (to be led by CP).
- Rail improvements along CP Cascade Subdivision, to be led by CP.

The federal contribution to this package of projects is CDN$ 67.6 million (US$ 52 million), and the Port of Vancouver has committed CDN$ 55.0 million (US$ 42 million). Total cost is unknown as the amount to be committed by CP has not been disclosed.

Figure 2-13 Centerm Expansion and South Shore Access Projects



2.5.3 Harris Road Underpass and Kennedy Road Overpass

These projects will facilitate expansion of CP's intermodal facility in Pitt Meadows, which is currently bracketed by a level crossing at each end of the facility. The proposed improvements include:

- A four-lane underpass to allow Harris Road to pass under the railway
- A two-lane overpass to allow Kennedy Road to pass over the railway.

The federal contribution to this package of projects is CDN$ 48.8 million (US$ 38 million), and the Port of Vancouver has committed CDN$ 61.0 million (US$ 47 million). Total cost is unknown as the amount to be committed by CP has not been disclosed, and no detailed plans for expansion of the intermodal facility have been announced.

2.5.4 Annacis Auto Terminal Optimization

Historically there were two marine terminals handling auto traffic on the Fraser River: WWL Vehicle Services Canada Ltd. on Annacis Island in Delta, and Fraser Wharves Ltd. (owned by Mitsui) downstream in Richmond. Fraser Wharves closed and sold the terminal to the Port of Vancouver in March 2013. The site has been used for overflow traffic by WWL periodically. The project consolidates these two existing auto terminal operations into one, expand and optimize Annacis Auto Terminal (AAT) to handle both auto terminal operations, and repurpose the Richmond Terminal (formerly Fraser Wharves) to handle other export trade related operations and development.

Total cost of the project is estimated at CDN$ 85 million (US$ 65 million), with half from a federal contribution under the NTCF and half from the Port of Vancouver.

2.5.5 Burrard Inlet Line Double Tracking

The Burrard Inlet (BI) Line is CN's direct access to the Centerm and Vanterm container terminals. It is currently a single-track rail line approximately 2 km long that connects the False Creek Flats to the Burrard Inlet waterfront.

The BI Line Double Tracking Project will add capacity to optimize the use of switching windows on the Heatley Diamond crossing. At this location, the BI Line crosses the CP Cascade Subdivision, which is used for freight service and accommodates the West Coast Express commuter rail service. Due to conflicts with competing rail moves on the CP corridor, this crossing limits the amount of time that BI Line can be used. Adding a second track will allow for simultaneous rail movements to and from the south shore, enabling the movement of more volume within the same timeframe, thereby mitigating the impact of increased volumes on the CP Cascade Subdivision. The project will increase capacity and operational fluidity on rail corridors for both CN and CP, providing an increase in overall rail capacity to the South Shore Trade Area.

The federal contribution to this package of projects is CDN$ 22.5 million (US$ 17 million), and the Port of Vancouver has committed CDN $29.0 million (US$ 22 million). Total cost is unknown as the amount to be committed by CN has not been disclosed.

2.5.6 Portside Blundell Overpass and Upgrade

This bundle of projects is designed to reduce road congestion and road/rail conflicts at the Port of Vancouver's Richmond Logistics Hub, a 700-acre off-dock transportation and distribution site on the Fraser River in Richmond. Project components include:

- Widening of Blundell from 2 lanes to four lanes with provisions for truck turning lanes. Blundell Road provides the primary access to the logistics and warehousing facilities on the west side of the Fraser Richmond Port Lands. The current configuration limits opportunities for transit and constrains movement of tractor trailer movements.
- Portside Road overpass and grade separation. Portside Road is located at the eastern terminus of CN's Ewen Yard. As a result, the numerous switching activities from the yard result in some of the highest crossing blockage rates in the region. Currently the crossing experiences 37 blockages a day impeding traffic for over 2 hours each day. The Portside Road overpass and grade separation will elevate the Portside Road and Blundell Road intersection to provide a grade separation of the rail line at the head of the Ewen Yard line, increases switching efficiency of the Ewen Yard and access to and efficiency of off-dock facilities.

The federal contribution to this package of projects is CDN $39.4 million (US$ 30 million), and the Port of Vancouver has committed CDN$ 42.0 million (US$ 32 million).

2.5.7 Fraser Surrey Port Lands Transportation Improvements

The Vancouver Fraser Port Authority is leading proposed road and rail improvements within the Fraser Surrey Port Lands to alleviate traffic congestion and rail crossing delays and improve the ability of port tenants to move trade.[19]

The proposed project includes:

- Creation of a Timberland Road (south) route for traffic to travel through the Fraser Surrey Port Lands.
- Conversion of the Timberland three-way intersection to a standard four-way intersection.
- Implementation of vehicle access control system (VACS) gates.

[19] "Fraser Surrey Port Lands Transportation Improvements Project" Vancouver Fraser Port Authority https://www.portvancouver.com/projects/road-and-rail/fraser-surrey-port-lands-transportation-improvements-project/

- Upgrades to all at-grade railway crossings to meet federal standards (seven crossings).
- Implementation of street lighting, relocation of closed-circuit television (CCTV) cameras, and integration of camera feeds into the port authority's operations center.

The federal contribution to this package of projects is CDN$ 12.2 million (US$ 9 million), and the Port of Vancouver has committed CDN$ 12.8 million (US$ 10 million).

2.5.8 Glen Valley Double Tracking

Glen Valley Double Tracking would increase the capacity of the rail corridor to support anticipated growth in trade through the Port of Vancouver. Double tracking would address a significant current bottleneck created by 3.7 miles of single track within the 25-mile double-track rail corridor between the end of the Directional Running Zone (DRZ) and CN's Thornton Yard.

Located near Abbotsford, B.C. on the CN Yale Subdivision, this 3.7-mile section of single track is operated bi-directionally and is within the corridor that CN and CP use to access the Roberts Bank Rail Corridor and terminals at Roberts Bank. The project would add a second track in the corridor, removing the conflict between opposing train movements causing congestion and delays while one or more trains wait for the single-track section to clear. The project would increase capacity and fluidity to better accommodate the anticipated 50% growth in train volumes to and from import and export facilities at Roberts Bank and in the rest of the Lower Mainland.

The federal contribution to this project is CDN$ 20.0 million (US$ 15 million), and the Port of Vancouver has committed CDN$ 10.0 million(US$ 8 million). Total cost is unknown as the amount to be committed by CN has not been disclosed.

2.5.9 Other Projects

Other port-led projects funded under the NTCP in the Lower Mainland include:

- A contribution of CDN$ 3.8 million (US$ 2 million) for the Mountain Highway Underpass project which will facilitate access of oversize loads to the Lynnterm terminal on the North Shore.
- A federal contribution of CND$ 6.5 million (US$ 5 million) for the Port of Vancouver's Supply Chain Visibility project develop a near real-time dashboard to measure end-to-end performance of the supply chain for all cargo moving through the Port of Vancouver and the Port of Prince Rupert.
- Contributions for Port of Vancouver planning studies for grade separation projects, including CDN$ 2.1 million (US$ 1.6 million) for the Pitt River Rd and Colony Farm Rd Rail Overpasses Project Design and CDN $1.1 million (US$ .8 million) for the Westwood St and Kingsway Ave Grade-Separations Project Design.

Several contributions have also been announced for private sector projects, including:

- A contribution of CDN $3.6 million (US$ 2.8 million) to Southern Railway of BC for track improvements on Annacis Island.
- A contribution of CDN $7.5 million (US$ 6 million) for the Fibreco Terminal Rail Jett Expasnion. Fibreco is a marine terminal on the North Shore of Burrard Inlet formerly used for exports of wood chips which has been converted to handle grain exports.
- A contribution of CDN $17.5 million (US$ 13 million) for the Ray-Mont Terminal Capacity Expansion. Ray-Mont operates an off-dock terminal transloading grain from hopper cars to containers for export.

2.6 The Port of Vancouver's Role in Regional Planning & Advocacy

The Port of Vancouver (since 2008 the Vancouver Fraser Port Authority) has played a major and increasing role in regional transportation planning and project delivery which has contributed substantially to the region's success in obtaining federal contributions for Lower Mainland Infrastructure projects. With the new

NTCF program, VFPA has taken a lead role in planning and delivering projects throughout the Lower Mainland.

The Lower Mainland region of British Columbia's (Metro Vancouver) success in obtaining federal funding for regional freight-related transportation infrastructure can be attributed to a collaborative approach to regional freight planning and advocacy which was pioneered by the Greater Vancouver Gateway Council.

The Greater Vancouver Gateway Council (GVGC) was formed in 1994 to pursue a vision for Greater Vancouver as the Gateway of Choice for North America, able to capitalize on opportunities from expanding world trade and tourism. The GVGC comprises senior executives from industry, government, and academia. It was structured as a private sector led organization with two classes of membership:

- Voting members which included representatives of major transportation service providers including the Port of Vancouver, Vancouver International Airport, BC Marine Terminal Operators Association, BC Trucking Association, BC maritime Employers Association, Class 1 railways (CN, CP and BNSF), Southern Railway of BC, Translink, and the Shipping Federation of Canada.
- Resource members including federal government departments (Transport Canada and Western Diversification), BC Ministry of Transportation and Infrastructure, Government of Alberta, Metro Vancouver, Asia Pacific Foundation of Canada, Business Council of British Columbia, Vancouver Chambers of Commerce; Metro Vancouver, and WESTAC (a Western Canadian transportation forum).

The GVGC set the agenda for regional transportation policy by defining a Major Commercial Transportation System for the region, based on members' input:

> *Work on defining the Major Commercial Transportation System (MCTS) began in 1999 in a Technical Memorandum to the TransLink Strategic Transportation Plan 2000-2005. Since this submission, the Greater Vancouver Gateway Council has initiated further work to refine definition and prioritization to advocate for the integration of the MCTS into transportation planning processes.*
>
> *The vision for the MCTS was established in 1999 to be: "An efficient and internationally competitive regional commercial transportation system for the Gateway." Based on this vision, the MCTS established five main objectives. The MCTS would:*
>
> - *Provide a continuous network for efficient commercial vehicle operations in the region.*
> - *Accommodate future growth in goods, services, and international passenger movements.*
> - *Enable 24-Hour unrestricted commercial vehicle traffic use.*
> - *Provide rail movements operating free of road intersection constraints.*
> - *Enhance connectivity to north-south and east-west trade corridors.*
>
> *Potential applications of the MCTS include:*
>
> - *Advocacy by freight transportation operators and users for the set of routes most critical to their operations;*
> - *Prioritization of funding and planning for transportation improvements at all levels of government; or.*
> - *Active monitoring of MCTS network performance and benchmarking.*[20]

[20] Major Commercial Transportation System Phase 1 Report Intervistas Consulting for Greater Vancouver Gateway Council August 2001 p. 7.

The MCTS for the regional road system was defined in a Phase 1 report in 2001, followed by a report on the rail system in 2003[21] and shortsea shipping in 2005.[22]

These reports formed the starting point for more formal planning efforts. In 2004 Transport Canada funded the Lower Mainland Rail Infrastructure Study[23] which developed a model to "evaluate the capacity of the railway system in the Lower Mainland to accommodate freight traffic forecasts and forecast passenger rail traffic, and to determine deficiencies and required infrastructure improvements. This study confirmed that most of the improvements identified in the Major Commercial Transportation System: Rail Capacity Study undertaken by the Gateway Council are required, as well as some additional improvements, in order to accommodate the very substantial increase in traffic expected over the planning period to 2021"[24].

Following completion of this study, Transport Canada took a more direct role in planning for Lower Mainland infrastructure projects, leading technical studies for the Roberts Bank Rail Corridor, North Shore Trade Area and South Shore Trade Area in collaboration with the BC Ministry of Transportation and Infrastructure, Translink, the Greater Vancouver Gateway Council, and the Vancouver Fraser Port Authority.

In 2014 as funding under the APGCI was declining a new organization, the Gateway Transportation Collaboration Forum (GTCF), was established.

> *The Gateway Transportation Collaboration Forum (GTCF), established in summer 2014, is a collaborative effort to ensure the gateway is ready to manage growing trade. The GTCF is primarily focused on identifying gateway-related projects of national significance: highways and major roads and bridges, rail infrastructure, port infrastructure and disaster mitigation infrastructure.*
>
> *The GTCF Steering Committee consists of senior executives from Transport Canada, BC Ministry of Transportation and Infrastructure, Vancouver Fraser Port Authority, TransLink, and Greater Vancouver Gateway Council. Transport Canada is responsible only for facilitating collaboration and consensus among members in support of the committee's mandate and does not participate in the evaluation or endorsement of recommended transportation infrastructure projects. Transport Canada also does not discuss project funding nor is it party to funding applications.* [25]

The Vancouver Fraser Port Authority's role in regional planning efforts has increased substantially. Following completion of the Lower Mainland Rail Infrastructure Study in 2004, the Port of Vancouver commissioned Mainline Management to develop and maintain a model of the Lower Mainland rail network based on RTC modelling software. In 2014 VFPA engaged Mott MacDonald to update and enhance the regional rail model, which is the only existing model of the Lower Mainland network. VFPA uses the results of this modelling in support of applications for federal project funding.

VFPA has allocated significant resources to planning and consultation for Gateway Collaboration Transportation Forum planning and consultation activities since 2014. These costs are part of the project costs VFPA is seeking to recover from terminal operators under their Gateway Infrastructure Fund 2022 proposal. The cost of these activities is given as CDN $8 million (US$ 6 million) since 2014;[26] VFPA indicate that an application for a federal contribution for these costs under the NTCF was submitted in 2020, and if federal funds are received the amount to be recovered from terminal operators will be reduced.

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[21] MCTS Rail Capacity & Regional Planning Issues Overview Greater Vancouver Gateway Council February 2003.
[22] Report on potential for expanded water borne transportation (known as Short Sea Shipping) Greater Vancouver Gateway Council February January 2005.
[23] Lower Mainland Rail Infrastructure Study IBI Group for the Greater Vancouver Gateway Council December 2004.
[24] Lower Mainland Rail Infrastructure Study p. 1.
[25] Greater Vancouver Gateway 2030 Draft Gateway Transportation Collaboration Forum May 2017 p. 7.
[26] Summary of cost-benefit/impact analyses for projects and initiatives to be cost recovered through GIF2022 VFPA November 2020 p. 2.

With the new NTCF program, VFPA has taken a lead role in planning and delivering projects throughout the Lower Mainland. For example, the Holdom Overpass project in Burnaby is being undertaken as part of the North Shore Corridor Capacity Improvement Project to increase rail capacity for North Shore rail traffic. VFPA will guide the planning, design, and construction of the overpass. The project will be funded by the VFPA, Canadian National Railway and the federal government. The City of Burnaby will take ownership of the overpass on project completion.[27] There are no financial contributions by the City of Burnaby required for this project to proceed.

[27] "Holdom Overpass Project" City of Burnaby https://www.burnaby.ca/City-Services/Policies--Projects---Initiatives/Holdom-Overpass-Project.html

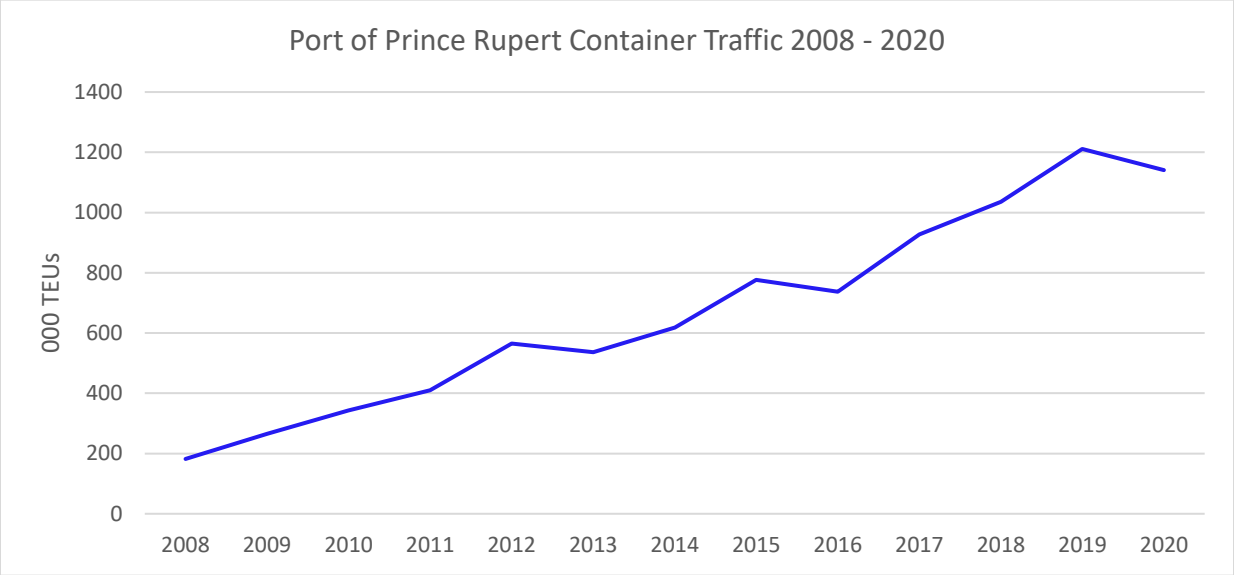
3. PORT OF PRINCE RUPERT

3.1 Background

In 1972, the Port of Prince Rupert was declared a National Harbour. The creation of the Prince Rupert Port Authority as a governance body occurred in 1997 and has overseen the Port's transition from a regional resource port to an emerging North American trade gateway.

In 2020 the Port of Prince Rupert handled over 31 million tonnes of cargo, making it the third largest Canadian port after Vancouver and Montreal. Port of Prince Rupert container cargo traffic levels from 2008 to 2020 are shown below.

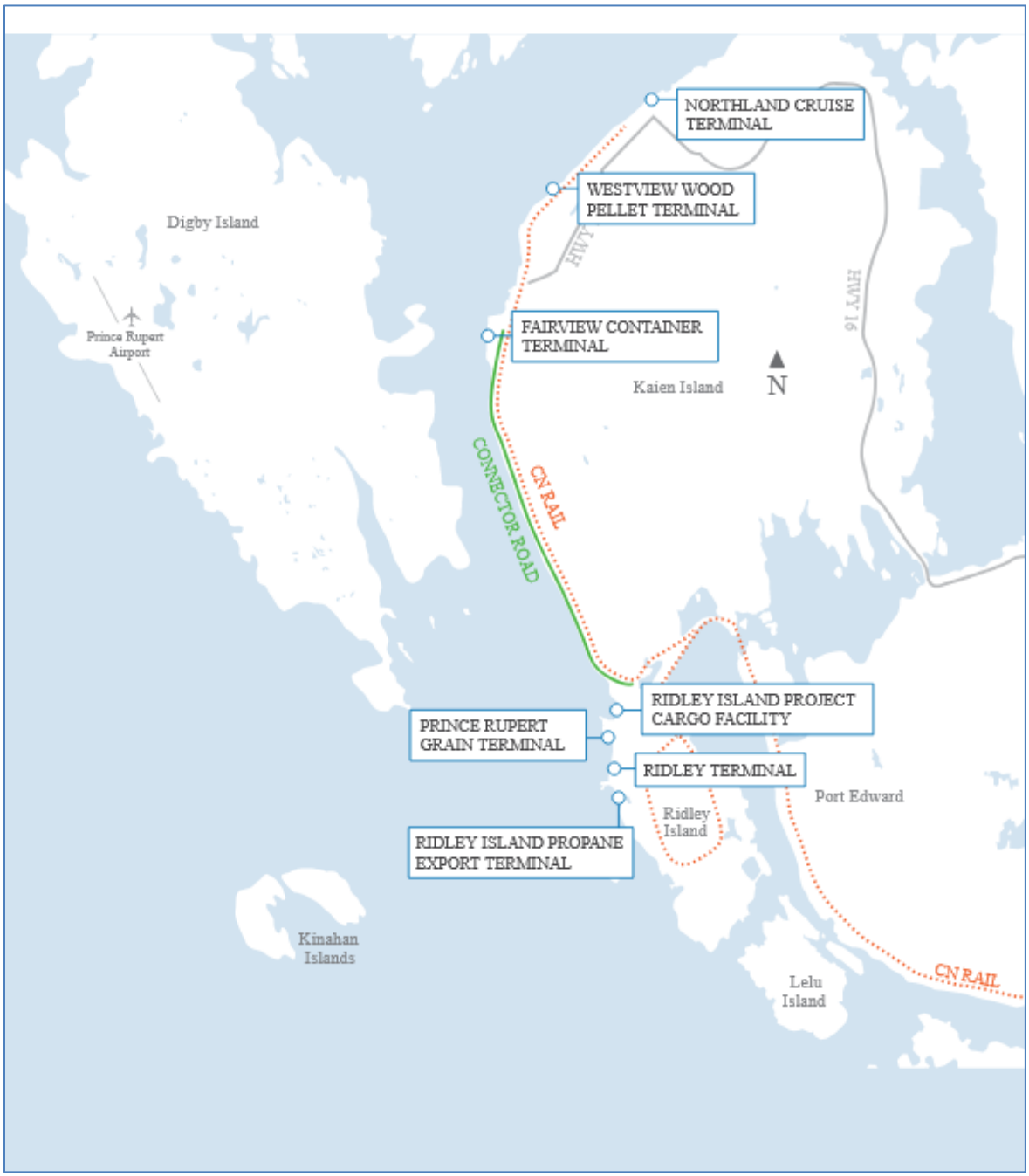
Figure 3-1 Port of Prince Rupert Container Traffic 2008 – 2020



3.2 Key Infrastructure

The locations of marine terminals at the Port of Prince Rupert are shown in the figure below. Port operations are carried out in two locations. Prince Rupert Grain Terminal and Ridley Terminals, including the Ridley Island Propane Export Terminal marine loading facility are located on Ridley Island. The Fairview container terminal, Westview Wood Pellet Terminal and the Northland Cruise Terminal are located on Kaien Island. All cargo terminals are served by CN Rail.

Figure 3-2 Port of Prince Rupert Marine Terminals[28]



There is also a new facility located on Watson Island in proximity to the PRPA, the Pembina Prince Rupert Terminal. This is a small-scale rail-served terminal moving Liquid Propane Gas (LPG) from rail cars to

[28] Source: Port of Prince Rupert https://www.rupertport.com/terminals/

vessels destined for international markets. Dry commissioning was completed on March 19, 2021 and Pembina began loading propane onto vessels destined for international markets on April 9, 2021. The operator is looking to expand the facility.[29]

3.2.1 Prince Rupert Grain Terminal

Prince Rupert owns and operates Canada's largest grain terminal on the West Coast, handling primarily wheat, barley, and canola from the Canadian prairies. The facility has an annual export capacity more than seven million tonnes, offering the highest throughput rate of any grain terminal in Canada. Opened in 1985, the terminal was built to improve Canada's ability to export grain and oilseeds. Prince Rupert Grain handles wheat, barley, and canola shipped by rail directly from grain elevators on the prairies to the terminal. The terminal also processes and exports by-products such as grain screening pellets, feed screenings, mixed feed oats, and associated commodities. The terminal handled 5.3 million tonnes of grain in 2020.

3.2.2 Ridley Terminals Inc.

Ridley Terminals Inc. owns and operates one of the most advanced bulk commodity terminals in its market, handling metallurgical coal, thermal coal, and petroleum coke, primarily from British Columbia and Alberta. The terminal was constructed in 1984 and operated as a federal Crown Corporation until 2019. The terminal was sold to a private sector/First Nations consortium in 2019, including Riverstone Holdings LLC, AMCI Group, and a limited partnership owned by the Lax Kw'alaams Band and the Metlakatla First Nation.

The terminal has an annual throughput capacity of 18 million tonnes. The facility handled 13.6 million tonnes of coal in 2020.

Figure 3-3 Ridley Terminals & Prince Rupert Grain Terminal[30]



3.2.3 Ridley Island Propane Export Terminal

AltaGas' Ridley Island Propane Export Terminal (RIPET), Canada's first propane export facility, is located on a 24-acre brownfield site on Digby Island approximately 10 km south of Prince Rupert, British Columbia.

[29] https://www.pembina.com/operations/projects/prince-rupert-terminal/
[30] Source: Ridley Terminals Inc. https://www.rti.ca/tour-rti/

AltaGas) propane export facility is on property sub-leased from Ridley Terminals. RIPET can store 600,000 bbls or 1.2 million tonnes of propane per year. The terminal offloads approximately 50 to 60 rail cars of liquid propane from B.C. and Alberta each day. It transfers the propane to intermediate pressurized storage bullets and then cools it so that it can be stored and shipped at atmospheric pressure. Chilled propane is then loaded onto Very Large Gas Carriers (VLGC) and delivered to global markets through approximately 20 to 30 marine transport shipments per year. The first shipment from the terminal was made in May 2019.

3.2.4 Westview Wood Pellet Terminal

Owned and operated by Pinnacle Renewable Energy Inc., Westview Wood Pellet Terminal was opened in January 2014 as the first purpose-built wood pellet export facility in North America. The facility has an annual capacity to ship 1.25 million tonnes of wood pellets to world markets for use in power generation. Wood pellets are made from waste wood material such as logging waste and sawmill residue.

The Westview Wood Pellet Terminal is a wood pellet receiving, storage and shipping facility, located on the West Coast of Kaien Island. It receives wood pellets from rail cars, stores pellets in metal silos, and loads wood pellets into bulk cargo ships bound for overseas markets in Western Europe and Asia. Specifically designed with soft handling technologies to reduce pellet breakage, the terminal also features best available technology for dust suppression. Traffic totaled almost 1.5 million tonnes in 2020.

3.2.5 Fairview Container Terminal

Fairview as the PRPA's first terminal. It was originally constructed in 1972 as a break-bulk cargo terminal. The break-bulk terminal was converted into a container terminal with an annual handling capacity of 500,000 TEUs in October 2007. Maher Terminals Holding Corporation managed the terminal operations until the rights of the terminal operations were purchased by DP World Canada in 2015. Fairview Terminal's capacity was expanded to 900,000 TEUs in 2015 and 1.3 million TEUs in 2017. Work is now underway on an additional expansion to yield a sustainable practical capacity of 1.8 million TEUs by Q4 2023.

3.3 Port-Related Infrastructure Funding

A summary of federal contributions related to transportation infrastructure for the Prince Rupert Gateway is shown below.

Figure 3-4 Prince Rupert Gateway Federal Contributions 2007-2021

Prince Rupert Gateway Federal Contributions 2007 - 2019 $ Millions							
			Program				
Year	**Infrastructure**	**Project**	**APGCI**	**WD**	**APGCI + WD 2007 - 2018**	**NTCF 2018 - 2021**	**Total**
2007	Terminal	Fairview Terminal Prince Rupert		$30.0	$30.0		$30.0
2007	Grade Separation	Grade Separations Smithers & Terrace	$7.0		$7.0		$7.0
2008	Security	Prince Rupert Container Security	$28.0		$28.0		$28.0
2010	Local Road	River Road Prince George	$3.5		$3.5		$3.5
2013	Road/Rail	Ridley Island Road Rail & Utility Corridor	$15.0		$15.0		$15.0
2018	Rail	Ridley Island Road-Rail-Utility Corridor Expansion			$0.0	$3.7	$3.7
2018	Rail	Zanardi Bridge and Mainline Expansion - Engineering and Design Work			$0.0	$3.2	$3.2

2018	Road/Rail	Fairview-Ridley Connector Corridor			$0.0	$15.0	$15.0
2019	Rail	Ridley Island Export Logistics Platform			$0.0	$49.9	$49.9
2019	Rail	Zanardi Bridge, Causeway and Rail Expansion			$0.0	$60.6	$60.6
2019	Terminal	Metlakatla South Kaien Import/Export Logistics			$0.0	$43.3	$43.3
Total			$53.5	$30.0	$83.5	$175.7	$259.2

3.4 Major Projects: Western Diversification & APGCI Initiative 2005-2017

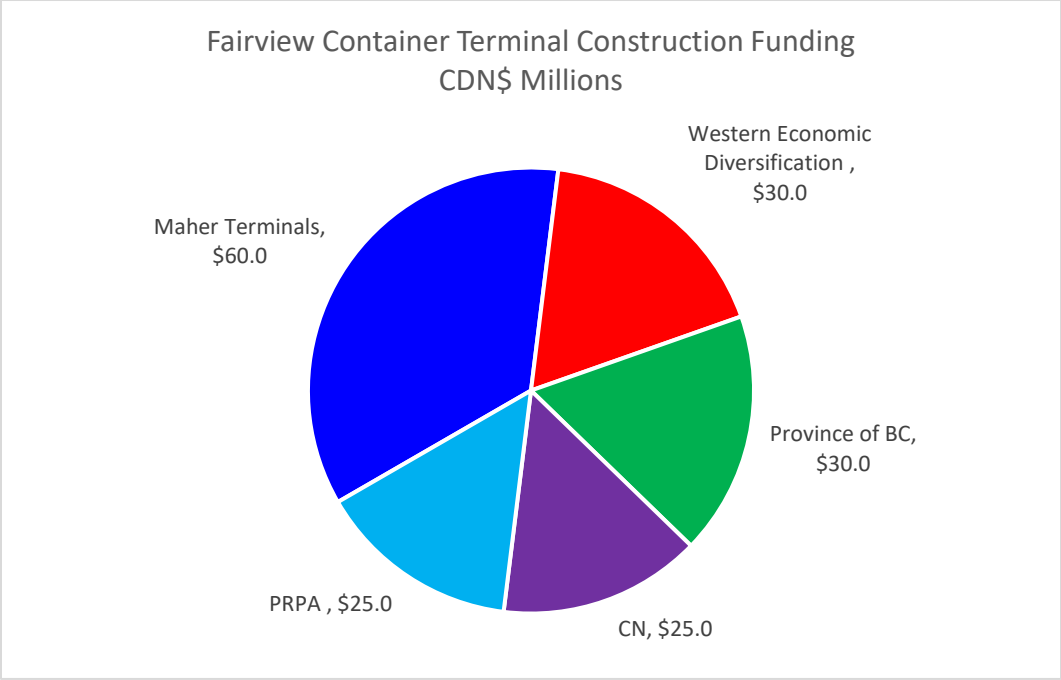
Canadian federal government contributions related to port operations at Port of Prince Rupert totaled CDN$ 83.5 million (US$ 79 million) from 2005 to 2017. Of this, $73 million (US$ 69 million) was allocated to projects directly associated with the Port; the remaining CDN $10.5 million (US$ 10 million)) was allocated to road improvements at inland communities, including Terrace, Smithers, and Prince George.

3.4.1 Construction of Fairview Container Terminal

The federal government assisted in funding construction of the Fairview Container Terminal through a $30 million conditional grant from Western Diversification Canada. Summary of annual plans of recipient: The grant was fully disbursed in the 2006-2007 fiscal year. The Fairview Container Terminal was converted from a break bulk terminal to a fully functioning container terminal.

The terminal was designed with an initial capacity of 500,000 TEUs per year. Three super post-Panamax container cranes were delivered in August of 2007. The terminal became operational on October 30, 2007, with the arrival of the first container ship. Total cost of the project was CDN$ 170 million (US$ 157 million), funded by the partners shown below. The project was structured as a public-private partnership with Maher Terminals, who were given a 30-year concession to operate the terminal. The terminal commenced operations in 2007. It was purchased by Dubai-based terminal operator DP World for CDN$ $580 million (US$457 million) in 2015.

Figure 3-5 Fairview Container Terminal Construction Funding



3.4.2 Prince Rupert Container Security

The federal government allocated CDN $28 million (US$ 26 million) from APGCI funds to Canadian Border Services Agency to implement a container screening program at the Port of Prince Rupert.

3.4.3 Ridley Island Road, Rail & Utility Corridor

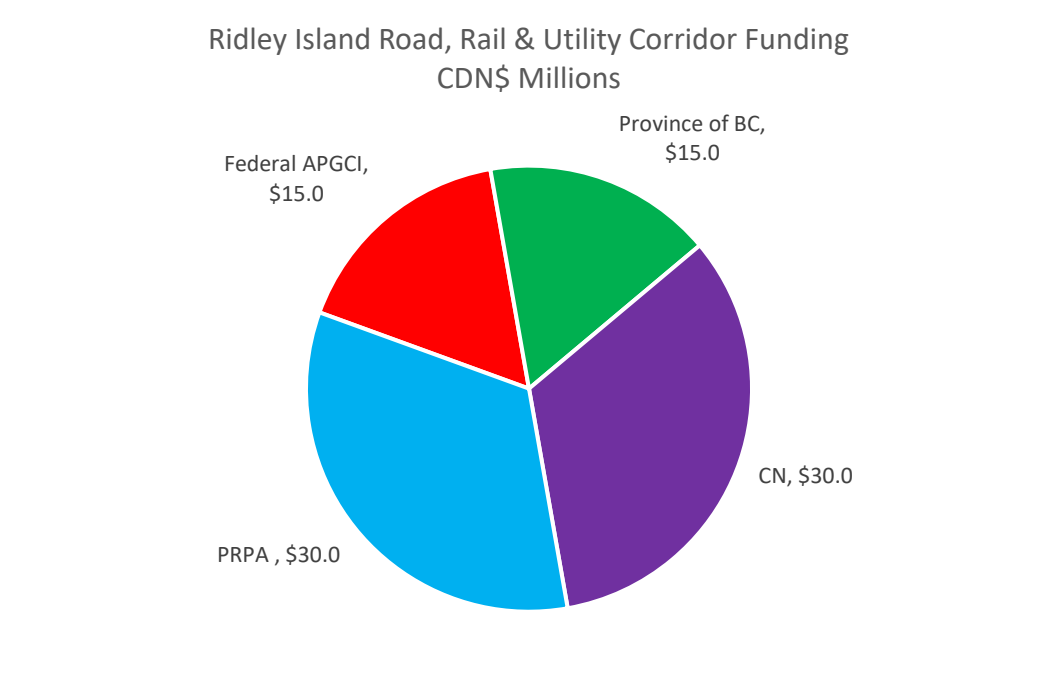
The Ridley Island Road, Rail and Utility Corridor (RRUC) was conceived to service a proposed Canpotex potash export facility as well as other future developments on Ridley Island. Construction of the RRUC was completed in 2015. In 2016, Canpotex decided not to proceed with the Prince Rupert Terminal.[31]

As designed, the RRUC included the following components:

- Rail loop (between 8 and 8.5 km), consisting of a railbed for up to 14 inbound and 11 outbound tracks.
- Three inbound rail tracks and two outbound tracks laid for the Canpotex terminal.
- Approximately 69 kV transmission line (approximately 3.4 km) connecting Ridley Island and the Canpotex terminal to the BC Hydro power transmission system.
- Access road with a rail overpass and underpass.
- Lighting along the rail loop at spacings of 15 to 25 m.
- Rail causeway upgrade and culverts.
- Infilling of foreshore marine habitat along portions of the west and east side of Ridley Island and the base of Porpoise Harbour.

A federal grant of CDN $15 million (US$ 14 million) of the CDN$ 90 million (US$ 87 million) total cost for the RRUC was provided to the Port of Prince Rupert under the Asia Pacific Gateway and Corridor Initiative. The balance came from the Province of British Columbia., Prince Rupert Port Authority and CN.

Figure 3-6 Ridley Island Road, Rail & Utility Corridor Funding

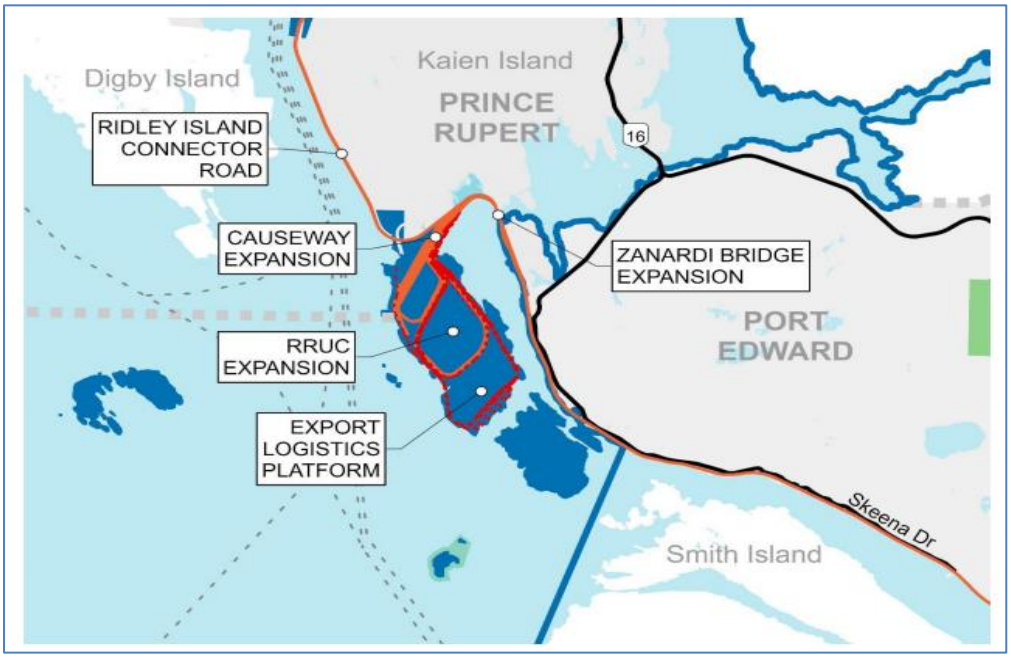


[31] "Canpotex Board Decides Not to Proceed with Prince Rupert Terminal" Canpotex June 17, 2016 https://www.canpotex.com/news/canpotex-board-decides-not-proceed-prince-rupert-terminal

3.5 Major Projects: National Trade Corridors Fund 2018-2021

The federal government has announced contributions of $240.6 million for development of infrastructure at the Port of Prince Rupert since 2018. Locations of current projects are shown in the figure below.[32]

Figure 3-7 Port of Prince Rupert Current Projects



3.5.1 Fairview-Ridley Connector Corridor

The federal government committed CDN$ 15 million (US$ 12 million) under the National Trade Corridors Fund (NTCF) towards a CDN$ 115 million (US$ 88 million) project for construction of the Fairview-Ridley Connector, a 5 kilometer industrial corridor that will provide a physical platform for two new rail sidings and a private-haul road between Fairview Container Terminal and Ridley Island Industrial Site.

The Fairview-Ridley Connector will facilitate a rerouting of container trucks from local customs and transload facilities to Fairview Container Terminal. Due to a substantial increase in local export operations, the number of trucks transiting Highway 16 through downtown Prince Rupert has grown on average from 50 to 200 trucks per day over the last two years. When complete, the Fairview-Ridley Connector will reduce the haul distance from Ridley Island to the terminal from 20 kilometers to 5 kilometers. By eliminating downtown truck traffic, the project will achieve improved vehicle and pedestrian safety, ease traffic congestion, reduce wear on provincial and municipal road infrastructure, and drastically reduce the GHG and local air emissions from each truck trip by an estimated 75%. The increased rail capacity will be developed in the corridor as intermodal volumes require it, and will continue to ensure future rail activity is focused on the southern side of Fairview Terminal, further away from residential areas. The road will be substantially completed in December 2021 and is expected to be operational in May 2022, in conjunction with the southern expansion of Fairview Terminal.

3.5.2 Zanardi Bridge, Causeway & Rail Expansion

The Canadian federal government announced funding contributions totaling CDN$ 63.8 million (US$ 49 million) to the Prince Rupert Port Authority toward this project. The total project cost is estimated at CDN $122 million (US$ 94 million). The project is intended to reduce operational conflicts and increase rail capacity to the Port of Prince Rupert to accommodate future growth in import and export trade for all current and future terminals. Key components of the project include the construction of a new double track bridge

[32] Source: Port of Prince Rupert Land Use Plan September 2020 p. 48.

across the Zanardi Rapids, rehabilitation of the existing single track Zanardi Bridge, and expansion of the causeway between the Zanardi Bridge and Ridley Island.

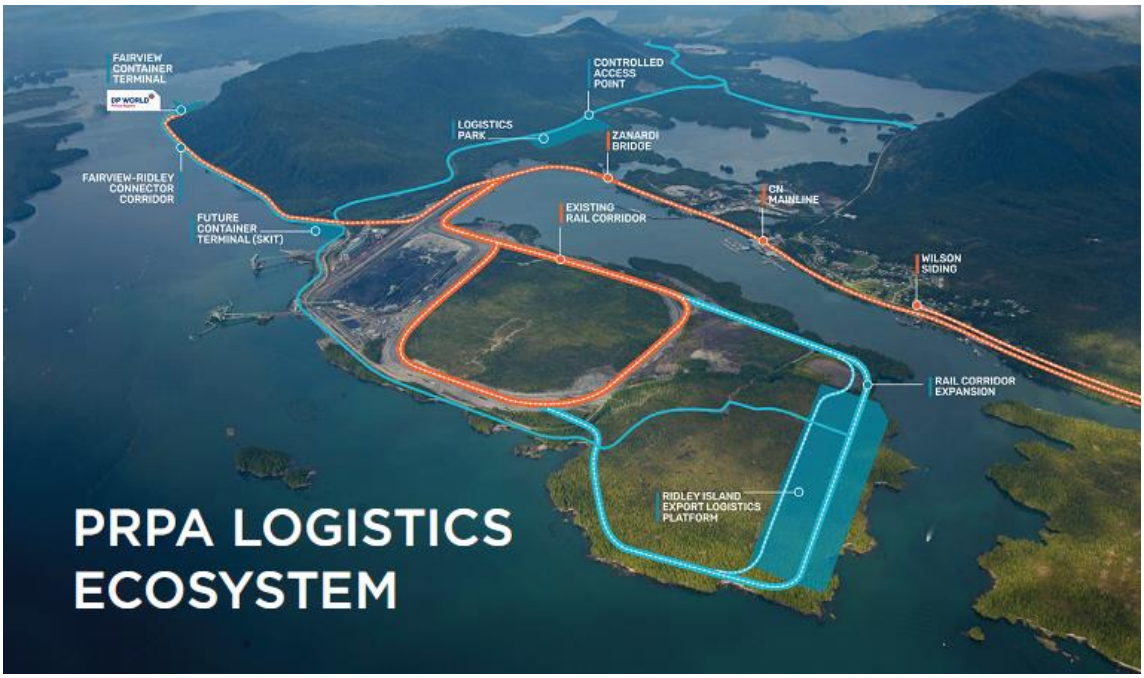
3.5.3 Ridley Island Export Logistics Platform

The Prince Rupert Port Authority received CDN$ 49.9 million (US$ 38 million)towards rail infrastructure required to service the Ridley Island Export Logistics Platform project. The project's total cost is nearly CDN$ 100 million (US$ 77 million) and focuses on an expansion of the existing Road, Rail and Utility Corridor to further enable unit train access. The rail infrastructure is a precursor to a large-scale bulk transload facility, a large-scale breakbulk transload facility, and an integrated off-dock container yard. The Road Rail Utility Corridor expansion will create a platform to attract private-sector investment in export transloading and warehouse capacity at the port. A full build-out of logistics capability will be able to handle a significant increase in volumes, including dry bulk, forest products and other commodities.

3.5.4 Metlakatla Import Logistics Park

The Metlakatla Development Corporation, the economic development arm of the Metlakatla First Nation, was the recipient of CDN$ 43.3 million (US$ 33 million) in Canadian federal government funding toward the Metlakatla Import Logistics Park project. The CDN $89 million (US$ 68 million) project consists of a 25-hectare site development on South Kaien Island that will enable transload and warehouse operations to provide increased flexibility and value-added capabilities for import supply chains. The Import Logistics Park is a strategic complement to the Export Logistics Platform and will be fully integrated into DP World's Fairview Container Terminal and the Port's intermodal ecosystem to ensure unparalleled efficiency and fluidity. The location relative to Port facilities is shown in the figure below.

Figure 3-8 Prince Rupert Port Logistics Ecosystem[33]



[33] Source: Prince Rupert Port Authority https://www.rupertport.com/active_project/south-kaien-island-import-logistics-platform/

4. Port of Nanaimo

The Port was created in 1961 as the Nanaimo Harbour Commission and was continued as the Nanaimo Port Authority (NPA) on July 1, 1999, under the *Canada Marine Act* and Letters Patent.

The Nanaimo Port Authority is agent of the Canadian federal government whose mandate is to administer, control, manage and protect navigation and safety of the Nanaimo Harbour. The NPA also has a Headlease with the Province of British Columbia for the administration and management of certain waterlots and foreshore area.

The Nanaimo Port Authority must remain financially self-sufficient, and it pays a gross revenue charge to the federal government.

In 2018, the Canadian federal government designated Vancouver Island as a Foreign Trade Zone. The designation allows for tariff and tax exemptions, with respect to the purchase or importation of raw materials, components or finished goods. The materials and goods can be stored, processed, or assembled, then re-exported without taxes or duties. The materials and goods can also be prepared for entry into the domestic market, in which case taxes and duties would be deferred until the time of entry. The auto import business at the Nanaimo Port Authority is likely the only beneficiary of this initiative at the present time. Nevertheless, Westwood Shipping Lines, Nanaimo Port Authority, and DP World Canada are actively promoting the opportunities at Duke Point Terminal.

4.1 Key Infrastructure

NPA cargo facilities include deep-sea terminals at Nanaimo Assembly Wharf close to downtown Nanaimo and Duke Point Terminal. Cargo traffic includes container, auto, breakbulk, and liquid bulk operations.

Figure 4-1 Port of Nanaimo Cargo Terminals



The Nanaimo Assembly Wharf Terminal includes:

- Two vessel berths, accommodate up to 200m vessel and covered barge ramp within Warehouse #3. Shipping traffic is related to break bulk logs and forest products.

- 27 acres paved storage with bonded warehouse storage.
- A Pure Car Transport Carrier that can support vessel up to 200m in length. There is 17 paved acres for vehicle storage
- The multipurpose marine terminal also has cruise dock and cruise passenger terminal.

Duke Point Terminal facilities are summarized below.

- The Main Dock can accommodate vessels of 213.4 m in length. There is also a Barge Berth of 80.5 m. The facility supports the regular scheduled service of Load On/Load Off container-on-barge shortsea shipping service to Centerm Terminal at the Port of Vancouver.
- The LHM500S Mobile Harbor Crane (100-tonne capacity) supports the container, break-bulk and heavy lift project cargo. There is 15 acres paved storage space and 10 acres additional laydown yard at the main terminal.
- Roll On Roll Off Ramp that is 26' width x 100' length ramp with a 100-tonne ramp load capacity.

The Port of Nanaimo is also home to several private marine terminal facilities including Amix Marine Terminal (Duke Point), British Columbia Ferries, Seaspan Ferries (Duke Point) and Seaspan Ferries Rail Barge (City Center).

The Nanaimo Port Authority also manages the Commercial Inlet Basin and Marina, W. E. Mills Landing and Marina, Pioneer Waterfront Plaza Shops and Parking, Seaplane Terminal, Walking/Fishing Pier, and Harbourside Walkway. For purposes of this study, only funding of cargo facilities has been analyzed.

4.2 Port-Related Infrastructure Funding

A summary of federal contributions to the Port of Nanaimo is shown below.

Figure 4-2 Port of Nanaimo Federal Contributions 2005-2021

Port of Nanaimo Federal Contributions 2006 - 2021 CDN$ Millions					
			Program		
Year Awarded	Infrastructure	Project	APGCI	NTCF	Grand Total
2013	Terminal	Nanaimo Assembly Wharf Rehabilitation	$4.6		$4.6
2018	Terminal	Nanaimo Vehicle Processing Centre		$6.3	$6.3
2019	Terminal	Duke Point Terminal - Phase 2/3 Expansion		$46.2	$46.2
Grand Total			$4.6	$52.5	$57.1

4.2.1 Nanaimo Assembly Wharf Rehabilitation

On June 2013, the Federal government announced funding under the Asia–Pacific Gateway and Corridor Initiative (APGCI) to assist the Nanaimo Port Authority in improving the infrastructure for handling containers. The Government of Canada contributed up to CDN$ 4.7 million (US$ 4.6 million) to rehabilitate the Nanaimo Assembly Wharf, an aging dock that had limited use for cargo handling for the past decade. The contribution was contingent on matching funds from the Nanaimo Port Authority. The NPA invested nearly CDN$ 4 million (US$ 3.8 million) in port capital in infrastructure, creating new dock infrastructure and to secure a used mobile crane to handle containers for the DP World shortsea barge service to Vancouver.[34]

4.2.2 Nanaimo Vehicle Processing Centre

On April 10, 2018, the Nanaimo Port Authority announced that it was partnering with Western Stevedoring (Western) and their affiliate organization, the Auto Division of SSA Marine (SSA), to design, build, finance and operate a multi-purpose break bulk terminal with an initial focus on European automobile import and

[34] https://npa.ca/en/blog/2013/07/federal-government-announces-funding/

processing at NPA's Nanaimo Assembly Wharf.[35] The existing pier was upgraded to allow for berthing of a modern Pure Car/Truck Carrier (PCTC. Total cost of the project was CDN$ 19 million (US$ 15 million). The Canadian federal government contributed CDN $6.3 million (US$ 5 million) from the National Trade Corridor Fund Program.[36]

4.2.3 Duke Point Phase 2/3 Expansion

DP World commenced a regional shortsea container-on-barge service linking Nanaimo to the Port of Vancouver in August 2012. The service was facilitated by CDN$ 9.3 million (US$ 9 million) in improvements made at the Duke Point Terminal which included upgrades of the barge berth and a deep-sea berth.

A further expansion of the Duke Point Terminal was announced in 2019. The project includes an extension of the existing berth from 182 meters to 325 metres and the construction of a new truck gate, warehouse and administration and maintenance building. The existing diesel quay crane will be replaced with two 16 container-wide electric quay cranes. The terminal's container yard storage area will be increased, creating an overall terminal operational capacity of 280,000 TEUs. Upgrades to drainage, sewer, electrical, water and security systems are also included in the terminal project outline.

Total cost of the expansion is estimated at CDN$ 105 million (US$ 81 million). The federal government will provide CDN$ 46.2 million (US$ 36 million) under the NTCF and the Province of BC will provide a CDN$ 15 million (US$ 12 million) contribution as a part of B.C.'s Economic Recovery Plan.

[35] "Nanaimo Auto Terminal Planned for Nanaimo Assembly Wharf" Western Stevedoring April 10, 2018 http://www.westernstevedoring.com/docs/default-source/default-document-library/nanaimo-auto-centre-announced-for-nanaimo---news-release-april-10---2018.pdf?sfvrsn=d5aec780_0

[36] https://npa.ca/en/blog/2018/11/construction-underway-vehicle-processing-centre/

5. Port Alberni

The Port was initially established in 1947 as a Harbour Commission. The Port Alberni Harbour Commission became the Port Alberni Port Authority pursuant to the Canada Marine Act and Letters Patent effective July 1, 1999.

As an Agent of the Federal Crown the Port Alberni Port Authority (PAPA) is mandated by its legislative Letters Patent to be financially solvent. This requires negotiating and implementing market-based rates and fees along with prudent financial management. As an Agent of the Federal Crown, the Port operates “at arm’s length” from the Federal Government while providing it a revenue stream equal to two percent of all gross revenue earned.

5.1 Key Infrastructure

Port Alberni Terminals is relatively small marine terminal that occupies 17 acres (6.88 ha.). There are three deep-sea berths with a storage assembly area. The Port has only one berth that would be considered modern construction. The terminal has historically handled break-bulk cargoes such as lumber, pulp, newsprint, plywood, and logs. Present shipping traffic is largely devoted to handling break-bulk log exports and unloading seafood. The Terminal has also handled cruise passengers on occasion. The Port Authority previously operated the terminal directly and did not lease the property to an independent operator. However, they recently signed a lease with a forest sector firm for the use and operation of berth three.

5.2 Port-Related Infrastructure Funding

The Canadian government provided funding of CDN $.2 million (US$ .2 million) through the APGCI Transportation Infrastructure Fund for a container transshipment and short-sea shipping feasibility study at Port Alberni, British Columbia. The objective of the study as to identify potential market opportunities and assess the viability of a container transshipment and short-sea shipping distribution center in the Alberni Inlet.

The concept for the Port Alberni Trans-Shipment Hub (PATH) was for development of 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. 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”, was to service the “spokes”, the container handling facilities in the Salish Sea area (Metro Vancouver and Puget Sound) with dedicated cellular barges.

6. CANADIAN RAILWAYS AND PORT COMPETITIVENESS

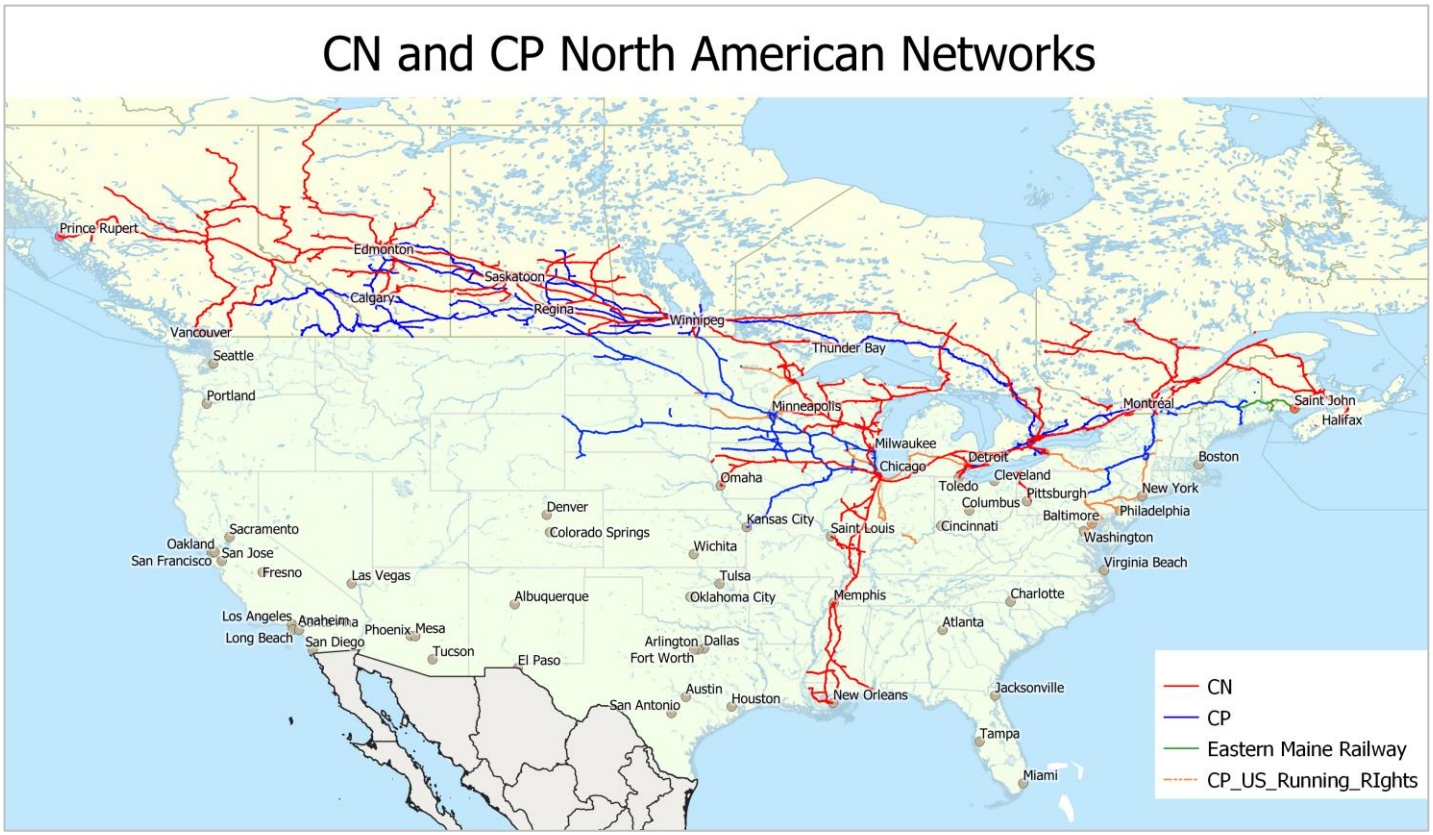
6.1 Background

There are two Canadian Class 1 railways: CN and CP.

- CN is the former Canadian National Railways which was owned by the Canadian government from 1923 to 1996. CN was privatized in 1995. In 1998 CN purchased the Illinois Central Railway, which expanded the CN network down the Mississippi Valley with access to the intermodal hub of Memphis and the ports of New Orleans and Mobile, Alabama. CN pioneered the Precision Scheduled Railroading model, which has vastly improved railroad efficiency. Every other Class 1 railway in North America except BNSF has adopted some form of PSR.

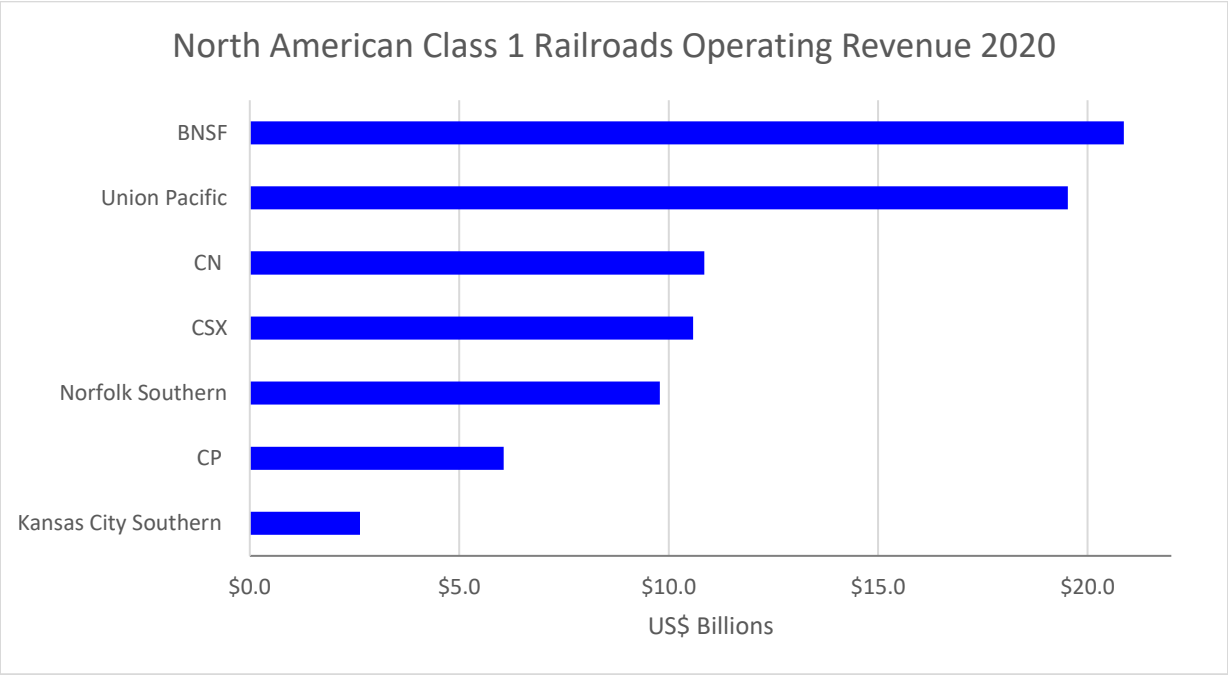
- The Canadian Pacific Railway was known as CP Rail between 1968 and 1996 and simply Canadian Pacific since. CP was the original Canadian transcontinental railway. CP abandoned its network east of Montreal following deregulation of the Canadian railway industry in 1987. The CP network also serves Minneapolis–St. Paul, Milwaukee, Detroit, Chicago, and Albany, New York in the United States.

Figure 6-1 CN and CP North American Networks



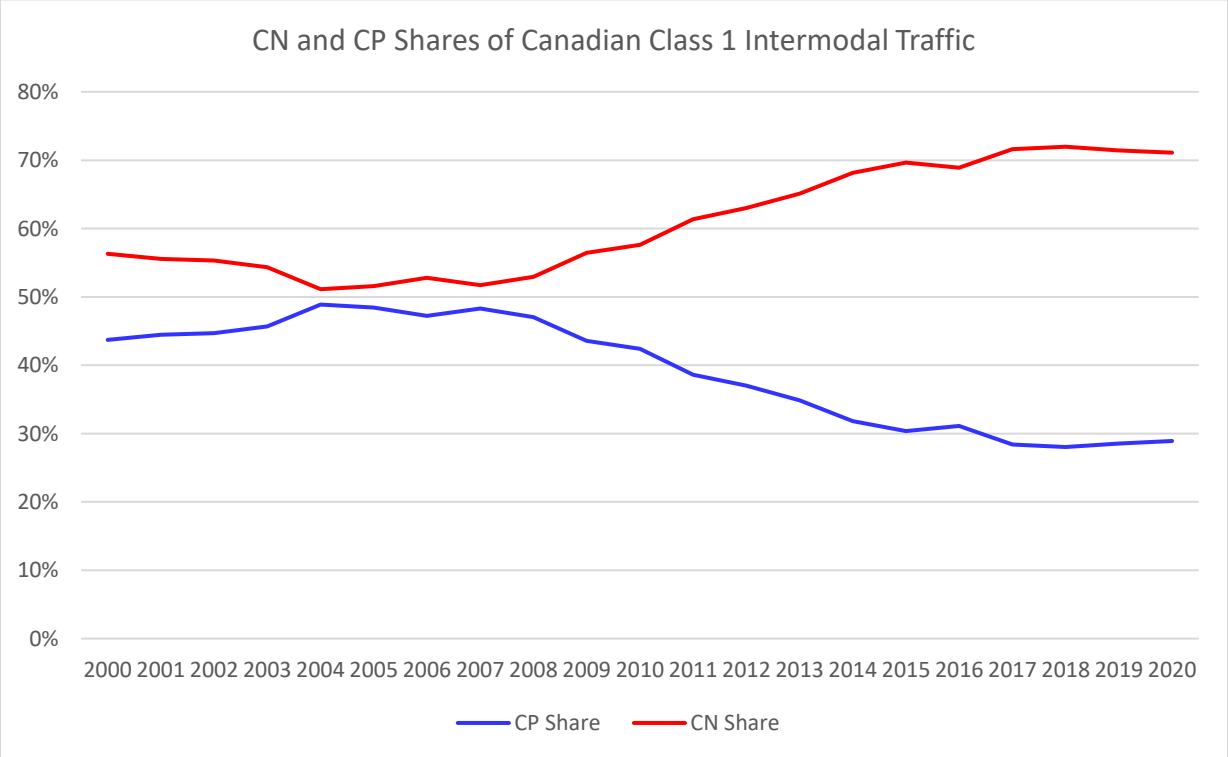
CN ranks 3rd among the seven North American Class 1 railways by revenue, and CP ranks 6th.

Figure 6-2 North American Railways Operating Revenue 2020



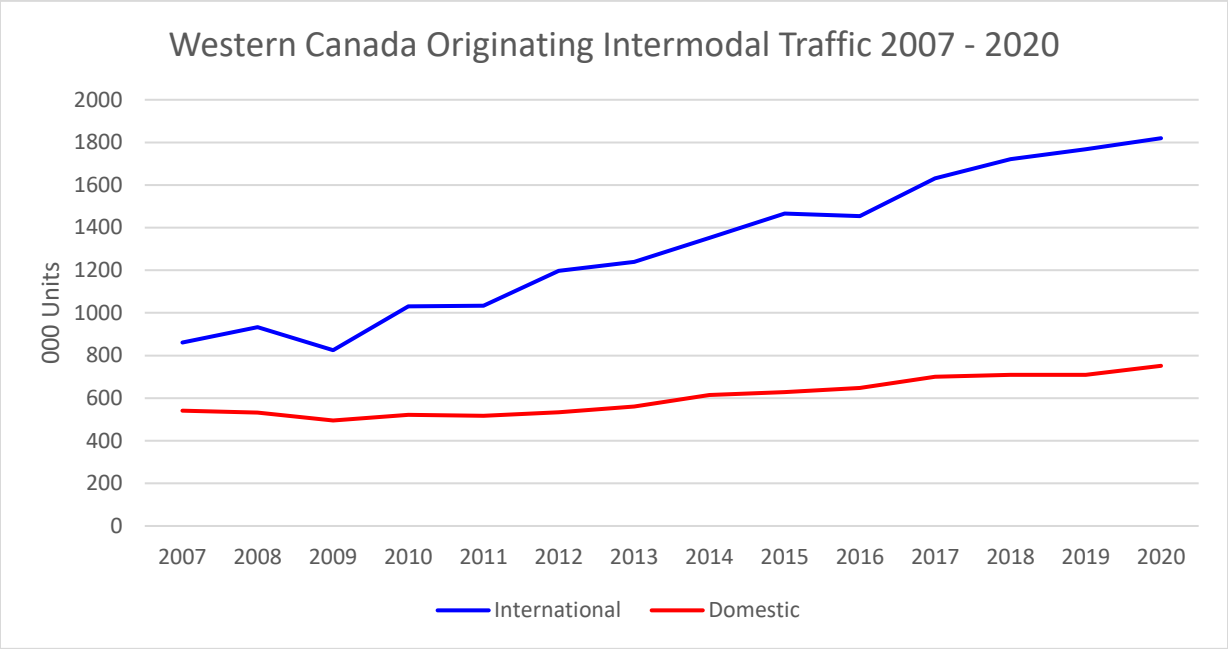
CN has expanded its share of Canadian Class 1 intermodal traffic from approximately 50% in 2008 to over 70% in 2020.

Figure 6-3 CN and CP Shares of Canadian Class 1 Intermodal Revenue



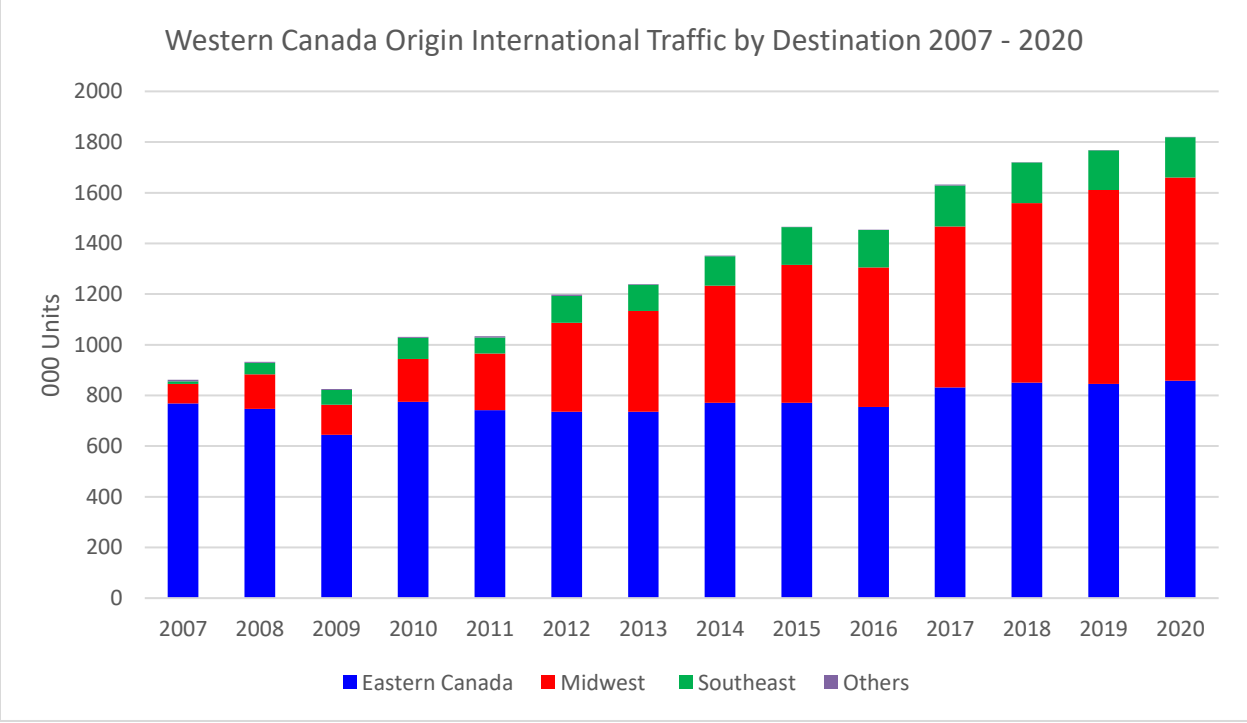
The major source of growth in has been international intermodal traffic from the Western Canadian ports of Vancouver and Prince Rupert.[37]

Figure 6-4 Western Canada Originating Intermodal Traffic 2007 - 2020



Historically Eastern Canada was the dominant market for Western Canadian international intermodal traffic. Since 2011, traffic to the US Midwest and Southeast regions has overtaken Canadian traffic in volume. [38]

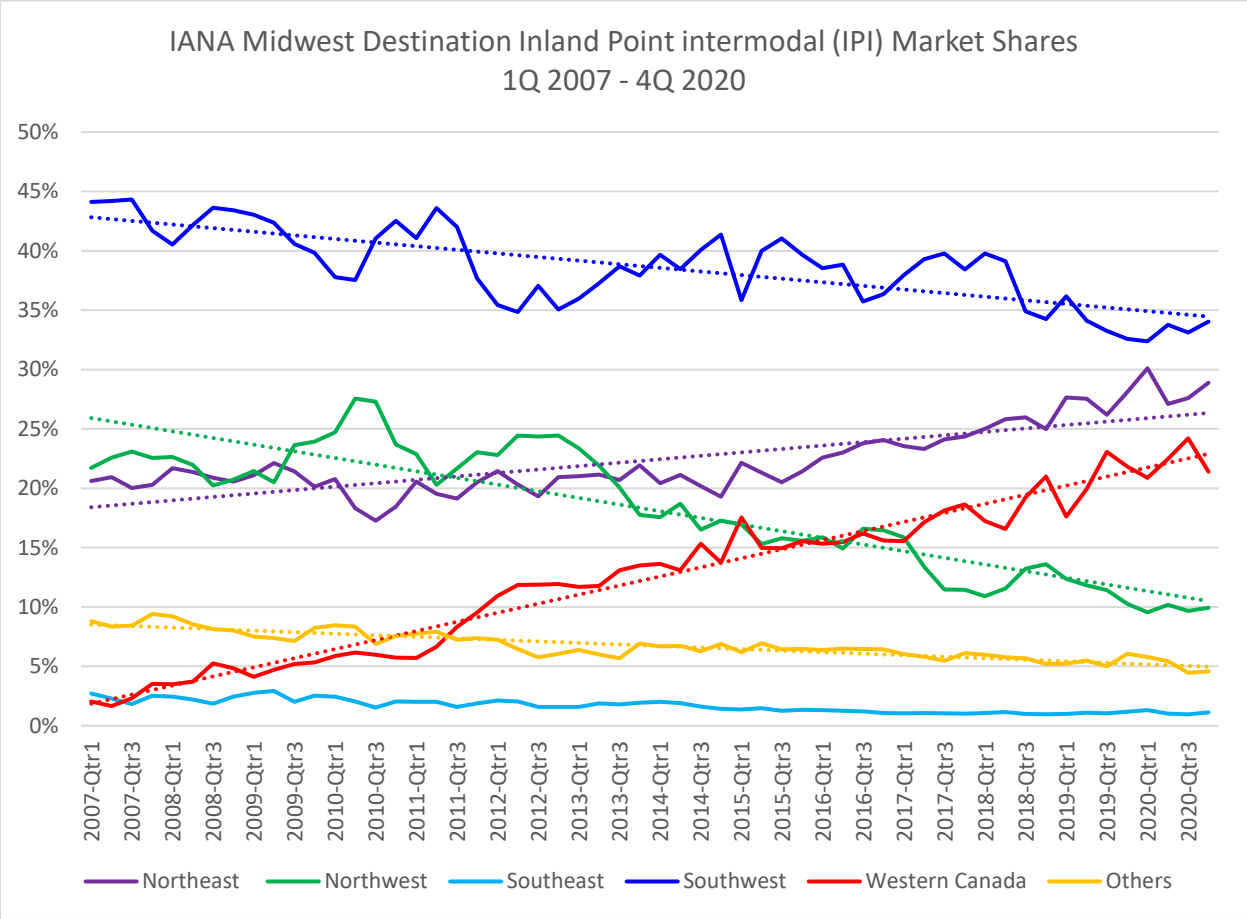
Figure 6-5 Western Canada Origin International Intermodal Traffic by Destination 2007 - 2020



[37] Source: Intermodal Association of North America (IANA) data.
[38] Source: IANA.

The US Midwest market is the largest destination market for international intermodal (Inland Point Intermodal) traffic. The Western Canadian share of this market increased from less than 5% in 2007 to almost 25% in 2020, while the Northwest share (now the Northwest Seaport Alliance) fell from over 20% in 2007 to around 10% in 2020. The Southwest market share (Ports of Los Angeles and Long Beach) fell from almost 45% in 2007 to approximately 35% in 2020.[39]

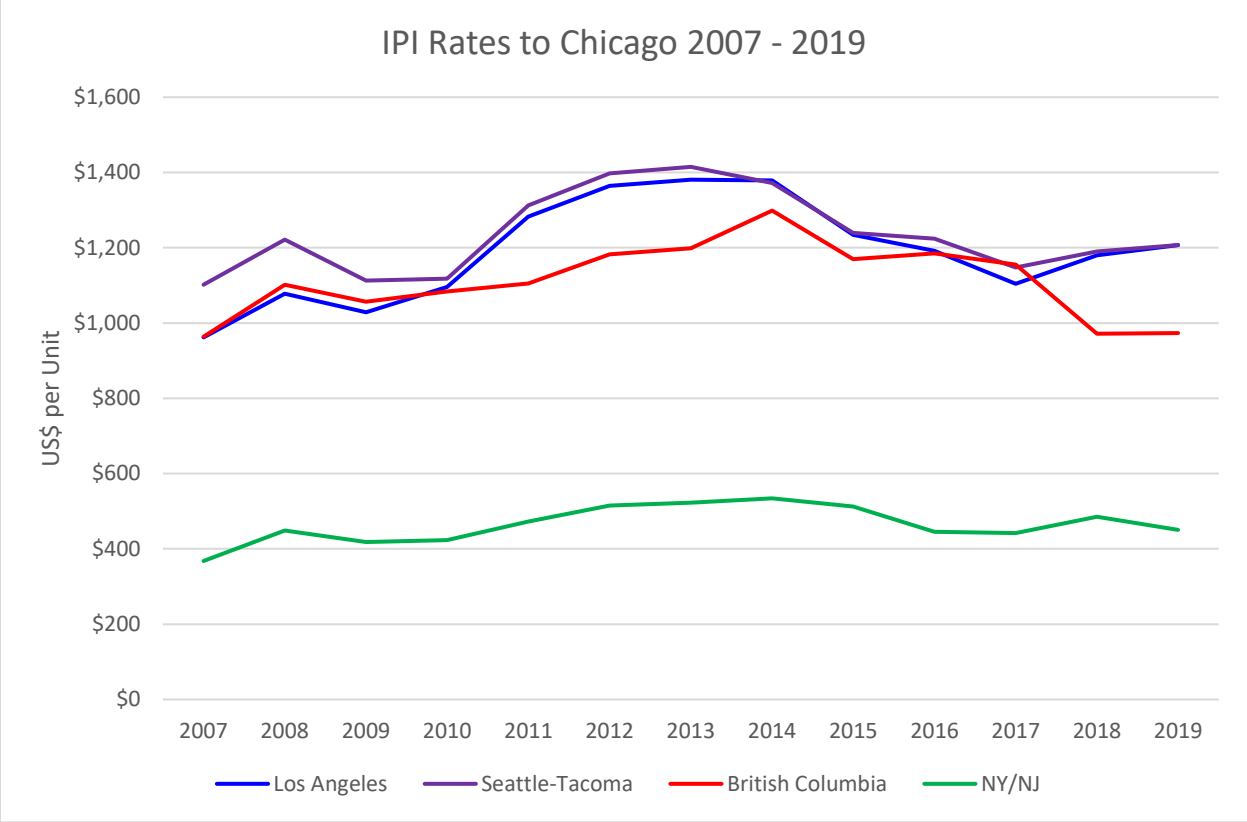
Figure 6-6 Midwest Destination Inland Point Intermodal Market Shares 2007 - 2020



Estimates of average IPI rates to Chicago from 2007 to 2019 based on data from the U.S. Surface Transportation Board Public Waybill sample are shown below. In 2018 and 2019 the rates from B.C. ports (Ports of Vancouver and Prince Rupert) averaged more than US$ 200 per unit (container) less than rates from Los Angeles (Ports of Los Angeles and Long Beach) and Seattle-Tacoma (Northwest Seaport Alliance).

[39] Source: IANA.

Figure 6-7 IPI Rates to Chicago 2007 – 2019



6.2 Canadian Government Contributions to Class 1 Railway Infrastructure

International intermodal traffic from the Ports of Vancouver and Prince Rupert to US destinations is wholly dependent on rail transportation. CN has successfully leveraged their early cost advantage and unique network characteristics to capture a growing share of the US IPI market.

This success cannot reasonably be attributed to subsidization of CN capital or operating costs by the Canadian government. Analysis of Canadian federal contributions for port-related infrastructure has identified no direct contributions to CN or CP from 2005 to 2017. Since 2018, federal contributions have been announced for two railway-owned projects:

- Burrard Inlet Line Double Tracking - The Burrard Inlet (BI) Line is CN's direct access to the Centerm and Vanterm container terminals. It is currently a single-track rail line approximately 2 km long that connects the False Creek Flats to the Burrard Inlet waterfront.

The BI Line Double Tracking Project will add capacity to optimize the use of switching windows on the Heatley Diamond crossing. At this location, the BI Line crosses the CP Cascade Subdivision, which is used for freight service and accommodates the West Coast Express commuter rail service. Due to conflicts with competing rail moves on the CP corridor, this crossing limits the amount of time that BI Line can be used. Adding a second track will allow for simultaneous rail movements to and from the south shore, enabling the movement of more volume within the same timeframe, thereby mitigating the impact of increased volumes on the CP Cascade Subdivision. The project will increase capacity and operational fluidity on rail corridors for both CN and CP, providing an increase in overall rail capacity to the South Shore Trade Area.

The federal contribution to this package of projects is CDN $22.5 million (US$ 17 million), and the Port of Vancouver has committed CDN $29.0 million (US$ 22 million). Total cost is unknown as the amount to be committed by CN has not been disclosed.

- **Glen Valley Double Tracking** - Glen Valley Double Tracking would increase the capacity of the rail corridor to support anticipated growth in trade through the Port of Vancouver. Double tracking would address a significant current bottleneck created by 3.7 miles of single track within the 25-mile double-track rail corridor between the end of the Directional Running Zone (DRZ) and CN's Thornton Yard.

Located near Abbotsford, B.C. on the CN Yale Subdivision, this 3.7-mile section of single track is operated bi-directionally and is within the corridor that CN and CP use to access the Roberts Bank Rail Corridor and terminals at Roberts Bank. The project would add a second track in the corridor, removing the conflict between opposing train movements causing congestion and delays while one or more trains wait for the single-track section to clear. The project would increase capacity and fluidity to better accommodate the anticipated 50% growth in train volumes to and from import and export facilities at Roberts Bank and in the rest of the Lower Mainland.

The federal contribution to this project is CDN $20.0 million (US$ 15 million), and the Port of Vancouver has committed $10.0 million (US$ 8 million). Total cost is unknown as the amount to be committed by CN has not been disclosed.

The introduction of contributions for railway-owned infrastructure enhancements is consistent with the expanded focus on trade-related infrastructure under the National Trade Corridors Fund. These amounts are very small relative to CN's overall capital spending. CN's capital investments in B.C. over the last five years totaled more than CDN$ 1.6 billion (US$ 1.2 billion), with CDN$ 460 million (US$ 377 million) committed for 2021.[40]

[40] "CN to Invest $460 Million in British Columbia to Ensure the Fluidity and Safety of its Network While Minimizing Greenhouse Gas Emissions" CN https://www.cn.ca/en/news/2021/06/cn-to-invest-460-million-in-british-columbia-to-ensure-the-fluid/

7. WASHINGTON STATE FUNDING PROGRAMS

Transportation infrastructure projects are funded under a variety of programs, including programs based on dedicated revenue streams from state gas taxes.

7.1 Washington State "Nickel Package" Funding

In 2003 the Washington State legislature passed legislation to authorize a bond issue to raise revenue for highway improvements. Additional revenue to support the revenue bond package included a 5 cents per gallon gas tax increase (hence the name "Nickel Package"), a 15 percent increase in gross weight fees on heavy trucks, and a 0.3 percent increase in the sales tax on motor vehicles. The revenue package funds 158 projects identified in the legislation over a 10-year period for a total investment of $3.3 billion. The Nickel Package included an additional $38.0 million in funding for construction of a bridge as part of the SR 519 Intermodal Access Project to improve connections for ferry and freight traffic to the Port of Seattle terminals, Central Waterfront, and I-90.

7.2 Connecting Washington

The 2015 Connecting Washington funding package is a $16 billion investment that enhances the statewide transportation system and maintains critical infrastructure. Connecting Washington is a 16-year program, funded primarily by an 11.9-cent gas tax increase that was fully phased-in on July 1, 2016.

Proposed spending includes:

- $9.4 billion for state highways and local roads.
- $1.4 billion state highway maintenance, operations and preservation.
- $1.3 billion for non-highway projects such as bike paths, walkways, rail and transit.
- $602 million for ferries and terminals.
- $300 million for fish barriers.

The program includes projects to improve freight mobility by:

- Increasing trip reliability across Snoqualmie Pass
- Addressing a major chokepoint along Interstate 5 in Pierce County
- Improving connections to national and international markets through US 395 in the Spokane region
- Completing the SR 509 and SR 167 connections to I-5 (Puget Sound Gateway Project).

7.3 Freight Mobility Strategic Investment Board

The Freight Mobility Strategic Investment Board (FMSIB) was created by the Legislature and the Governor in 1998 to develop a comprehensive and coordinated state policy that facilitates freight movement within the state in order to enhance Washington's ability to compete in local, national, and international markets. The FMSIB is responsible for developing freight partnership projects, reviewing and evaluating funding applications, helping to develop project funding partnerships, advocating for freight mobility issues to the public, and recommending to the Governor and Legislature projects that will enhance freight mobility within the state of Washington.

The 12-member board of FMSIB Board is appointed by the Governor and includes representatives from the public and private sectors, freight transport and capital construction. FMSIB funds are provided in two ways: FMSIB receives a biennial appropriation that is awarded through a competitive grant process, and

the Board administers funds that are appropriated by the legislature for specific projects. The proposed biennial appropriation for 2019 – 2021 was approximately US$19 million.[41]

7.4 Transportation Improvement Board

The Washington State Legislature created the Transportation Improvement Board (TIB) to foster state investment in quality local transportation projects. The Transportation Improvement Board (TIB) is responsible for the distribution of state funds to cities and counties for street construction, resurfacing and sidewalks. The proposed biennial appropriation for 2019 – 2021 was approximately US$250 million.[42] Funding for TIB's grant programs comes from revenue generated by three cents of the statewide gas tax.

[41] Freight Mobility Strategic Invest Washington State Office of Financial Management https://ofm.wa.gov/budget/state-budgets/gov-inslees-proposed-2021-23-budgets/agency-detail-budgets/411

[42] Transportation Improvement Board Washington State Office of Financial Management https://ofm.wa.gov/budget/state-budgets/gov-inslees-proposed-2019-21-budgets/agency-detail-budgets/407

8. NORTHWEST SEAPORT ALLIANCE PORT FUNDING

8.1 Institutional Structure

The Northwest Seaport Alliance is a Federal Maritime Commission-approved port development authority governed by the Ports of Seattle and Tacoma as equal members, with each port acting through its five elected commissioners. Each port is governed by five commissioners elected at large by the citizens of their respective counties. They serve four-year terms and establish policy for their Port and the alliance.

The ports remain separate organizations that retain ownership of their respective assets. The presidents of the home port commissions serve as co-chairs of The Northwest Seaport Alliance. The Northwest Seaport Alliance was officially formed in August 2015. For purposes of this study, our analysis will include funding to all three Ports (NWSA, Port of Seattle and Port of Tacoma) under major federal and state infrastructure programs.

8.2 FAST Corridor

The Freight Action Strategy for the Seattle-Tacoma (FAST) Corridor program was a collaborative project to enhance freight movements from the Ports of Seattle and Tacoma which was initiated in 1998.[43] Project partners for the FAST Corridor includes Washington State agencies (Washington State Department of Transportation (WDOT), the Freight Mobility Strategic Investment Board, the Transportation Investment Board); the US Federal Highways Administration; the Puget Sound Regional Council; King, Pierce and Snohomish Counties; the Ports of Seattle, Tacoma and Everett; twelve cities; the BNSF and UP railroads; and the Washington Trucking Association. The scope of the program extended from Tacoma to Everett. The FAST Corridor was developed in two phases. Phase 1 included 15 projects with a total cost of approximately $510 million. The first project was completed in 2001 and the remaining projects were substantially completed by 2006.[44]

8.2.1 FAST Corridor Phase 1

Federal funding for FAST Corridor Phase 1 projects was provided under both formula and discretionary funding programs, including the following:

FAST Corridor Phase 1 Formula Funding

- ISTEA funding: $13.5 million.
- TEA-21 Surface Transportation Program (STP): $63.9 million. The STP provided flexible funding that may be used by States and localities for projects on any Federal-aid highway, including the NHS, bridge projects on any public road, transit capital projects, and public bus terminals and facilities.
- TEA-21 High Priority Projects: $44.0 million. The High Priority Projects Program provided designated funding for specific projects (commonly referred to as demonstration projects) identified by Congress. Section 1602 of TEA-21 authorized 1851 high priority projects totaling over $9.3 billion over the six-year period from FY 1998 through FY 2003. In addition, section 1601 of TEA-21 established the high priority projects program in 23 U.S.C. 117.
- Section 378 Demonstration Projects: $16.3 million. Section 378 of the FY 2001 DOT Appropriations Act (Public Law 106-346) appropriated $1.3 billion from the Highway Trust Fund for 90 specific transportation projects. Subsequently, section 1403 of the FY 2001 Omnibus Consolidated Appropriations Act (Public Law 106-554) imposed a 0.22 percent government-wide rescission for FY 2001. As a result, the funding for each project in Section 378 of the DOT Appropriations Act was reduced accordingly.

[43] FAST Corridor April 2006 http://psrc.org/assets/1833/fastbrochure.pdf

[44] Information on FAST Corridor projects and funding up to 2006 is taken from Railroads and the Central Puget Sound Region Presentation to Western Regional Rail Conference Freight Mobility Panel; Dennis Beaulieu, Coordinator Freight Mobility Roundtable, Puget Sound Regional Council, 2006.

- One Fast Corridor project (East Marine View Drive in Everett) received funding of $3.5 million under the provisions of SAFETEA-LU.

FAST Corridor Phase 1 Discretionary Funding

- TEA-21 Borders and Corridors Program: $33.5 million. These funds were allocated from the National Corridor Planning and Development Program (sections 1118 and 1119 of TEA-21) developed to provide funding to States and metropolitan planning organizations for coordinated planning, design, and construction of corridors of national significance, economic growth, and international or interregional trade.

8.2.2 FAST Corridor Phase 2

A second list of ten projects with a total estimated cost of approximately $370 million was subsequently developed. Funds allocated to Fast Corridor Phase 2 Projects up to 2006 included:

- Residual ISTEA funding: $10.9 million.
- TEA-21 High Priority Projects: $7.1 million.
- TEA-21 FAST Corridor: $44.8 million.
- TEA-21 Borders and Corridors Program: $6.2 million.
- SAFETEA-LU funding (up to 2006): $3.9 million.

In 2006 responsibility for FAST Corridor planning was centralized in the Puget Sound Regional Council (PSRC). In July 2011 PSRC reported that 17 of 27 FAST Corridor freight projects (and project phases) had been completed at a total cost of $570 million, of which federal funds accounted for $150 million or 26 percent. Additional federal funds for 4 projects were provided under the American Recovery and Reinvestment Act of 2009, and the 5 remaining projects were recommended as priorities in the 2012 Regional Freight Strategy.[45]

Examples of major Phase 2 projects facilitating access to the Port of Seattle include:

SR 519 (South Seattle) Intermodal Access Project: The project purpose was to improve vehicle and freight access between I-5 and I-90 and the Seattle waterfront, including port container terminals, the ferry dock and the Seattle International Gateway Rail Yard. The project also increases safety by separating road, pedestrian, and rail traffic. The project was completed in two phases. Phase 1 (2004) provided east-bound access to the freeway system, including the Atlantic Street, on ramps to I-90 and I-5 and the Atlantic Street overpass. Total cost of the two phases based on FAST Corridor Phase 1 funding was $133.5 million.

Port of Seattle East Marginal Way Grade Separation: The project consisted of a north, east, and southbound grade separation on Duwamish Avenue South to remove at grade conflicts with existing rail tracks. The project was designed to improve access among Port terminals, Union Pacific and Burlington Northern Railroad rail yards, local manufacturers, and distribution warehouses. Area-wide benefits include reduced congestion, more efficient intermodal transfers, and a positive impact on air quality. This project was initially funded at a level of $31.7 million under Fast Corridor Phase 1. The Port of Seattle authorized an additional $17 million for enhancements in 2009.[46]

Examples of major Phase 2 projects facilitating access to the Port of Tacoma include:

[45] Planning for Freight in the Central Puget Sound Region Presentation to Seattle Freight Mobility Advisory Board; Freight Planning – PSRC July 19, 2011.
[46] Port Commission Authorizes an Additional $17 million for East Marginal Way Project Port of Seattle Press Release March 24, 2009.

Lincoln Avenue Grade Separation: The project reduced barriers and increased freight mobility by removing the grade crossings at Lincoln Avenue. The overpass construction allows long train assembly without blocking arterial traffic. The project also relieved major congestion since Lincoln Avenue has become a primary arterial with the closure of East 11th Street. Total cost was $50.1 million. The project was completed in 2011.

Construction of the FAST projects was funded through multiple overlapping federal, state, and local programs and contributions from the ports and railroads. Major sources of funds are highlighted below.

Formula Funding Programs

SAFETEA-LU

The SAFETEA-LU legislation which replaced TEA-21 continued most of the TEA-21 major programs though in some cases under different criteria and qualification requirements. Funding for FAST Corridor projects under SAFETEA-LU included High Priority Projects (section 1702): $9.0 million, including $7.5 million for right of way acquisition for SR167 and $1.5 million for the Lincoln Avenue Grade Separation (Tacoma).

The MAP-21 highway bill which replaced SAFETEA-LU in 2012 repealed the High Priority Corridors program which was a significant source of funding for the FAST Corridor.[47]

American Recovery and Reinvestment Act (ARRA) of 2009

The American Recovery and Reinvestment Act (ARRA) of 2009 included provisions for incremental funding of transportation projects eligible for formula funding under programs including the Interstate Maintenance Program, National Highway System, Surface Transportation Program, Highway Bridge Replacement and Rehabilitation Program, Congestion Mitigation and Air Quality Improvement Program and the Highway Safety Improvement Program. Funding totaling $35.7 million was allocated to four FAST Corridor projects under the State Highway provisions of ARRA as shown below[48]:

- Lincoln Avenue Grade Separation (Port of Tacoma): $15.4 million.
- Shaw Road Extension (Puyallup): $2 million.
- Spokane Street (Seattle): $15.4 million.
- East Marginal Way (Port of Seattle): $2.9 million.

8.3 NWSA Ports Discretionary Federal Funding 2011-2020

8.3.1 TIGER-BUILD-RAISE Grants

Two projects in Seattle received a total of $54 million in grants under the TIGER program, as shown below.

Figure 8-1 Puget Sound Port-Related TIGER Grants

Seattle Port-Related TIGER Grants 2011 - 2014			
Program	**Year Awarded**	**Project**	**Federal Grant US$ millions**
TIGER	2011	South Park Bridge Replacement (Seattle)	$34.0
TIGER	2014	Terminal 46 Rehabilitation	$20.0
TIGER Total	2011 - 2016		$54.0

[47] Everett-Seattle-Tacoma Corridor Case Study https://coe-sufs.org/wordpress/ncfrp33/case-studies/seattle-wa/fast/

[48] ARRA Highway Project List Washington State Department of Transportation http://www.wsdot.wa.gov/Funding/stimulus/ProjectList.htm#state

The South Park Bridge Replacement Project included replacement of an existing 80-year-old bascule bridge with a new bascule bridge crossing the Duwamish waterway in Seattle, Washington. The bridge is a principal arterial connecting the neighborhood of South Park and the central business district on the east to the Georgetown neighborhood on the west. The bridge is owned by King County. Construction was completed in 2014 at a total cost of $124 million.[49] The bridge is not directly connected to port operations.

The Port of Seattle received a $20 million TIGER grant for the Terminal 46 Rehabilitation Project in 2014.

8.3.2 FASTLANE and INFRA Grants

Puget Sound grants under the FASTLANE and INFRA projects are shown below.

Figure 8-2 Puget Sound FASTLANE & INFRA Grants

Puget Sound FASTLANE and INFRA Grants 2016 - 2020			
Federal Program	**Year Awarded**	**Project**	**Federal Grants US$ Millions**
FASTLANE	2016	South Lander St. Grade Separation and Railroad Safety	$45.0
FASTLANE	2016	Strander Blvd Extension & Grade Separation Phase 3	$5.0
INFRA	2020	Puget Sound Gateway Project	$73.7
Total			$130.4

The South Lander Street Grade Separation Project was a FAST Corridor Phase 2 project. The project has been undertaken by the City of Seattle to build a bridge on S Lander St between 1st Ave S and 4th Ave S to provide a grade-separated crossing over the BNSF Railway's railroad tracks that will improve local traffic circulation and safety in the City's SODO neighborhood. S Lander St is an essential east-west corridor that is heavily used by freight and commuter traffic as well as pedestrians, bicycles, and transit. It serves one of the largest manufacturing and industrial centers in the state, including the Port of Seattle's seaport terminals.[50] Total cost of the project is approximately $140 million. The TIGER grant of $45 million accounted for approximately 32 percent of total costs.

The Strander Boulevard Extension and Grade Separation Project included construction of an underpass crossing the BNSF rail line in Renton.

The Puget Sound Gateway Program is composed of two projects that provide essential connections to the ports of Tacoma and Seattle and help ensure people and goods move more reliably through the Puget Sound region. WSDOT is delivering the SR 167 and SR 509 Completion projects under one program to maximize efficiencies in planning, environmental review, design, and construction.

The SR 167 Completion Project will build the remaining four miles of SR 167 between Meridian Ave and I-5, completing a long-planned connection to I-5. The project also includes a two-mile connection from I-5 to the Port of Tacoma.

The SR 509 Completion Project will extend SR 509 to I-5 near SeaTac, add a southern access point to Sea-Tac International Airport, and improve service between industrial districts by allowing general purpose traffic and trucks to bypass I-5, SR 99, and local streets.

In July 2015, the Washington State Legislature and Governor Inslee acted to fund the Puget Sound Gateway Program through the connecting Washington Revenue Package. Gateway Program funding totals

[49] South Park Bridge Replacement Project https://www.greenroads.org/files/913.pdf
[50] South Lander Street Grade Separation Project Visual Impact Assessment Seattle Department of Transportation January 2017 p. 1-1 https://www.seattle.gov/Documents/Departments/SDOT/BridgeStairsProgram/bridges/Lander/Lander_Visual.pdf

approximately $2 billion from four sources: 1) $1.6 billion from the Connecting Washington funding package; 2) $130 million from local contributions; 3) $180 million from tolling; and 4) Federal grants. The project was awarded a $73.7 million INFRA grant in 2020.

8.3.3 Port Infrastructure Development Program (PIDP) Grants

The Northwest Seaport Alliance was awarded a PIDP grant of $10.7 million for the Terminal 5 Uplands Modernization and Rehabilitation Final Phase project in 2020. The T-5 project is a $458 million joint venture between NWSA, SSA Terminals (Seattle Terminals), and LLC (SSAT), a private affiliate of SSA Marine and Carrix, to modernize and rehabilitate the Port of Seattle's Terminal 5 (T-5). NWSA submitted an application for US$17.7 million to fund the following components of the project:

- Surfacing, paving, and reinforcement;
- Phases C and D of a terminal-wide stormwater treatment system;
- Upsizing electric refrigerated (reefer) plug capacity; and
- On-terminal rail infrastructure improvements.[51]

NWSA was awarded a $10.7 million PIDP grant in 2020.

[51] Terminal 5 Uplands Modernization and Rehabilitation Project Final Phase U.S. Department of Transportation-Maritime Administration Port Infrastructure Development Program (PIDP) Opportunity Number 693JF7-20-BAA-0001 Northwest Seaport Alliance and SSA Terminals May 17, 2020 https://s3.us-west-2.amazonaws.com/nwseaportalliance.com.if-us-west-2/prod/2021-01/PIDP%20Final%20Narrative.pdf

9. Washington State: Other Ports Funding

9.1 Port of Everett

Federal infrastructure grants to the Port of Everett from 2016 to 2020 are shown below.

Figure 9-1 Port of Everett Federal Grants 2016-2020

Port of Everett Discretionary Federal Grants 2016-2020				
Federal Program	**Lead Agency**	**Year Awarded**	**Project**	**Federal Grant US$ millions**
TIGER	Port of Everett	2016	Port of Everett South Terminal Modernization	$10.0
BUILD	Port of Everett	2020	Mills to Maritime Cargo Terminal	$17.8
Grand Total				$27.8

A TIGER grant of $10 million was provided for the South Terminal Modernization Project in 2016. The South Terminal dock was originally built in the 1970s by The Weyerhaeuser Company to support forest products, and in its previous state, was only able to accommodate 500 pounds per square foot (psf); modern cargo operations re-quire a minimum of 1,000 psf. The Port broke ground on the South Terminal wharf strengthening (phase 2) project in 2018. The project completed strengthening of the 700-foot South Terminal wharf, acquired and relocated two Post-Panamax container cranes from the Port of Los Angeles to the dock, and upgraded dock electrical to support future shore power to allow ships to plug in and reduce emissions. Earlier work included on-dock rail upgrades, totaling $8 million to support the modernized facility. Total cost of the project was US$57 million.[52]

The ”Mills to Maritime” project includes development of a new breakbulk marine cargo terminal on the site of a former Kimberley-Clark Corporation pulp mill at the Port of Everett. The Port acquired 58 acres of the former mill site for maritime development and 19 acres of tidelands north of the boat launch for river management and public access for $33 million in 2019.[53] The new cargo terminal will be called Norton Terminal. The Port expects to break ground on the Norton Terminal Preload and Model Toxics Control Act (MTCA) 3rd Interim Action project in mid-2021. Work scope includes constructing a preload over approximately six acres of the Norton Terminal footprint, removal and transport of approximately 2,300 tons of existing crushed rock from the Port’s South Terminal for construction of the haul road and furnishing and installing another approximately 50,000 cubic yards of crushed rock material for the balance of the preload. Other ancillary work includes temporary erosion control measures, furnishing and installing settlement plates, relocating concrete ecology blocks, sweeping, and other related work. Bid solicitation for the second phase of the project – Norton Terminal Development – is anticipated in June 2021. Norton Terminal is on target to open in 2022. Total cost of the project is estimated at US$36 million.

[52] “Port Of Everett Celebrates Completion Of South Terminal Upgrades” MYEVERETTNEWS.com January 12, 2021 https://myeverettnews.com/2021/01/12/port-of-everett-celebrates-completion-of-south-terminal/

[53] “Threat Of Condemnation Leads To Kimberly-Clark Sales Agreement With Port Of Everett” MYEVERETTNEWS.com October 22, 2019. https://myeverettnews.com/2019/10/22/threat-of-condemnation-leads-to-kimberly-clark-sales-agreement-with-port-of-everett/

9.2 Port of Vancouver

The Port of Vancouver Washington has received several federal grants for development of the West Vancouver Freight Access project (WVFA). The WVFA is a decade-long, $250 million program consisting of 21 individual projects to improve freight rail movement through the port and along the BNSF Railway and Union Pacific Railroad mainlines connecting the Pacific Northwest to major rail hubs in Chicago and Houston, and from Canada to Mexico. The purpose of the Project is to: 1) expand Port rail capacity and operations (within the existing Port facility), specifically unit train capacity, to enhance the rail network for future growth and development while minimizing disruption to existing Port tenants and businesses, 2) relieve congestion, improve operational efficiencies, and ensure continued safe operations as rail traffic grows in and around the Port and along the existing BNSF north-south and east-west main lines, and 3) reduce delays and improve the reliability and safety of passenger rail service within the PNWRC, particularly through the Portland Oregon/Vancouver Washington main line.

Federal grants provided for the project are shown below.

Figure 9-2 Port of Vancouver Washington Federal Grants 2009 - 2011

Port of Vancouver Washington Federal Grants 2009 - 2011				
Federal Program	**Lead Agency**	**Year Awarded**	**Project**	**Federal Grant US$ millions**
RLRI	Port of Vancouver	2009	West Vancouver Freight Access	$3.9
ARRA HSRIP	Port of Vancouver	2011	West Vancouver Freight Access	$12.6
TIGER	Port of Vancouver	2011	West Vancouver Freight Access	$10.0
Grand Total				$26.5

In 2009 and 2010 the Port of Vancouver was awarded a total of $3.9 million from the Federal Railroad Administration under the Rail Line Relocation and Improvement Program (RLRI). RLRI was authorized under SAFETEA-LU in 2005; money was first appropriated for the program in 2008.[54]

In 2011 Federal Railroad Administration (FRA) provided $12.6 million for funding of a grade separation funding under the High-Speed Intercity Passenger Rail (HSIPR) program. The source of the funds was the American Recovery and Reinvestment Act (ARRA).

In 2011 the Port of Vancouver was awarded a TIGER grant of $10 million to fund the Gateway Avenue Grade Separation project, one of the 21 projects included in the WVFA. The $17.3 million project realigned Gateway Avenue and built a 3,100-foot bridge over the port's expanding rail corridor. Approximately $8.8 million of the TIGER II funds were used to construct the Gateway overpass. The remaining grant funds were used for other rail infrastructure improvements. By separating vehicular traffic from the rail traffic below, the project reduces delays and makes it easier for trucks and other vehicles to enter and exit port terminals.[55]

[54] Rail Line Relocation & Improvement Capital Grant Program (RLR) Federal Railroad Administration https://railroads.dot.gov/grants-loans/competitive-discretionary-grant-programs/rail-line-relocation-improvement-capital

[55] "TIGER II grant funds help complete new overpass" Port of Vancouver November 15, 2013 https://www.portvanusa.com/industrial/tiger-ii-grant-funds-help-complete-new-overpass/

9.3 Port of Bellingham

The Port of Bellingham was awarded a $6.9 million PIDP grant in 2020. Grant funds will be used to complete a wide range of improvements to the Shipping Terminal including reinforcement of a “heavy-load” receiving area at the main berth allowing a wider range of cargoes. The PIDP Grant will also be used to remove navigation high spots, which have accumulated in front of the Shipping Terminal allowing deeper draft vessels to tie safely up alongside the dock. Funds will also be used to rehabilitate a barge loading facility to accommodate increasing customer demand for the domestic coastwise and cross sound transportation of cargoes using this traditional form of ocean freight. A multi-year project to repair the Columbia River jetty will benefit when Armor Rocks no longer must be loaded onto barges over the Shipping Terminal’s main pier.[56]

[56] “Port of Bellingham Secures $6.85 Million Federal Grant in Support of Working Waterfront” Port of Bellingham October 14, 2020 https://www.bellingham.org/press-releases/port-of-bellingham-secures-6-85-million-federal-grant-in-support-of-working-waterfront/

10. CALIFORNIA FUNDING PROGRAMS

10.1 Proposition 1B

California voters endorsed Proposition 1B (Highway Safety, Traffic Reduction, Air Quality and Port Security Act of 2006) in a referendum held in the November 2006 general elections. ~~Proposition 1B~~

Proposition 1B authorized the obligation of $19.925 billion of state general obligation bonds for specified purposes, The funds were to be allocated as follows:

- Corridor Mobility Improvement: $4.5 billion. The allocation will fund congestion relief projects on the state highway system.
- State Route 99: $1 billion. This allocation will fund improvements on State Route 99, located in the Central Valley.
- California Ports Infrastructure, Security and Air Quality: $3.1 billion, including $2 billion for projects that improve the movement of freight along highway and rail corridors; $1 billion for air quality improvements related to goods movement; and $100 million for port security.
- State Transportation Improvement Program (STIP): $2 billion. The allocation would provide additional funds to the existing State Transportation Improvement Program for highway improvements based on county population and number of highway miles.
- Public Transportation, Modernization Improvement and Service Enhancement: $4 billion. This allocation will direct funds to public transportation agencies for transit
- improvement projects ($3.6 billion) and intercity rail programs ($400 million).
- Transit System Safety, Security and Disaster Response: $1 billion. The program provided funding to transportation agencies for improvements to safety, security, and disaster response systems.
- State-Local Partnership Program: $1 billion. This program creates incentives for local agencies to invest in transportation improvements.
- Local Bridge Seismic Retrofit: $125 million. The program monies will provide local governments with funds to assist in meeting federal requirements for local bridge repair.
- Highway-Railroad Crossing Safety: $250 million. These funds will be used to build high priority grade separations and to make railroad crossing safety improvements.
- Highway Safety Rehabilitation and Preservation: $750 million. This allocation will provide funding for highway maintenance programs ($500 million) and traffic signal improvements ($250 million).
- School Bus Replacement Program: $200 million. The program will provide funding for the reduction of diesel emissions by retrofitting and replacing school buses.
- Local Streets and Road Improvement, Congestion Relief and Traffic Safety Account of 2006: $2 billion. This allocation will direct funds to cities and counties for street and road repair projects that reduce traffic congestion, improve traffic flow, and increase traffic safety.

The primary program for allocation of funding to port and other freight projects is the Trade Corridor Improvements Fund, which funded 12 projects for a total of $678.5 million from 2010 to 2019. By far the largest share was allocated to replacement of the Gerald Desmond Bride at the port of Long Beach, which accounted for 44 percemt of the total.

Figure 10-1 California Proposition 1B Port Projects Bond Funding

Port Projects Proposition 1B Bond Funding				
Project	**Port**	**Construction Start**	**Bond Funding**	**Share**
Cool Port Oakland	Oakland	2016	$5,000	1%
Outer Harbor Intermodal Terminal	Oakland	2010	$242,141	36%
Oakland Subtotal			**$247,141**	**36%**
West Basin Railyard Extension	POLA	2013	$20,712	3%
Everport Terminal Berth Efficiency and Emission Reduction	POLA	2019	$5,430	1%
West Basin Rail Access Improvements	POLA	2012	$50,141	7%
TraPac Terminal Automation	POLA	2015	$2,840	0%
YTI Terminal Enhancement & Truck Trip Reduction Program	POLA	2013	$9,533	1%
Port of Los Angeles Subtotal			**$88,656**	**13%**
Gerald Desmond Bridge Replacement	POLB	2013	$299,795	44%
Middle Harbor Terminal Redevelopment	POLB	2017	$15,436	2%
Ports Rail System Tier I (Pier F Support Yard)	POLB	2012	$4,093	1%
Track Realignment at Ocean Boulevard	POLB	2012	$16,216	2%
Port of Long Beach Subtotal			**$335,540**	**49%**
San Francisco Bay to Stockton Ship Channel Deepening	Stockton	2012	$7,200	1%
Total			$678,537	100%

11. PORTS OF LOS ANGELES AND LONG BEACH FUNDING

11.1 Institutional Structure

The Port of Los Angles (POLA) and Port of Long Beach (POLB) are municipal ports, and are managed as independent departments of their respective cities which were granted sovereign tide and submerged lands in trust in the early 1900s by the state of California. The Harbor District comprising each port is governed by a Board of Commissioners, appointed by the mayor and confirmed by the city council of each city, and each port is a fiscally independent department and an enterprise fund of their city. As such, the ports must be financially self-sufficient through revenues generated by operations, and they have no taxing authority.

Like other U.S. ports, POLA and POLB may receive state and federal grants, and are eligible entities to compete for federal discretionary funding under the Department of Transportation (DOT)'s TIGER/BUILD/RAISE, INFRA, and MARAD PIDP grants.

11.2 POLA/POLB Discretionary Federal Funding 2011-2020

11.2.1 TIGER-BUILD-RAISE Grants

The Port of Long Beach was awarded a $17million federal grant under the fiscal year 2011 TIGER program, as shown below.

Figure 11-1 POLA/POLB Related TIGER Grants

POLA/POLB Related TIGER Grants 2011 - 2014			
Program	**Year Awarded**	**Project**	**Federal Grant US$ millions**
TIGER	2011	Port of Long Beach Rail Alignment	$17.0

The Port of Long Beach received a DOT Tiger Grant of $17 million to support a $64.5 million port-wide rail alignment project in 2011. The project is designed to improve the lead tracks serving two rail yards and relive a chokepoint at the Ocean Boulevard overcrossing, where a large portion of the cargo handled by the port either moves to transit centers or exits port property. The project will improve efficiency and reduce the environmental impact of freight movements, create jobs, and enable the port to move 35% of goods via on-dock rail by 2035.

11.2.2 FASTLANE and INFRA Grants

Southern California Goods Movement and Freight Corridor projects received federal grants under the FASTLANE and INFRA programs, as shown below.

Figure 11-2 Southern California Freight Corridor FASTLANE & INFRA Grants

Southern California FASTLANE and INFRA Grants 2016 - 2020			
Federal Program	**Year Awarded**	**Project**	**Federal Grants US$ Millions**
INFRA	2017	City of Bakersfield's Centennial Corridor State Route 58/99 Freight Improvement Project	$50.0
INFRA	2018	Inter-state 5 Golden State Chokepoint Relief Program (CA I-5 segment, Los Angeles Metropolitan & Transportation Authority)	$47.0
INFRA	2019	Interstate 15- French Valley Parkway Improvement Phase 2	$50.0
INFRA	2021	SR-57 and SR-60 Freeway Improvement Project	30.0
TOTAL			$177.0

As a significant part of the Southern California freight corridor system, these highway and freight corridor improvement projects directly benefit the operational efficiency and capacity of POLA and POLB, and also work to mitigate traffic congestion on key federal freight corridors and regional interchanges.

In 2017, the City of Bakersfield was awarded a $50million DOT INFRA grant to support the city's $386.6 million Centennial Corridor SR 58/99 project. The project constructs the SR-58 Connector/Mainline and related components of the Centennial Corridor program in Bakersfield. The Centennial Corridor, once completed, will span approximately 11 miles from Cottonwood Road in the East to Heath Road in the West. The INFRA project spans a current gap in the freight corridor by extending the Westside Parkway to the southeast from its existing terminus at Truxton Avenue to connect with SR-58 and SR-99.

In 2018, Los Angeles County Metropolitan Transportation Authority received a $47,000,000 DOT INFRA grant to support the $500 million Golden State Chokepoint Relief Program to improve Interstate 5 in Los Angeles County. The project will construct approximately 13.4 centerline miles of HOV lanes; add approximately 2.7 miles of new truck lanes; build auxiliary lanes; widen and replace bridges, and make other improvements.

In 2019, the City of Temecula was awarded a $50 million DOT INFRA grant to construct a two-lane northbound freight collector/distributor system along the major regional and interstate freight corridor of I-15.

In 2021, The Los Angeles County Metropolitan Transportation Authority will be awarded $30.0 million in INFRA grant funding to construct a series of improvements aimed at improving traffic flow in the confluence area (1.3 miles) between the SR-57 and SR-60 freeways in Los Angeles County. These state routes are significant infrastructure supporting freight movements to and from the ports of Los Angeles and Long Beach, as well as the regional goods movement systems in Southern California.

11.2.3 Port Infrastructure Development Program (PIDP) Grants

Out of 18 projects awarded DOT MARAD PIDP grants in 2019-2020, four (4) were awarded to the ports of Los Angeles and Long Beach. These projects focused on improving intermodal and goods movement, freight corridor operating efficiency and capacity, and, as result, reduce congestion and emissions impact of freight system operations related to POLA and POLB.

POLA/POLB Port Related PIDP Grants (2019-2020)			
Federal Program	**Year Awarded**	**Project**	**Federal Grants US$ Millions**
PIDP	2019	Port of Los Angeles's Pier 300 On-Dock Intermodal Railyard Expansion and Modernization Project	$18.2
PIDP	2019	Alameda Corridor South Access: POLB Terminal Island Rail Junction Project	$14.5
PIDP	2019	Port of Long Beach - East Basin Rail Gateway Expansion: Fourth Track at Ocean Project	$8.0
PIDP	2019	Port of Los Angeles - SR 47-Vincent Thomas Bridge & Harbor Boulevard-Front Street Interchange Improvement Project	10.0
TOTAL			**$50.0**

Port of Los Angeles was awarded a PIDP grant of $18.2 million to support a $40.5 million investment in the Pier 300 On-Dock Rail Modernization and Expansion project. The grant will be used to increase the capacity of the existing on-dock railyard by adding 11,500 linear feet of track. This project will improve the terminal's rail capacity by 10 percent while also creating utility corridors and drainage systems that will minimize the impact of storm-related damage.

In the same year, POLA was awarded another PIDP grant of $9.88 million to support the $59.5 million SR 47-Vincent Thomas Bridge & Harbor Boulevard-Front Street Interchange Improvement Project. This grant will help reduce delays and accidents at the Port of Los Angeles. The project interchange directly serves

two container terminals, which handle approximately 5% of all waterborne containers entering/exiting the U.S. About 40% of all U.S. imports and 25% of all U.S. exports move through the ports of Los Angeles and Long Beach.

Port of Long Beach was also awarded a PIDP grant of $14.5 million for a $40 million rail junction improvement project. This project improves the capacity at the Terminal Island Wye rail junction by constructing and replacing rail and sidings that will improve the efficiency of rail operations. The intended rail enhancements will increase the longevity of the resulting infrastructure.

12. PORT OF OAKLAND FUNDING

12.1 Institutional Structure

As a California State Tidelands Trust grant, the City of Oakland Charter gives the Board of Port Commissioner exclusive control and management of the Port of Oakland. The Port Commissioners are nominated by the City Major and appointed by the City council for four-year terms. Similar to POLA and POLB, the Port of Oakland is a fiscally independent department. As such, the ports must be financially self-sufficient through revenues generated by operations, and they have no taxing authority.

Like other U.S. ports, Port of Oakland may receive state and federal grants, and are eligible entities to compete for federal discretionary funding under the Department of Transportation (DOT)'s TIGER/BUILD/RAISE, INFRA, and MARAD PIDP grants.

12.2 Port of Oakland Discretionary Federal Funding 2011-2020

12.2.1 TIGER-BUILD-RAISE Grants

The Port of Oakland received a $15 million grant under the TIGER program, as shown below.

Figure 12-1 Port of Oakland TIGER Grants

Port of Oakland Related TIGER Grants 2011 - 2020			
Program	**Year Awarded**	**Project**	**Federal Grant US$ millions**
TIGER	2012	Intermodal Rail Improvement Project	$15.0

The Port of Oakland was awarded a $15million TIGER grant in 2012 to support the $43 million Intermodal Rail Improvements Project. The project will boost rail access and capacity at the port by building a new arrival track and a fast turn-out from the Union Pacific mainline, two new lead tracks into the port's new Joint Intermodal Terminal, and a new manifest yard (Knight Yard) to replace the former Oakland Army Base Yard. With this improvement project the Knight Yard will be able to handle 100-150 rail cars per day. The TIGER grant project is a crucial first step in the $400 million Oakland Global development program, a significant redevelopment effort to transform the former Oakland Army Base into a nationally significant trade and logistic hub.

12.2.2 FASTLANE and INFRA Grants

The Port of Oakland has not received a FASTLANE and INFRA grant.

12.2.3 Port Infrastructure Development Program (PIDP) Grants

The Port of Oakland has applied for PIDP in 2019, but has not received a PIDP grant.

13. OTHER CALIFORNIA PORTS FUNDING

Through the study period of 2015-2020, several other California ports received discretionary grants, as detailed below.

13.1 Port of Hueneme

The Port of Hueneme was awarded a US$ 12.3 million TIGER grant in 2015 to support the US$ 24.5 million Terminal & Intermodal Improvement Project, and also received a US$ 53.4 million DOT MARAD PIDP grant in 2020 for a US $ 66.7 million automobile terminal and intermodal improvement project.

The US$ 12.3 million TIGER grant provided funding to improve intermodal infrastructure at the port, including deepening berths, strengthening wharfs, and modernizing cargo handling infrastructure and extending on-dock rail capacity. The projects work to enhance economic competitiveness by allowing the port to accommodate larger vessels and reduce shipping costs for the port's users. It also extended the useful life of the existing wharf and increased the volume of goods transiting the port via rail. Modernized cargo handing infrastructure also reduces environmental impacts.

In partnership with the Oxnard Harbor District, the Port of Hueneme was awarded a US$ 53.4 million MARAD PIDP grant for a US$ 100 million investment supporting the improvement and modernization of the port auto terminal and intermodal facilities.

13.2 Port of San Diego

The Port of San Diego is designated as a Maritime Administration Strategic Port and supports the Navy's activities of ship building and repair services, as well as national security emergency logistics. In 2015 the Port of San Diego was awarded a US$ 10 million TIGER grant to support the US$ 22.2 million Tenth Avenue Marine Terminal Modernization Project. The modernization project removed obsolete transit sheds and constructed a new laydown area for temporary equipment storage with on-dock rail improvements.

The terminal modernization improved capacity and operational efficiency for port users. The removal of transit sheds improved the safety of oversized cargo movements by creating adequate space to handle modern cargos. The new compressed air system will eliminate the need for subsequent stops at an adjacent rail yard. The project reduced noise and emissions and improved quality of life benefits for residents of the areas.

13.3 Port of San Francisco

The Port of San Francisco was awarded a US$5.2 million MARAD PIDP grant in 2020 to support the US$7.2 million Pier Improvement to promote Economic Recovery and Sustainability Project.

13.4 Port of Stockton

Port of Stockton received US$13 million as part of a shared TIGER grant of US$30 million with the Ports of Oakland and West Sacramento. Funding was provided to facilitate the acquisition and construction of infrastructure to develop a container on barge service between the three respective ports. Stockton's share of the funding was for acquisition of two 140 ton mobile harbor cranes; construction of a rail served container yard; demolition of a boiler room and an old rail mounted container crane; completion of a loop railroad system on the West Complex allowing for unit train delivery; and shared purchase of a barge with Oakland and West Sacramento.[57]

[57] Port of Stockton - 2010 and Beyond Steve Escobar 2010
http://www.cmanc.com/web/presentations/StocktonFall2010/SteveEscobar.pdf