

Greater Vancouver Gateway Council

mcts

**Major Commercial
Transportation System**

**Rail Capacity & Regional Planning
Issues Overview**

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About the Greater Vancouver Gateway Council

The Gateway Council comprises senior executives from industry and governments who subscribe to a common vision that Greater Vancouver become the Gateway of Choice for North America. The Gateway Council and its members work together to ensure the Gateway efficiently provides the highest level of customer satisfaction.

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1.0 Introduction

The Greater Vancouver Gateway is one of the largest and fastest growing transportation complexes on the West Coast of North America. As a significant player in the global logistics chain, it transports over 100 million tonnes of cargo, 16 million air passengers and 1 million cruise ship passengers every year. The Gateway is composed of people, services and facilities that provide key linkages from Vancouver to global markets.

There is a large and increasing deficit in transportation infrastructure, which combined with the population growth has led to increasing congestion in Greater Vancouver for cargo and passengers. This inhibits international trade and tourism, stifles economic development and discourages business and industry investment not only for the local economy but also for Western Canada.

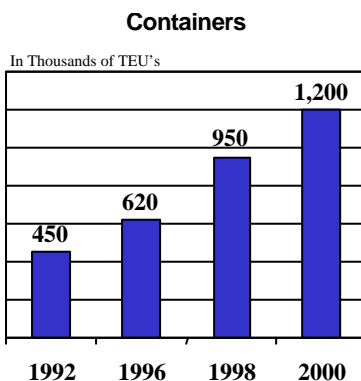
A multi-modal Major Commercial Transportation System (MCTS) is being proposed for the Greater Vancouver region to make best use of existing infrastructure and provide a blueprint for investments in new infrastructure. It is intended to be an efficient, environmentally sustainable and safe system of routes linking Gateway facilities and industrial areas to the nation's major trade routes: by sea, air, road and rail.

Railroads are an essential component of the MCTS. There has been ongoing investment in rail infrastructure by the railways and today's system is handling current traffic volumes. The proposed rail infrastructure recommended in this report will enhance and improve the rail system to meet future cargo volumes. Although most rail corridors in the Greater Vancouver Region are privately owned, substantial benefits to the public are generated from their operations. The freight moved by railroads is of great commercial value to all sectors of the Canadian economy. Commodities such as potash, sulphur, coal, grain, forest products and manufactured goods all rely upon efficient rail access to reach processing and intermodal facilities.

Although the MCTS is for commercial transportation, commuters will be beneficiaries of the system as well. However, the use of rail rights of way for commuter service must not negatively impact commercial goods movements. When implemented, we believe, the MCTS will remove bottlenecks on key commuter routes and provide expanded capacity for passenger movement across the region.

The potential increased movements of commercial goods and passengers by rail within the Region, to help alleviate road congestion are considered to be an important component of the MCTS. A process was initiated through a Rail Committee of key Stakeholders to address this potential.

This report summarizes the Committee's progress to date and provides an overview of the key regional issues affecting rail capacity, its importance to sustainable economic and environmental development, and the priority infrastructure improvements required on the existing rail system to support the current and projected demands of the commercial transportation system.



2.0 The Railway System Today

Greater Vancouver's rail system comprises over 500 km of rail corridors, terminals, interchanges and yards. These facilities are located throughout the region. Due to the geography of the Region the rail system must cross over water and road routes.

2.1 Market Characteristics

A reliable and efficient gateway is essential to ensure the competitiveness of Canadian products in the world market. The rail mode of transportation participates in approximately 60% of the 99 million tonnes of cargo that flows in and out of the Province of British Columbia. A total of 84 million tonnes are received and 51 million tonnes are shipped, of which 36 million tonnes remain within the Province.

Transport Canada's recently published "Freight Transportation in British Columbia: Final Report" indicated that 88.7 million tonnes of cargo was exported to international markets and 10.2 million tonnes were imported from international markets in the year 2000 excluding shipments to and from the United States. Exports to the United States totalled 19 Million tonnes and imports amounted to 5.7 million tonnes.

Based upon surveys completed in 1994 over 65,000 person years of work are generated by the Gateway. Direct economic output of the Gateway comprises \$1.9 billion in purchased materials and services, \$1.2 billion in wages and \$0.8 billion in capital. Indirect and induced outputs add \$1.9 billion and \$2.2 billion respectively for a total of \$8 billion (the Gateway Council is in the process of updating this data).

Summary of Flows (Million Tonnes) In and Out of British Columbia (year 2000 estimates)

Commodity	BC Local	Domestic		USA		International		Totals	Growth Rate	2010 Forecasts
		Import	Export	Import	Export	Import	Export			
Bulk										
Coal	-	-	0.5	-	0.5	-	32.7	33.7	0.4%	35.1
Grains	0.4	0.6	-	-	-	-	15.6	16.6	1.4%	19.0
Fertilizer Materials	1.1	-	1.1	-	-	-	9.4	11.6	0.3%	12.0
Other	0.4	2.0	-	0.5	0.8	1.0	4.5	9.2	1.1%	10.3
Bulk Sub total	1.9	2.7	1.6	0.5	1.3	1.0	62.2	71.2	0.7%	76.4
Containers										
Containers – TEUS	-	-	-	-	-	0.5	0.6	1.2	4.8%	1.9
Containers – tonnes	-	-	-	-	-	3.3	6.7	10.0	4.8%	16.0
Trailers-on-Flat-Car (tonnes)	0.3	-	-	0.1	0.1	-	-	0.5	4.8%	0.9
Containers Subtotal	0.3	-	-	0.1	0.1	3.3	6.7	10.5	4.8%	16.8
Forest Products	26.0	2.5	2.5	1.5	9.6	0.9	9.9	52.8	0.0%	52.8
Minerals & Metals										
Alumina & Bauxite	-	-	-	-	-	0.5	-	0.5		
Iron Ore	-	-	-	-	-	-	-	-		
Non-Ferrous Metals	1.0	-	-	-	-	-	0.4	1.4		
Minerals & Metals Subtotal	1.0	-	-	-	-	0.5	0.4	1.9	0.5%	2.0
Other										
Animal & Food Products	2.5	2.0	0.8	0.8	3.0	-	-	9.0		
Construction Materials	4.0	0.5	0.5	0.5	3.0	-	-	8.5		
Other Commodities	4.0	3.8	2.8	1.7	1.7	-	-	14.0		
Steel	0.6	1.1	0.5	0.7	0.3	-	-	3.2		
Other Subtotal	11.1	7.4	4.6	3.7	8.0	-	-	34.7		
Adjusted for trade	4.1	2.6	2.3	3.7	8.0	4.5	9.5	34.7	1.5%	40.3
Grand Total	33.3	7.8	6.4	5.7	19.0	10.2	88.7	171.1	1.0%	188.4

This chart from Transport Canada's *Freight Transportation In British Columbia: Final Report TP 13909 E*, March 2002

2.2 System Components

The transport of these commodities to, from and within the Gateway is served by five railways -- Canadian National (CNR), Canadian Pacific Railway (CPR), Burlington Northern Santa Fe (BNSF), BC Rail (BCR) and Southern Railway of BC (SRY).

Each of these railways own segments of rail rights of way and facilities in the region. The Gateway rail network consists of interconnecting yards and interchanges that allow for pick-up and delivery of goods to and from port terminals.

The three types of facilities are described as follows:

- **Core Rail Network:** freight routes that are anticipated to be active over a 20-year period, directly or indirectly serving the Gateway and involved in the transport of International goods are defined as “core” to the MCTS. These routes include some of the lines and bridges illustrated on the following page.
- **Rail Yards & Interchanges:** Integral to the processing of incoming and outgoing railcars is the capability to “disassemble” and “re-assemble” different train sets for delivery to Port Terminals and other rail customers. Over 20 yards provide this capability throughout the region to sort and stage cars en route to their final destinations in the Lower Mainland and throughout North America. Some yards facilitate interchange of cars between Rail Carriers.
- **Terminals:** Facilities for handling of specific commodities. For example, coal is routed through Roberts Bank and Neptune Terminals, motor vehicles through Annacis Auto Terminals and export grain via five grain terminals in the Port of Vancouver.

These elements of the system are intricately related and must co-ordinate their activities in order to efficiently handle import and export cargoes. For instance Port terminals must co-ordinate rail delivery of commodities with the arrival of vessels. Consequently, the absence or alteration of each component of this system has an impact on the location, costs and operational efficiencies of the other.

Lower Mainland track ownership and rail yards



This map from Transport Canada's *Freight Transportation In British Columbia: Final Report TP 13909 E*, March 2002

2.3 Regional Benefits of Rail

The ability to economically and efficiently increase use of rail transport is an important component of the sustainable future of the Greater Vancouver Region. Freight rail is the backbone for transport of goods to and from the Region. It also acts as an alternative mode of regional transport with relatively lower environmental impacts. Railways are significant contributors to local communities in both jobs and taxes. In addition, they pay for and maintain their own railbeds, trackage and rights of way.

- **Alternative Mode of Freight Transport:** On some market segments, rail may provide an alternative to trucking. This alternative could provide an important modal choice as regional roads and highways become increasingly congested. Private ownership of rail infrastructure provides the added benefit of reduced cost to the public when rail acts as an alternative to road transport.
- **Lower Environmental Impacts:** Railroads are about 3 to 5 times more fuel-efficient than trucks (US EPA estimates that a typical truck emits 3 times more nitrogen oxides and particulates than locomotives). Reduced dependency on fuel is an important feature of environmental sustainability.
- **Improved Road Safety:** Movement of heavy commercial goods by rail provides expanded road capacity, reduces road maintenance costs and increases safety on the roads.

3.0 Rail Capacity & Regional Development

Despite the benefits of rail transport in serving the Greater Vancouver Gateway, it is a system that is under tremendous pressure.

The challenge for any surface transportation mode in the Lower Mainland is the topography of the region. Inclines, slopes and waterways result in limited routes and crossings within the Region. The need to solve these challenges has been recognized by service providers and specific solutions include:

- **Swing and Lift Spans:** Crossings such as the New Westminster Rail Bridge has some level of coordination with marine traffic for bridge closures. However, scheduled and unscheduled marine traffic requiring bridge closures adds to capacity constraints, particularly at peak hours.
- **Segregated Crossings:** At-grade road crossings are primary safety issues that can be overcome through the construction of over/underpasses in order to segregate vehicular and train movements. Consideration should be given to the closure of some roads and other road crossings could be consolidated.

In addition to infrastructure solutions, there are longer-term strategic issues that must be addressed to enhance the regional sustainability of rail transport. Main issues include:

- Availability of industrial lands
- Compatibility With Adjacent Uses
- Competition with other uses
- Urban Rail Transit

Each of these issues have a strong disruptive potential to the relationships of operations between yards, interconnecting rail lines and Port Terminals essential to a competitive system for the Gateway.

3.1 Availability of Industrial Lands

The conversion of industrial lands to alternate uses over the past thirty years has radically transformed the Greater Vancouver Region. A progressive decentralization of industrial lands from Vancouver to the suburbs has challenged the viability of rail operations serving remaining terminals and port facilities.

The lack of availability of industrial and terminal land impact rail operations in the following ways:

- **Viability of rail operations:** The reduction in the amount of industrial lands and terminals reduces demand for local rail operations. Consequently, lower traffic along rail rights of way impacts on the economic viability of operations.
- **Development pressures on rail lines:** Rail lines themselves, through reduced financial viability and compatibility with adjacent uses, are being subjected to significant pressures due to alternative development potential. Furthermore, the ability to expand rail, terminal or yard operations is constrained.

The relationship between land uses and rail rights of way has a system-wide impact on the nature of transportation operations within an urban region. Reduction in train services may be accompanied by increases in truck traffic to replace services. Furthermore, the inability to reclaim lost rights-of-ways negates the use of corridors for future transportation of rail freight and/or passengers.

When a railway determines that a rail corridor over which freight rail service is, or is planned to be, discontinued and plans to dispose of such corridor, any potential acquisition of such rail corridor should be governed by commercially negotiated terms and conditions within a reasonable time frame.

The following issues that impact on the sustainability of rail operations within the Region must be considered:

- Integration of rail planning into regional growth, including consideration on impacts of developments on the viability of rail routes and associated yards, industrial areas and terminals.
- Industrial Land Use Strategy that ties together the future demands and opportunities of rail access for both freight and passenger movements.

3.2 Compatibility With Adjacent Uses

The change from traditionally industrial areas to new types of land uses is creating a new set of issues. Residential developments and more recently, conversion of industrial properties to lofts have generated a significant increase in new neighbours adjacent to rail operations.

The rapid growth of residential communities next to rail corridors poses a long-term threat to the viability of the railroads. As former industrial areas are converted to living quarters, there is increasing urban pressure for rail carriers to reduce operations or leave the community, thereby adding costs and reducing their ability to compete.

The role of regional planning therefore must not inhibit rail operations that are essential to the current and future economic viability of the Region. A "Sustainable Region" in Greater Vancouver must ensure that:

- **Constituencies Sensitive To Rail Uses** are not created to inhibit the capacity and operation of rail routes, terminals and yards.
- **Land Use Planning** must encourage the location of complementary land uses adjacent to core rail corridors, terminals and yards.

3.3 Competition with other Uses

As the Greater Vancouver Region continues to pursue more choices for commuters, and promotes the growth of tourism and travel, the role of commuter rail and tourist trains has become even more prominent. Current passenger services include operations such as Via Rail, the West Coast Express, the Rocky Mountaineer and Amtrak Cascades.

Increased passenger rail service would assist in addressing both congestion and associated environmental concerns within this region that are attributable in large part to commuter traffic. An increase in the use of commuter rail would also assist in the movement of goods within the region that must rely on truck transportation. While these benefits may on the surface aid the issues of peak hour congestion on our regional roads, their introduction needs to ensure that they do not degrade rail service to freight customers.

During peak hours, for example, the need for frequent passenger rail services may lead to reduced goods movements, which may in fact reduce the viability of services to a point that the freight shipped is carried on trucks. This would have the direct opposite impact on congestion than was originally intended by the passenger services.

Transportation and regional planning must carefully examine the choices made to advance passenger rail routes to ensure that the capacity available to serve freight traffic is not adversely impacted. This includes:

- **Adding new capacity** primarily on existing rights of way for handling both commuter and freight rail,
- **Forecasting the demand** for passenger rail services to provide for joint regional planning for rail routes over the next 20 years.

4.0 The Rail System and the MCTS

The overall objective of the MCTS is to provide an efficient and internationally competitive regional commercial transportation system for the Gateway that:

- Provides a continuous network for efficient commercial vehicle operations
- Utilizes multi-model solutions (road, rail and water routes) to alleviate traffic congestion
- Accommodates future growth in goods, services and local and international passenger movements
- Enables 24 hour unrestricted commercial vehicle and rail traffic use
- Provides rail movements free of road intersection constraints
- Enhances connectivity to north-south & east-west trade corridors
- Provides for cost effective solutions to specific bottlenecks

The MCTS would link Gateway facilities and major industrial areas with an efficient network of roads, rail and water routes. The intention is to improve the efficiencies of commercial movements in and through the region in the context of a multi-modal system.

The Rail System in the MCTS identifies the core rail network and the rail infrastructure investments and priority routes having the greatest importance for goods movements in the region.

4.1 MCTS Rail Infrastructure Priorities – Best Use of Existing System

Through a process of reviewing all route constraints on the core rail network, identifying areas of traffic volumes, identifying physical, operational and external constraints, estimated costs and expected benefits, the MCTS Rail Committee of key stakeholders reached agreement on the rail infrastructure priority projects.

Seventeen investment improvement projects are identified. They are grouped in first and second priority projects intended to address current and long term planning for the existing rail system.

First Priority Projects:

New Westminster (Fraser River) Rail Bridge – Upgrade/Replacement

Pitt River Swing Span Rail Bridge – Upgrade/Replacement

Roberts Bank – 41B Grade Separation

Mud Bay – West Leg of the Y

BN New Yard to Spruce St. – Siding

Colebrook - North/South – Siding

Colebrook - East/West – Siding and/or Boundary Bay – Siding /Grade Separation

Second Priority Projects:

Westwood St. – Grade Separation

Harris Road – Grade Separation

King Edward Ave. – Grade Separation

Pemberton Ave. – Grade Separation

Victoria Drive – 4 Quadrant Gates

Queensborough Bridge – Widening

Front St. – Grade Separation

BNSF Burrard Inlet Line @ Powell St. – Double Track/Grade Separation

BNSF Line-CN Junction – Siding

Chilliwack - Yale – Grade Separation

Information relating to each project is included in the Rail Infrastructure Improvement Matrix¹. Many of the proposed rail improvements will have a positive impact on the MCTS road network by improving road vehicle traffic flows.

¹ See Appendix F.

4.2 Potential for expanded Passenger Rail

Reduced congestion on regional roads is a potential benefit of expanded passenger services. The challenge is to ensure that a regional transportation system is developed that can maximize the movement of both goods and passengers without compromising freight rail. Issues to be addressed relate to how this can be accomplished. Considerations such as shared use occupancy or separate tracks within rights of way, the possibility of using underutilized lines for short sprints in context to population growth, travel patterns and choke points need to be further investigated and future development is pending further technical work, study and funding.

To assist the identification of potential passenger rail initiatives, existing rail lines were reviewed against demographic growth projections, trends and traffic patterns over the next 20 years.

Two projects were identified as potential priorities for future development, pending further technical work, study and funding.

CP Sapperton line

- Potential alternative to Coquitlam SkyTrain extension
- Use of CPR right of way for a separate commuter rail track to connect Coquitlam Station to Sapperton Station at Braid Street based on 15 minute frequency of service. Technology to be considered could include use of self powered modern railcars (e.g. OC Transpo, Bombardier "Talent" cars)

Langley/Cloverdale/Newton/Scott Road Station

- Potential for passenger rail connection from Langley or Cloverdale park and ride to Scott Road Station via Newton
- Potential Surrey/Northeast Sector connection with completion of a new New Westminster rail bridge, with links to SkyTrain and CP Sapperton line.

Other proposed enhancements for potential passenger movements include:

West Coast Express

- 6th train
- Counter flow

BN: Amtrak Service

- Need for rail infrastructure improvements between Surrey and Downtown Vancouver, if service is to be expanded (service currently operates one train per day between Vancouver and Seattle).

Richmond/Airport/Vancouver Rapid Transit Line

- The Cambie corridor has been identified as the most feasible route to date.

GVTA Passenger Rail MAP



4.3 Future Systems Vision and Planning Directions

Freight rail capacity issues must be included in the framework of regional planning in the Greater Vancouver region. While rail routes are regulated by provincial and federal legislation, municipal and regional governments also play an important role in establishing policy directions for the use of rail corridors.

In addition to protecting existing corridors for freight and passenger movements other major constraints to transportation and economic growth, such as municipal taxation, fees, land use plans and regulatory burdens must be addressed if we are to achieve a multi modal system for this region.

Issues such as the interface of rail with urban areas are themes that can be advanced within three different processes.

- **Greater Vancouver Regional District “Sustainable Region Initiative”:** This initiative is a stakeholder driven planning process, which will lead to a new mode of thinking for regional development towards 2030. The MCTS process and identified priorities must be included since transportation plays such a key role in the economic viability of the region.
- **TransLink Longer Range Strategic Plan:** Future planning to 2030 will provide a comprehensive examination of the key priorities that will impact transportation planning. It is essential that this transportation plan be incorporated into the Regional District’s SRI Initiative.
- **Community Charter:** The community charter consultations have focused on the nature of municipal powers and the role of regional governance. There has not been meaningful consultation with the Business Sector on this critical legislation that if enacted in its current form has the potential to prevent the creation of a thriving private sector economy that creates high paying job opportunities that was referenced in the Government’s New Era Document. There is a need to continue to advocate and address important issues such as escalating municipal taxation of Industrial property, increasing assessed land values, fees and regulations that are major barriers to transportation and economic growth.

Advancing the issues of industrial land availability, compatible land uses and competition with other users of rail lines are issues that should be integrated into these planning processes. In particular, coordination with regional economic planning will ensure that these, and other Gateway issues are included in the future development of the Greater Vancouver region.

Governments at all levels must assume responsibility by taking a leadership role in the development of long term transportation planning consistent with the current and projected growth of the region; including sustainable funding to meet the economic, social and environmental objectives of the region.

Major Commercial Transportation System Rail Committee

MCTS Rail Committee Members

John van der Burch, Southern Railway of BC, Committee Chair

Jim Crandles, Vancouver Port Authority
Eric Blokzi, Canadian National Railway
Graham Dallas, Canadian National Railway
Phil Davies, Transport Canada
Donald Fyffe, The Burlington Northern and Santa Fe Railway Co.
Don Heron, Canadian Pacific Railway
Chris Jones, Railway Association of Canada
Dante Marining, BC Rail
David MacMartin, Canadian Pacific Railway
Keith McPherson, GVGC Secretariat
John Mills, Transport Canada
Tony Nardi, B.C. Wharf Operators Association
John Wachowich, Canadian Pacific Railway
Bob Wilds, GVGC
Solomon Wong, InterVistas

MCTS Passenger Working Group
Don Heron, Canadian Pacific Railway
Doug Kelsey, West Coast Express
Martin Kobayakawa, GVTA
Clive Rock, GVTA

Mary Clappa, GVGC, MCTS Secretary/Facilitator