

TRANSPORTATION AS AN ECONOMIC GROWTH ENGINE:

Challenges, Opportunities and Policy
Suggestions

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Executive Summary

The BC Progress Board, established by Premier Gordon Campbell in July 2001, is an independent panel of 18 senior business and academic leaders. The Board is tasked with benchmarking BC's economic and social performance over time and relative to other jurisdictions. The Board also provides strategic advice to the Premier and the government on ways to improve the economy and provincial social policy supports.

Transportation is a critical factor in the economic growth and development process. It is a wealth creating industry in its own right, but is also of growing importance given British Columbia's location on the western periphery of an increasingly integrated North American economy and with its strategic location between Europe and Asia. British Columbia's transportation systems have experienced rapid growth in their scale and complexity, and financing of transportation improvements – from British Columbia's beginnings – have often involved a mixture of public and private capital and investment.

Over time the role of transportation has evolved in Canada and British Columbia. The role has been – at various stages – infrastructure/facilitator of local and regional growth, as a political tool or “pump primer” for the provincial economy, and as a growth sector in its own right. The fourth stage within British Columbia's grasp is to leverage transportation to position Canada as a global trade powerhouse.

Conceptualizing transportation as an economic growth engine for British Columbia requires an understanding of the rapid increase in global trade over the past decade or so. World trade grew at an annual rate of nearly 5.1 percent during the period 1990-2002, while global production grew by 2.1 percent annually during the same time frame. The volatility of international trade points to the need for a flexible transportation system in British Columbia with the capacity to handle peak demands efficiently. Transportation including warehousing is also an important – and growing – source of employment in British Columbia, accounting for 114,000 jobs in 2003 (or 5.6% of total employment). Transportation also has major environmental impacts and lost time from congestion affects our quality of life. Yet, transportation investments also hold the key to reducing negative environmental impacts and increasing our quality of life.

Security sits atop the global agenda and concerns suffuse international politics and economics, and demands for heightened security at borders pose significant threats to growth in trade and global commerce. British Columbia has a significant opportunity to provide strong security, which will be critical to selling the province's gateway transportation service potential domestically and internationally. Simply put, without the most advanced and secure roads, rails, ports and airports, security procedures in the United States will surely limit the flow of goods and people passing to and from Canada and the United States. Going forward, significant investments are required in people, cutting edge information and monitoring technology, and foreign policy capacity to meet the security challenge. (*See Text, pp. 8*)

Railroads are likely to be as important to British Columbia's future as they were to its founding and past. Some measures are needed to improve network capacity and the movement of goods. First, current rail bridge capacity on the Fraser River constrains the flow of traffic and leaves the province vulnerable should the current crossing be damaged. Some form of co-production or an additional rail bridge could ease the bottleneck and reduce the risk of significant disruption. Second, in order for the Port of Prince Rupert to develop its potential as a container port, tunnel heights will have to be increased to handle

double stack container trains. Third, the need for additional rolling stock is apparent. A shortage of rail cars in Canada – especially container cars – constrains the ability of gateway ports to realize their potential. A joint investment, public private partnership, or other cooperative or innovative approach could help finance an adequate supply of rail cars. Fourth, additional rail capacity in the Southern Rockies will be required. This need is pressing, and in the medium term both senior orders of government – together with major railway companies – will likely have to make a significant investment to improve rail capacity in the “national interest”. Finally, the railway industry operates within a highly competitive continental business environment. Prevailing tax and regulatory regimes should be brought into line with those in the United States to provide incentives for railways to improve rolling stock and network capacity. (*See Text, pp. 8-9; Detailed Policy Suggestions 1-2, pp. 26-27.*)

British Columbia’s *marine* transportation industry forms the primary cargo lifeline linking the province to international markets. The province has superb deep-sea ports that are: ice free year-round; can handle the largest ships in service today and in the foreseeable future; technologically advanced; closer to Asia than other North American ports; connected to excellent North American-wide rail service; and, capable of significant expansion. Recent provincial government tax reforms have provided ports with much needed relief, but other taxation areas (for example property tax and bunker fuel tax) could usefully be targeted as areas for further reduction to make ports more competitive relative to US counterparts. Better rail and road connectivity is also vital to efficiently serve British Columbia’s ports and shape them as part of an integrated global supply chain. Ensuring access to capital markets for expansion efforts ought to be encouraged, along with considering authority to issue tax-exempt bonds.

Both senior orders of government should review the 1986 joint agreement to create an International Maritime Centre (IMC), and consider expanding federal and provincial tax reforms for offshore shipping lines resident in BC in keeping with similar creative extensions and flexibility the province recently granted to the International Financial Centre (IFC). Lands surrounding ports are critically important to the “provincial and national interest”. The Governments of Canada and British Columbia should consider creating a Ports Land Reserve – similar in concept to the BC Agricultural Land Reserve – to protect waterfront and adjacent lands for future generations from other commercial and non-commercial uses. The existence of five separate port authorities means that potential economies of scale and scope are lost under current governance arrangements. Consideration should be given to establishing one “Pacific Super Port” Authority, beginning with the consolidation of the Vancouver, North Fraser and Fraser Port Authorities and eventually including Nanaimo and Prince Rupert Port Authorities. Over time as port volumes increase, consideration should be given to establishing an inland (or inter-modal) container handling facility – for example, in Prince George, Kamloops and/or the Fraser Valley – given the shortage of lands available near some tidewater ports. (*See Text, pp. 10-13; Detailed Policy Suggestions, pp. 28-29.*)

British Columbia’s vast expanses require safe, modern *roads* to link its dispersed communities. Over the 1990s, there is evidence that authorities systemically under-invested in British Columbia road maintenance and expansion. In the past several years, the Government of British Columbia has committed significant resources to transportation, but continuous investments will be required to maintain and improve road safety, and lessen travel times to move people and goods. As British Columbia nears the second half of the current decade, serious attention should be given to identifying and addressing areas where improvements can have transformational effects. A key strategic consideration should be establishing a workable timeframe for improving – to the greatest extent possible – key segments of east-west and north-south highways to four lanes to “shrink the distance” between major centres and to enhance external market connectivity. Ultimately, BC should benchmark its highway systems against the visionary US Interstate Highway Network and those of similar sized jurisdictions outside North America

to yield useful measures of highway functionality. Inter-modal road links in the Greater Vancouver Regional District, the Capital Region, the Okanagan, Nanaimo and Prince Rupert should be high priorities for federal, provincial and regional authorities. A number of areas are singled out for short to medium term action, including: in the Lower Mainland – Port Mann Bridge and Massey Tunnel twinning, construction of North and South Fraser perimeter roads, consideration of removal of parking from downtown core streets in all municipalities, proceeding expeditiously with the Maple Ridge Fraser crossing, and use of high occupancy vehicle lanes for commercial truck trailer traffic at all times of the day; and, outside the Lower Mainland – incremental improvements to the Trans Canada in the Rockies, and development of a long term plan to four-lane key segments of Highway 97 (Prince George to the Canada-US Border). These should be complemented by dynamic road pricing mechanisms. *(See Text, pp. 12-13; Detailed Policy Suggestions, pp. 28-29)*

While all transportation modes are critical to the smooth functioning of the British Columbia economy, changes to national policy for *airlines and airports* could have particularly transformative effects for British Columbia – and Western Canada – from an economic development and market connectivity point of view. Air policy is almost exclusively within the legislative purview of the federal government. Responsibility resides not only in Transport Canada, but also in Foreign Affairs Canada, International Trade Canada, Citizenship and Immigration, and the Canada Revenue Agency with growing roles played by Canadian Security Intelligence Service and the Ministry of Justice in security matters.

Making progress in advancing Canada’s air connectivity through flexible open skies treaties, along with the need to maintain and enhance the competitive position of Vancouver International Airport Authority (VIAA or YVR) and regional airports as key contributors to the national and provincial economies should be top priorities for federal (and provincial) authorities. The Government of Canada should move quickly to conclude fifth freedom and analogous cargo continuation rights at the recommendation of the VIAA under specified terms and conditions. YVR’s location and experience provide Vancouver with the opportunity to become a dominant North American gateway hub for air passenger and cargo services. Establishing true open skies arrangements with the United States (and Mexico), China, India, Singapore and eventually the European Union should be a priority for the Government of Canada. Attendant to this, real open skies to and from Canada will require coordinating immigration, customs and other federal agencies to make YVR an attractive and welcoming hub. Transport Canada should examine the current rent structure which inhibits YVR from reaching its full potential and acts as a disincentive to further advances in the award-winning airport’s competitive position. VIAA should be allowed greater governance flexibility to leverage YVR’s potential as a national economic development asset.

Turning to regional airports, British Columbia benefits from a diverse set of local, regional, and international airports. Consolidation and differentiation within the airline industry is placing pressures on regional airports to consolidate as well. With the devolution of airports to local authorities there have been significant successes as well as difficulties. BC airport mergers should be explored through pooled financing and entrepreneurial tactics to provide better scale and service. This includes efforts to create mechanisms (policies, incentives, transition grants) to link, integrate and finance BC airports economically and effectively, including where necessary downsizing and/or closures with a view to improving air service to merged entities and their service areas. In short, local airports in some areas must become more strategic and cooperative. Federal authorities should reduce YVR rent (as noted previously) or consider directly, or indirectly, recycling revenues to meet infrastructure requirements of smaller BC regional airports. Provincial aviation fuel tax relief should be also considered to provide airports with a competitive edge. *(See Text, pp. 13-19; Detailed Policy Suggestions, pp. 29-31).*

Public and urban transportation is the lifeblood of economic and social activity for major urban economies: the Greater Vancouver Regional District, the Capital Region and other larger centres (Kelowna, Nanaimo, Prince George and Kamloops). Providing efficient urban transportation is vital to sustain and enhance quality of life and the environment, which is also important for attracting and retaining knowledge workers who increasingly are the mainstay of our global economy. Urban transportation is also essential for moving goods – directly through better roads allowing for inter-modal connections between ports, airports, and rail yards, and indirectly because good public transportation reduces road congestion and makes goods movement more efficient.

Intelligent Transportation Systems (ITS), Transportation Supply Management (TSM) and transportation demand management (TDM) should be deployed to the greatest extent possible by regional, provincial and federal transportation agencies. Finding viable alternatives to single occupancy vehicles is vital especially in “peak times” (rush hours). Effective “dynamic road pricing” (peak pricing, tolls) and other traffic demand management mechanisms can make transit more attractive, reduce environmental impacts of transportation, and generally improve efficiency. One recent innovation – the U-Pass at Lower Mainland universities – is worth examining for broader application. The U-Pass is a “non-exclusive” pass which students pay as part of their tuition, and has reduced the volume of vehicles considerably during average in-session days. Consideration should be given to a similar program for commuters and large employers as part of annual tax assessments to encourage less single occupancy vehicle use and to reward frequent users with significantly lower rates. As another potential “load shifting” measure, TransLink is encouraged to continue to explore the viability of shifting a portion of commuter load onto ferries, particularly within the Burrard Inlet but also in other areas. Further load shifting to “short-sea” ferries for goods movement should also be explored, particularly within the GVRD. Marine rights-of-way are inexpensive and flexible, and reduced road congestion can create valuable clusters of urban activities around terminals thereby reducing sprawl. One other traffic demand management technique worth exploring is utilization of existing high occupancy vehicle (HOV) lanes as express lanes for trailer truck traffic at night and, perhaps, all times of the day to ease goods movement and improve inter-modal logistics.

Public transportation investments should be integrated with new land use and density powers for regional transportation authorities in order to maximize the benefits of these investments and to create more compact urban forms around stations, ferry terminals, sky-train stations and bus stops that, in turn, provide passengers (and a revenue base) for public transportation. Important “provincial and national interest” considerations within the Greater Vancouver Regional District argue in favour of streamlining GVTA (TransLink) and regional transportation agency governance so they are proper regional fiduciaries. Board members should be appointed by the provincial government, with a minority of elected representatives, and be granted clear regional transportation and related land use, taxing and borrowing/spending powers. A hybrid of the existing Vancouver International Airport Authority and Vancouver Port Authority models should be considered as a model. Consideration should be given to providing the Greater Vancouver Gateway Council with a formal advisory mandate, along with establishing a national transportation and logistics centre in British Columbia. Provincial and local governments face major fiscal constraints that hamper building needed urban infrastructure. Diverse P3 models with proven track records elsewhere can help provide the capital, but significant public investments will also be required. (*See Text, pp.23-24; Detailed Policy Suggestions, pp. 30-31*).

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I. BACKGROUND AND CONTEXT

The BC Progress Board, established by Premier Gordon Campbell in July 2001, is an independent panel of 18 senior business and academic leaders. The Board is tasked with competitively benchmarking BC's economic and social progress over time and relative to other jurisdictions. The Board also provides strategic advice to the Premier and government on ways to improve the economy and provincial social policy supports.

The BC Progress Board recognizes the importance of transportation as a critical factor in the economic growth and development process. Its facilitative role in moving goods and people in a resource- and service-based economy cannot be overstated. Transportation is a wealth creating business in its own right and is also of growing importance given BC's location on the western periphery of an increasingly integrated North American economy, and with the province's strategic position between Europe and Asia.

From the province's inception, transportation and British Columbia were virtually synonymous. The promise of the Canadian Pacific Railway and its "land bridge" brought BC into Confederation in 1871. The Grand Trunk Pacific Railway further linked BC and its northern regions to Canada and Asia in the first decade of the 20th century. A century later, a major road building program including the Trans-Canada, the Yellowhead, the Southern Trans-Provincial, Highways 5, 17, 97 and 99 knitted the province together, and linked it to the rest of Canada and to the United States. More recently, the Vancouver International Airport and the Port of Vancouver became formidable trans-Pacific gateways.

The principal lesson from our past experience is that Canada and BC will always need transportation to overcome vast spaces. In today's global economy, transportation will be the essential link between BC, other provinces, and international economies.

The Evolving Role of Transportation in Canada and British Columbia

Over time, the role of transportation has evolved greatly in Canada and British Columbia. The role has been – at various stages in BC's development – as infrastructure/facilitator of local and regional growth, as a political tool or "pump primer" for the provincial economy, and as a growth sector in its own right. The fourth stage within our grasp is transportation as a global Canadian industry with the ability to position Canada as a trade powerhouse.

Looking at transportation as *infrastructure & facilitator of local and regional growth*, tapping our resources and opening up Western Canada required huge investments. The same was true of British Columbia. Investments under the two-decade leadership of former Premier W.A.C. Bennett fostered a post-war economic boom that saw tremendous growth in the forest, mining and hydroelectric sectors. BC's interior and northern regions relied on this investment to tie BC communities and resources to the rest of Canada and US and global markets. In this context, transportation is a critical factor for economic growth, along the lines suggested in the 2002 BC Progress Board Report. There, transportation is cited as one of the "necessary conditions –

elements that must be present, be set up properly, and be of correct size and scale so as to facilitate economic growth.”

As a ***pump primer/political tool***, infrastructure brings with it construction jobs and a tool to boost local economies. It advances the prospect of brighter economic futures for regions that are linked to the global economy through infrastructure.

As a ***growth and core economic sector*** in its own right, transportation has been central to Canadian and BC development. The highly cyclical nature of both the national and provincial economies means these industries have periodically also experienced rapid growth and attracted significant attention from investors.

The fourth stage deals with the future ***prospects for transportation industries in a global setting***. Because of its location and existing transportation excellence, Canada has the potential to become the transportation equivalent of Singapore or Hong Kong for North America: that is, a multi-modal gateway to North America from both Asia and Europe. Given its Pacific gateway location, this potential is especially promising in British Columbia.

Realizing the potential of transportation as an enabler within the economy and as a growth driving industry in its own right requires an expanded view of transportation industries beyond traditional notions of being merely a means to open up new regions and resources and/or to create construction and resource jobs. Rather, transportation planning, investment, and public policy should be tailored to the emerging reality of the sector: transportation is an ongoing source of jobs and wealth creation; it is a “new” economy industry very dependent on the creation and deployment of advanced technologies; and, it is a sector where Canada excels as an exporter of high value-added services. Thus, old notions of transportation as a regulated utility should give way to transportation as a globally competitive growth and export engine deserving the most progressive and flexible regulatory and tax setting possible.

Transportation also has major environmental impacts and lost time from congestion affects our quality of life. Yet, transportation investments and policy also hold the key to reducing negative environmental impacts and to increasing our quality of life. For example, new technologies such as fuel cells, natural gas burning diesel engines, and hybrid vehicles all can reduce greenhouse gases and other aerial pollutants. Investments in efficient rapid transit (and complementary land uses as discussed later) can also help move people away from single occupancy automobiles and the congestion and pollutants these create. Improved intermodal services can result in more freight travelling by rail thereby reducing pollutants and congestion, while peak pricing and congestion/pollution charges also lower environmental costs of transport.

Overview of this Discussion Paper

This paper follows on the heels of the British Columbia Ministry of Transportation transportation plan for the province released last year ***Opening up B.C.: A Transportation Plan for British Columbia, 2003***. In contrast to that report, this paper seeks to provide a broad overview and discussion of some of the key challenges, opportunities and public policy issues facing transportation in British Columbia. It is very much a strategic overview, and not a plan *per se*.

As a result, a thorough project-by-project cost-benefit analysis of individual improvements suggested within this document is beyond the scope of the paper. The overriding objective is to identify opportunities and challenges and point out where policy change and considering broad options can help nurture transportation as a “critical factor” of British Columbia’s economic growth and development equation. The next section of the paper reviews the scale and scope of transportation in Canada and BC – at a broad level – and discusses transportation as a knowledge industry and growth engine for British Columbia. The paper then details some of the challenges and opportunities that exist for transportation industries, followed by an examination of public policy changes that can help realize transportation-linked growth opportunities. The final section discusses some ways to move forward.

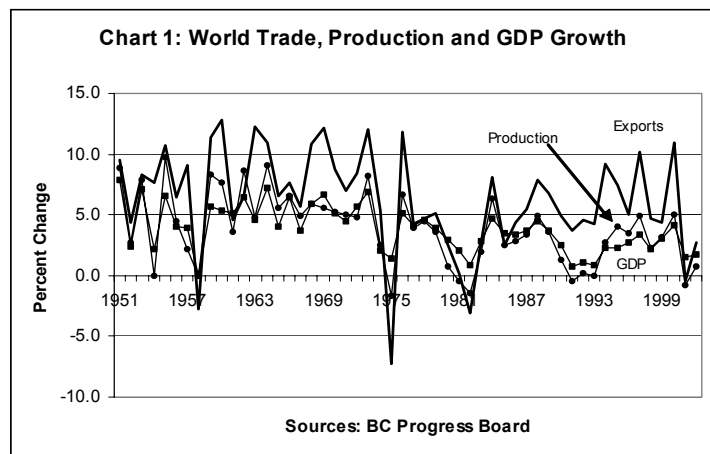
The provincial government has a large role to play in transportation’s future in the province, despite major areas of exclusive federal jurisdiction and shared federal-provincial jurisdiction. The province has already identified transportation as a key element of future economic growth and prosperity in BC and has taken a range of actions to strengthen the efficiency and competitiveness of the provincial transportation network (i.e., major road improvements, reducing fuel taxes, reducing port property taxes, to name a few). The present discussion seeks to expand the options the provincial government enjoys by providing a vehicle for public policy discussion and decision-making.

II. TRANSPORTATION AS A GROWTH ENGINE FOR BRITISH COLUMBIA AND ITS REGIONS

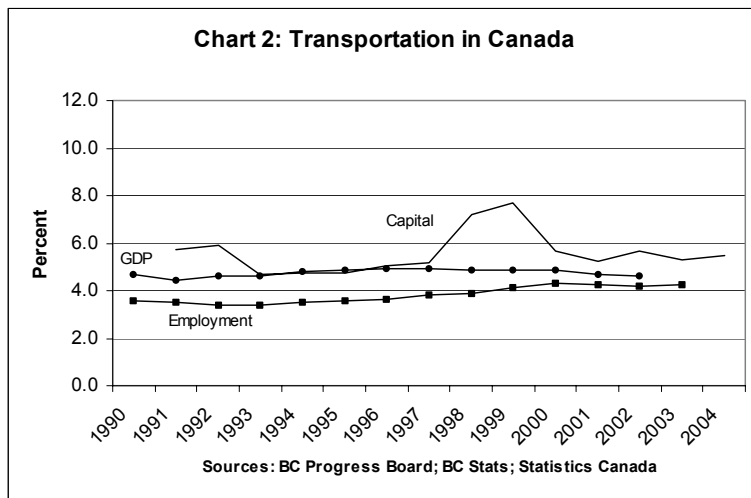
Size and Importance of Transportation Industries

Global trade is growing at a brisk pace, and has outpaced global GDP and production by a significant margin over the last half century as **Chart 1** demonstrates. World trade has grown more quickly than world production since 1990 growing at an annual rate of nearly 5.1 percent between 1990 and 2002, while world production has grown by 2.1 percent annually on average during the same time frame. The volatility of world trade points to the need for a flexible transport system with adequate capacity to handle peak demand efficiently. On-going declines in real transport costs are a significant spur to trade and should be seen as a part of our trade policy.

The boom in world trade over the past half century, led by the global sourcing of inputs and finished products, has placed enormous demands on regional, national and global transportation systems. In the process, it has also created huge opportunities for Canada generally, and British Columbia in



particular. Transportation industries tend to be of large *size and scale*. Such industries also tend to be large employers, substantial sources of capital spending, and significant contributors to

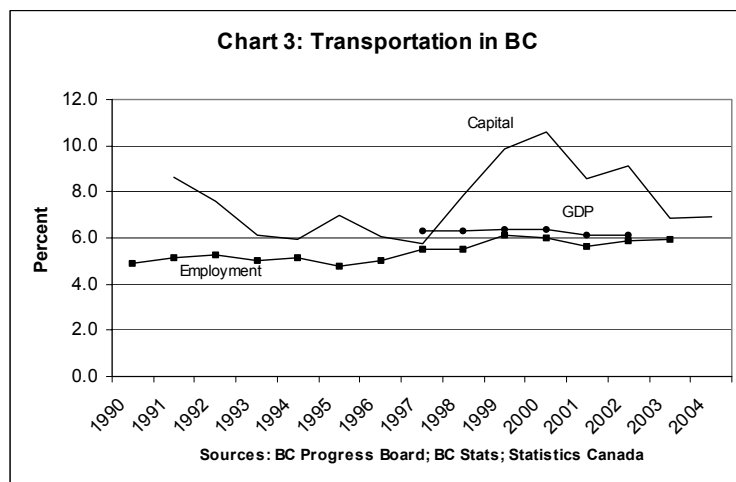


provincial and national GDP. **Chart 2** provides information on Canadian transportation industries and their contribution to GDP, total employment, and total investment for 1990 through 2004, subject to data availability.

Depending on the year, transportation represented between 4.7 percent and 7.7 percent of capital spending by all industries over the period 1991-2004 and, between 1992 and 2004, grew at an annual rate of 5.1 percent

compared with capital spending growth for all industries of 4.4 percent during the same period. Transportation industries (warehousing included) comprise 4.7 percent of 2003 Canadian employment (or 801,000 jobs), with transportation alone accounting for 3.5 percent (or 601,000 jobs). As a share of national GDP, transportation represented 4.6 percent of the Canadian total in 2002, and grew by 2.9 percent annually between 1990 and 2002 (in real terms), or the same pace as total GDP over the period.

In British Columbia, transportation industries are relatively more important than they are nationally. **Chart 3** provides the same information for British Columbia's transportation industries that **Chart 2** provides at the national level. Depending on the year, BC transportation industries represented between 5.8 percent and 10.6 percent of capital spending by all industries over the 1990-2004 period and have grown at an annual compound rate of 2.5 percent compared with capital spending growth for all BC industries of 3.3 percent over the same period. Transportation industries (including warehousing) comprised 5.6 percent of employment in BC in 2003 (or 114,000 jobs), while transportation alone accounted for 4.5 percent (or 92,000 jobs). Turning to contributions to BC GDP, transportation represented 6.1 percent of BC's GDP in 2002, growing at 1.9 percent annually between 1990 and 2002 (on average, in real terms), versus 2.9 percent for total BC GDP over the period. **Table 1** shows the significant



growth in transportation industries. **Table 1** shows the significant

growth in Transportation as measured in real GDP, employment and capital expenditures over the decade of the 1990s and the early part of the current decade.

Table 1: Transportation Summary					
	1990	1995	2000	2002	Period Growth
Canada, GDP (basic prices)					
GDP (\$1997 million)	707,587	772,760	946,286	992,814	40.3
GDP per capita (\$1997)	25,547	26,372	30,835	31,657	23.9
Transportation* (\$1997 million)	32,962	37,528	45,729	45,867	39.2
Transportation* per capita (\$1997)	1,190	1,281	1,490	1,463	22.9
Transportation* (% of GDP)	4.7	4.9	4.8	4.6	(0.0)
	1990	1995	2000	2003	Period Growth
Canada, employment (000s)					
All Industries	14,241	14,750	15,999	17,047	19.7
Transportation & Warehousing	688	704	812	801	16.4
Transportation	504	506	610	601	19.1
Transportation (% employment)	3.5	3.4	3.8	3.5	(0.0)
	1991	1995	2000	2004	Period Growth
Canada, capital spending					
All Industries (\$millions)	129,271	138,555	185,957	223,819	73.1
Transportation*	7,385	6,593	10,539	12,198	65.2
Transportation* (% spending)	5.7	4.8	5.7	5.4	(0.3)
	1990	1997	2000	2002	Period Growth
BC, GDP (basic prices)					
GDP (\$1997 million)	83,920	99,129	114,229	118,240	40.9
GDP per capita (\$1997)	25,501	26,245	28,280	28,734	12.7
Transportation* (\$1997 million)	n/a	6,590	7,268	7,239	9.9
Transportation* per capita (\$1997)	n/a	1,669	1,799	1,759	5.4
Transportation* (% of GDP)	n/a	6.6	6.4	6.1	(0.5)
	1990	1995	2000	2003	Period Growth
BC, employment (000s)					
All Industries	1,555	1,792	1,949	2,023	30.1
Transportation & Warehousing	91	97	114	114	25.9
Transportation	76	75	94	92	21.4
Transportation (% employment)	4.9	4.2	4.8	4.5	(0.3)
	1991	1995	2000	2004	Period Growth
BC, capital spending					
All Industries (\$millions)	17,370	20,591	20,847	25,723	48.1
Transportation*	1,496	1,435	2,212	1,782	19.2
Transportation* (% spending)	8.6	7.0	10.6	6.9	(1.7)
Sources: BC Stats; Statistics Canada					
Notes: * Transportation and Warehousing					

Transportation – Defining BC from Start to Present

The economic development of British Columbia from Confederation with Canada in 1871 until the present parallels the growth in the size and scope of the provincial transportation network. For background, a brief evolution is provided in **Table 2** below, by mode and key event.

Table 2: A Brief Evolution of BC Transportation	
<i>Mode</i>	<i>Event</i>
Railroads	<ul style="list-style-type: none"> ● Promise to build trans-continental railroad to link BC to the rest of Canada by 1881. ● 1886 – Arrival of CP Rail in Vancouver. ● 1914 – Grand Trunk Pacific (CNR) adds second link across Canada via Prince Rupert. ● 1914 – The Pacific Great Eastern Railway (PGE) links North Vancouver and Whytecliffe. ● 1918 – Grand Trunk Pacific (CNR) reaches Vancouver. ● 1918 – Canadian Northern Railway takeover by CN. ● 1952 – PGE Railway BC Rail) links North Vancouver and Prince George. ● 1980’s – Mainline capacity expansion by CP and CN ● 2000 -- Completion of BCR CN partnership deal
Marine	<ul style="list-style-type: none"> ● Riverboats operating on the Fraser and Thompson Rivers into the early 20th century tied deep-sea ports in Burrard Inlet and New Westminster to Fraser Valley and interior communities. ● Marine transportation important in Victoria during gold rushes of 1850s and 1860s ● Deep ice-free ports of GVRD and Prince Rupert provide exceptional access to Asia. Prince Rupert (2004) is beginning to reach the potential provided by its location, one day closer to Asia than Vancouver and 3 days closer than Los Angeles. ● Development of Roberts Bank Coal (and later Container) Port ● BC Ferries - coastal transportation greatly expanded between 1960 and 1980.
Roads	<ul style="list-style-type: none"> ● BC’s first road was a rough wagon trail from Harrison Lake to Yale, which was extended between 1862 and 1865 to Barkerville for the gold rush. ● 1871 to 1900 – 9,000 km of roads built in BC. ● 1952 to 1968 – Modern highway system takes shape with creation of the George Massey Tunnel and Highway 99 to the US border, Port Mann and Second Narrows Bridges, Trans-Canada Highway from Vancouver to Hope to Alberta, and upgrading of Highways 3, 5, 97 and 16. ● 1980’s and 1990’s – Coquihalla and Vancouver Island four lane highways completed.
Aviation	<ul style="list-style-type: none"> ● 1910 – Flights from infield of Lulu Island racecourse. ● 1917 – “Flying boats” in Coal Harbour. ● 1931 – Present Vancouver airport site opens. ● 1941 – Federal government takes control of airport during war and funded a Boeing plant. ● 1942 – Canadian Pacific Airlines was founded. ● 1961 – City of Vancouver sells airport due to the lack of finance needed for improvements. ● 1992 – Federal government turns control of airport over to a independent Vancouver International Airport Authority to upgrade international terminal and runway. ● 1992 to 1999 – YVR ranked first by passengers for satisfaction among 14 leading North American airports; ranked in top 5 in global surveys of 65 leading global airports. ● 2001 – Canadian Airlines failure; purchase by Air Canada; loss of major Pacific Rim carrier.
Public Transportation	<ul style="list-style-type: none"> ● 1897 – BC Electric Railway (BCER) founded. ● 1910 – BCER’s 102 km interurban line runs from Vancouver to Chilliwack, Vancouver to Richmond, and a line in Victoria to Saanich Peninsula. ● 1920s – BCER adds buses to transit portfolio as roads were paved and improved. ● 1961 – Bennett government nationalizes BCER to create BC Hydro. ● 1973 – Transit operations split to create a new crown corporation, BC Transit. ● 1980’s -- Advent of skytrain in Greater Vancouver. ● 1998 – Provincial government creates Greater Vancouver Transportation Authority (GVTA). ● 2001 – Millennium Line Opens ● 2004 – RAV Line and Coquitlam Line Extension Approved

Two broad observations are worth noting in relation to British Columbia's transportation evolution. First, is the rapid growth in the *scale and complexity* of the provincial transportation system particularly within the last 50 years. Second, there is broad evidence of *public-private partnerships (or P3s)*. These arrangements are sometimes thought of as a radically new means to finance much needed transportation infrastructure across British Columbia. However, there is not much new or particularly radical in the concept. P3s have been well employed in virtually all transport modes from the province's inception. The CPR and CNR both mixed public and private interests where the public granted land and rail rights in exchange for the private sector building and running railroads and taking operating risks.

Many early roads and bridges were constructed by private proponents who, in turn, were also given the right to charge tolls in exchange as originally was the case with the Lions Gate Bridge. Ports today, despite their federal ownership, are in fact a complex combination of public and private partnerships with private operators leasing and improving federally-owned port facilities in return for the right to collect fees associated with loading and unloading ships. The Vancouver International Airport Authority (VIAA) is also a partnership between public and private interests with the airport leasing space to private interests who then undertake improvements and earn income from services provided, with a portion of retail income returning to VIAA and the federal government through lease arrangements with private sector tenants.

Summary of Key Observations:

- Transportation has defined BC and Canada and our need to overcome long distances and mountainous terrain.
- All modes of transportation – rail, marine, roads, air and public transit – have played critical roles in accessing the province's resources and shipping them to world markets.
- The scale, complexity and linkages among transport modes have increased greatly over time.
- Financing transportation improvements have – from BC's beginnings – often involved a mixture of public and private capital and investment.

III. PROSPECTS AND POTENTIAL: A REVIEW OF TRANSPORT-LINKED GROWTH OPPORTUNITIES IN BRITISH COLUMBIA

Transportation industries in British Columbia face significant investment and technological needs, along with enormous opportunities. They also require significant shifts in public policy if they are to reach their potential. Given the diversity, interconnectedness and scale of these needs and opportunities, making order of all the complexity is not a simple task. Accordingly, the discussion that follows is organized by transport mode. Within each mode, examples are provided of the challenges and opportunities facing communities across BC. Before addressing each mode, one issue transcends the entire topic: *security*.

Security: A Starting Point for Successful Gateway Transport Services

Security sits atop the global political agenda and security concerns suffuse international politics and economics. Demands for heightened security at borders pose significant threats to the growth of trade and the global economy. Achieving our potential as a gateway between the Asia Pacific and North America is also threatened by security concerns. If we are unable to ensure the security of our roads, rails, ports and airports at the highest standards, our viability as a gateway will fundamentally be at risk. And without the most advanced and secure roads, rails, ports and airports, security procedures in the US will surely limit the flow of goods and people passing through Canada to the United States. Other countries will also be loath to tranship goods through British Columbia without the most credible security assurances. Even our own producers and shippers may be wary unless assurances of safe, secure and efficient movement of their goods and people are real. Secure transport, is therefore, an absolute imperative. To the extent that security spending is really a subsidy for US customers and an imperative for Canadian trade with the US, the costs of security should largely be borne by the Government of Canada as noted later. The SMART border initiative is an excellent example of federal security leadership.

As a relatively isolated part of North America, British Columbia has a *significant opportunity* to provide strong security – a critical element of selling gateway transportation service potential to customers domestically and internationally. Prince Rupert is isolated and both its port and airport are situated on islands. Vancouver Port Authority (VPA) operates from the confines of the Burrard Inlet with only one entrance, while Roberts Bank is effectively an island with only one point of access and egress. Vancouver International Airport Authority (VIAA) also operates on an island.

To seize transportation-related opportunities, significant public and private investments are required as a country and as a province to ensure that British Columbia's gateways are regarded as the most secure, the most efficient, and the most sought after. First, investments in people who can manage, develop, and apply the most effective security technology available are required. Second, investments in cutting edge information and monitoring technology to make us the most secure gateways in North America are also necessary. Finally, and perhaps most importantly, investments in foreign policy capacity to craft and implement appropriate and effective responses to global economic and security events are critical.

Rail

Railroads are likely to be every bit as important in British Columbia's future as they were in the province's founding and past. The prospects are excellent for building a contemporary "land bridge" expanding BC's connectivity to the increasingly integrated North American and global markets. Some of the improvements needed to foster the growth of railroads and to enhance their ability to provide this land bridge follow.

First, existing *rail bridge capacity* across the Fraser River constrains the flow of rail traffic and is vulnerable to disruption should it be damaged. Another rail bridge or some form of co-

production is needed to ease the bottleneck and reduce the risk of damage and disruption to allow ports and inter-modal services to operate at peak capacity. Some form of agreement on co-production, or a joint investment, or public-private partnership could provide this infrastructure and improve capacity.

Second, in order for the Port of Prince Rupert to develop its potential as a container port, it will need capacity to handle **double stack** container trains. This will require increasing the height of rail tunnels to accommodate double-stacked container cars.

Third, the need for **additional rolling stock** is apparent. There is a shortage of railcars in Canada, especially container cars, which in turn constrains the ability of the “Gateway Ports” to handle peak demand and realize its gateway potential for the province. This has been a recurring periodic problem that must be solved if we are to be a competitive and efficient gateway. Somewhat akin to the rail bridge issue above, it is costly for railroads to own large stocks of rail cars, many of which are often empty or in the wrong part of Canada much of the time. This is perhaps another case where joint investment, a public-private partnership, or other form of innovative cooperative behaviour could finance an adequate supply of railcars.

Fourth, even with adequate railcar and bridge capacity, the Vancouver Gateway is ultimately limited by the capacity of rail tracks running through the Southern Rockies and the preponderance of single-tracks with only limited double tracking through the mountains. The need to expand rail capacity is pressing and will take a sizable investment given the difficult terrain through which **double-tracking** is required. In the short run, co-production can help ease congestion. Over the medium term, both senior orders of government – together with major railway companies – will likely have to make a significant investment to improve rail capacity in the “national interest”.

Finally, the railway industry operates within a highly competitive continental business environment. Efforts should be taken to ensure that prevailing **taxation and regulatory** schemes are brought into line with competitors operating in the United States, and to provide incentives for railways to improve rolling stock and network capacity.

Marine

Marine transportation is the primary cargo lifeline linking British Columbia and Canada to the world. BC has superb deep-sea ports with a number of prime attributes, these include: they are ice-free year round; they have the ability to handle the largest ships in service today and into the foreseeable future; they are technologically advanced; they are closer to Asia than any other mainland North American ports; they are connected to excellent North America-wide rail service; and, they have major scope for expansion.

Greater Vancouver has three separate port authorities: Vancouver; North Fraser; and Fraser Port. Potential economies of scale and scope in port operations and customer service are lost as a result. The Greater Vancouver Port Authority (VPA) could be reborn as an **integrated port** spanning all three current authorities, offering existing and potential customers significant

economies. A related idea is to consider integrating the three Vancouver area ports as a first step toward eventually merging all five federal BC ports into one ***Pacific Super Port*** comprising: Vancouver, North Fraser, Fraser Port; Nanaimo, and Prince Rupert Port Authorities. While this idea needs further consideration, creating a Pacific Super Port could help Canada become a more significant gateway between North America and Asia, and provide vital inter-modal connections and investments to link BC ports to the rest of Canada, and the West Coast and Midwest US.

The cruise ship industry is highly competitive. Recently, ***Vancouver*** has lost ground to Seattle as a port-of-call for US originating cruise passengers. Vancouver still has the edge in total passengers and ships, but Seattle poses a significant threat to this vital marine sector – a threat that should be dealt with seriously through concerted efforts by the VPA, Tourism Vancouver, and all orders of government. To succeed, BC must provide the best customs, immigration, transportation and tourism services possible, including making it attractive for ships to call on ports throughout the week, not just predominately on weekends as at present.

On Vancouver Island, ***Victoria*** is already a successful cruise ship and marine port, with capacity to increase its scale. Its location at the southern tip of Vancouver Island limits cargo potential, but more can be done to market the port to attract diverse cruise ship business, keeping in mind that some of Victoria's gain is Vancouver's loss. Unlike Victoria, ***Nanaimo*** occupies a central location on Vancouver Island and has the potential to attract additional cargo business especially in the forest products sector. It also has excellent potential as a ferry destination, already being home to four ferry routes: Horseshoe Bay – Departure Bay; Tsawwassen – Duke Point; Vancouver Harbour – Nanaimo Harbour; and Nanaimo Harbour – Gabriola Island. Nanaimo Harbour also is a bustling seaplane base with almost hourly flights between Vancouver Harbour and Nanaimo Harbour, and Vancouver International Airport. Additionally, the private Harbour Lynx passenger ferry serves Nanaimo and Vancouver harbours six times daily.

The area comprising ***Prince Rupert, Terrace-Kitimat and the Northwest Corridor*** from Prince George and Northern Alberta to the Pacific has considerable potential for marine port development and associated rail links. Moreover, if as some speculate (The Economist (2004)) there is continuing or increased global warming, then Hudson's Bay and perhaps even the North Slope of the Yukon and Nunavut might be suitable for summer marine service, with positive and negative impacts on existing ports. In any event, Prince Rupert, Terrace-Kitimat and the Northwest Corridor are well served by Canadian National, and it has significant capacity for expansion. Prince Rupert is the terminus of the Yellowhead Highway and a trucking gateway to Northern BC and Alberta as well. The private Kitimat port also holds promise to tranship products from Kitimat, Liquefied Natural Gas (LNG), and as an oil-gas pipeline terminus. Numerous potential transportation opportunities exist in Prince Rupert. An examination of these follows.

First, the integration of Prince Rupert Port into Pacific Port (discussed previously) is worth considering. It is important to unshackle Prince Rupert from the burden of federal Treasury Board financial regulation so that investment capital and decision-making capacity can be made locally. Functioning as an integral part of the Pacific Port complex of ports for ship and train

scheduling would help links with Coast Guard, security, logistics, and inter-modal hardware and software.

Second, there is great potential at Prince Rupert going forward for an oil-gas-coal terminal. It is estimated that some 60 trillion cubic feet (tcf) of natural gas exist in offshore basins stretching from the Queen Charlottes south to central Vancouver Island. Another 60 (tcf) of natural gas are estimated to reside in west-central and north-west onshore in the Nechako and Bowser basins in the Chilcotin and Stikine. Prince Rupert is a natural terminus of gas pipelines from these basins, from Alberta, and from North-East BC. An oil pipeline is also being explored from Alberta to Prince Rupert, further enhancing Prince Rupert's prospects as an energy terminus. A liquefied natural gas terminus to ship inexpensive foreign LNG from Prince Rupert to points elsewhere in Canada and the US is also a possibility. Coal from North-Eastern BC and from Alberta can also be readily shipped through Prince Rupert reinforcing its potential as an energy port.

Third, Prince Rupert's Ridley Island is home to an efficient grain port. There is scope to expand this terminal considerably and to handle other Alberta and central interior agricultural products, an outcome much sought by Alberta and Northwest BC.

Fourth, BC interior and coastal forests produce vast amounts of fibre. Prince Rupert has great scope to ship BC as well as Alberta and Saskatchewan forest production.

Fifth, attention has been paid recently to the development of a major container facility in Prince Rupert (Whiteley, 2004). Given the port is a day or more closer to Asia than any other major North American port, significant savings can accrue to ship owners using Prince Rupert to offload cargo given the rail connections on CNR across Canada into the US Midwest and Mississippi Valley. Containers offloaded in Prince Rupert can reach Chicago before container ships land in LA-Long Beach, providing an enormous time saving for US Midwest-bound goods. Similarly, US Midwest originating goods and containers can be shipped to Asia via CNR tracks to Prince Rupert.

Sixth, the local presence of Methanex, Alcan and EuroCan create major bulk demand for Kitimat, which could be augmented with other commodities such as coal and sulphur should circumstances warrant.

Finally, Prince Rupert lies on Alaska cruise ship routes, and has significant capacity to cater to Alaska cruise ship passengers as it recently began doing, adding to the local and regional tourism industry and demand for maritime services.

Over the medium term, addressing the current lack of "backhaul" cargo from either regional British Columbia, Canadian or the mid-west United States will have to be addressed. In other words, while demand for port services at Prince Rupert from Asian container shipping companies may grow, business and government should examine viable sources of cargo for transshipment from a variety of North American sources. In this connection, the Government of British Columbia is to be commended for recent efforts taken to examine such questions within its "Ports Strategy".

The emerging concept of an *Intermodal (or Inland) Container Transfer Facility* is worthy of consideration given the paucity of land available near some tidewater ports, particularly within the Greater Vancouver Regional District. In some jurisdictions there is a trend in inter-modal logistics toward inland staging and sorting yards for truck and container cargo. The Port Authority of New York – New Jersey, for example, currently operates such an inland port terminal in upstate New York. The theory here is portside lands are limited and valuable, so why not undertake extensive sorting and de-stuffing operations elsewhere. An inland inter-modal terminal for example, in the Fraser Valley could open up the possibility of moving containers and break bulk cargos via Vancouver area ports, reducing congestion, and improving service and allowing the ports to effectively expand on relatively abundant and less expensive land in much less congested areas. Over time as Prince Rupert builds capacity, an inland container transfer facility could be considered for somewhere along the Northwest Corridor and/or Southern Interior, perhaps in Prince George or Kamloops.

Parenthetically, all orders of government could consider holding urban port lands as an Urban Port Land Reserve – somewhat akin to the BC Agricultural Land Reserve – to protect them for future generations. This would not only save scarce land at Vancouver area ports, but also help mitigate rail, road and inter-modal capacity constraints in the Lower Mainland, keeping in mind some distortion of urban land markets are likely to occur, and should be monitored accordingly.

Roads

British Columbia's vast expanses require safe, modern roads to link its dispersed communities. An earlier study commissioned by the BC Progress Board found a systemic under-investment in the province's roads during the 1980s and 1990s, as funding for critical highway infrastructure declined from \$181 per capita in 1981 to \$110 per capita in 2001, despite growing demand.

In the last couple of years, the province has committed significant new monies to transportation, but continuous investments will be required to maintain and improve road safety, and to lessen the time required to move people and goods. Though there are many examples of road deficiencies in the province, some of the most pressing ones are detailed in **Table 3**.

As British Columbia approaches the second half of the current decade, attention should be given to identifying and addressing areas where road improvements can have transformational affects. An important strategic consideration should be establishing a workable timeline for improving – to the greatest extent possible – segments of east-west and north-south highways to four lanes (e.g. Portions of Highway 1 and 5, Vancouver to the Alberta border, Highway 97 from Prince George to the US border, and Highway 3, Hope to the BC-Alberta border). These measures would “shrink the distance” between British Columbia “growth poles” and greatly enhance connectivity to external markets. Ultimately, BC should benchmark its highway systems against the visionary US Interstate Highway Network and those of similar-sized jurisdictions outside North America like Singapore and Denmark to yield useful measures of highway functionality.

Table 3: Some Possible BC Road Transportation Improvements		
<i>Road / Area Served</i>	<i>Current Problems</i>	<i>Improvements Required</i>
Transportation Demand Management for all major roads, bridges and tunnels	<ul style="list-style-type: none"> • Congestion and excess demand threaten efficient use of roads, bridges and tunnels. Road pricing, flow metering and other transportation demand management tools can help reduce need for expensive additions to the road network 	<ul style="list-style-type: none"> • Road Pricing Schemes for all major roads, bridges and tunnels
Highway 1 – TransCanada Highway	<ul style="list-style-type: none"> • Portions in the Rocky Mountains are dangerous and slow. • Inadequate capacity and road conditions through the Shuswap, Cariboo and Fraser Canyon. 	<ul style="list-style-type: none"> • Roads need widening, passing lanes, shallower curves, grade separation and surface repair.
Highway 16 – Yellowhead Highway	<ul style="list-style-type: none"> • The Prince George – Prince Rupert portion needs repair; rapid growth in the oil and gas sector in Northeast BC and demand for major resource shipments from Alberta to Prince Rupert have increased use of highway. 	<ul style="list-style-type: none"> • Need to improve safety, speed and capacity.
Northeast BC	<ul style="list-style-type: none"> • Region is not well served with paved roads required to move people and equipment needed due to the rapid growth of natural gas finds. 	<ul style="list-style-type: none"> • Upgrade unpaved roads.
Highway 97 – Okanagan Area	<ul style="list-style-type: none"> • Internal and external highway linkages required to safely move the growing resident population and peak summer tourists. 	<ul style="list-style-type: none"> • More passing lanes and limited access divided sections of Highway 97 are required.
Trans-Canada Highway 1 and Highway 5 – Kamloops area	<ul style="list-style-type: none"> • Growth in Sun Peaks and other four seasons tourism is placing heavier demands on both highways. 	<ul style="list-style-type: none"> • Both highways need improving by creating more passing lanes, limited access divided roadway, and considerable upgrading.
Highways 1 and 19 – Southeast Vancouver Island	<ul style="list-style-type: none"> • Nanaimo’s airport, harbour floatplanes, the Harbour Lynx ferry, massive retail opportunities, and ferry terminals place large demands on the highway system. 	<ul style="list-style-type: none"> • Need anticipate and keep pace with further growth.
Trans-Canada Highway 1 and Highway 99 – Greater Vancouver and the Fraser Valley	<ul style="list-style-type: none"> • Rapid suburban development has placed huge strains on the highway system. • Greater urgency for improvements given the boom in container traffic, the expansion of several major port facilities, Vancouver International Airport, as well as the looming 2010 Olympics. 	<ul style="list-style-type: none"> • Significant improvements in the Lower Mainland road system required. • North and South Fraser Perimeter roads. • Twin Port Mann bridge • Third crossing of Fraser River • Add capacity to Massey Tunnel

Air Transportation

While all transportation modes are critical to the success of the provincial economy, changes to national airline policy could be especially transformative and far reaching for British Columbia and Western Canada from an economic development and market connectivity point of view. Our examination of aviation begins with the Vancouver International Airport Authority (VIAA)*. The dramatic growth of VIAA and its strategic location between Europe and Asia

* Throughout this discussion VIAA and YVR are used somewhat interchangeably. Of course, the former refers to the operating entity charged with building and maintaining airport infrastructure and business relationships, while

with connections to destinations throughout North America bodes well for future growth. But to take advantage of these opportunities, VIAA must continue to be robust, competitive, and flexible.

Federal policy should change fundamentally to align the national responsibilities of VIAA with national policies that foster the financial and operating strength of VIAA. For instance, the ability of VIAA to continue to exceed its operational and economic development objectives demands more than just devolution to present local control with strong governance structures and processes as at present. It also requires creative support and vision from the Government of Canada and an appreciation of the national significance of VIAA's role. Providing VIAA with the necessary flexibility and operating strength is in the national interest to help achieve trade and investment diversification, and greater overall competitiveness. In this connection, five specific examples of needed federal policy shifts follow. Taken together, these will enable YVR to play its powerful core role in realizing its potential.

First, Transport Canada should grant ***Fifth Freedom Rights*** to airlines and airline alliances at the recommendation of VIAA to fully develop its competitive position and potential as the major North American trans-Pacific hub. Ideally, granting such rights at YVR could be delegated directly to VIAA with final review and approval by Foreign Affairs Canada under specified conditions. These rights should only be granted where they are clearly in the national interest and solidify YVR's position and the national airport system

When Air Canada purchased Canadian Airlines International, Canada lost a valuable global strategic asset: membership in the *oneWorld*© Alliance that included American Airlines, British Airways and Cathay Pacific Airlines, among others. The *oneWorld*© Alliance sought to use Vancouver as its principal trans-Pacific hub. This would have seen passengers from American Airlines, British Airways, Cathay Pacific and others use Vancouver as an assembly point for travelers going to and from Asia. The benefit to Vancouver, British Columbia and Canada would have been significant as American Airlines is the largest US carrier. Unfortunately, Air Canada is a member of *Star*© Alliance, which uses San Francisco as its trans-Pacific hub. However, the Government of Canada has the power to grant "Fifth Freedom Rights" and *cabotage* continuation rights to American Airlines and other *oneWorld*© Alliance partners to use VIAA as their major trans-Pacific hub. To date, it has not done so.

the latter refers to the three letter airport identifier which is now commonly used as a short form for Vancouver International Airport.

Box 1:**Fifth and Sixth Freedom Rights, and Cabotage**

Fifth Freedom rights enable airlines to carry passengers from a home country to another intermediate country (A), and then fly on to third country (B) with the right to pick up passengers in the intermediate country. This freedom is divided into two categories: Intermediate Fifth Freedom Type which is the right to carry from the third country to a second country, and Beyond Fifth Freedom Type which is the right to carry from a second country to a third country. **Sixth Freedom** refers to the right to carry passengers between two countries (A and B) through an airport in the home country. With the “hubbing” function of most air transport networks, this freedom has become more common, notably in Europe (London, Amsterdam). **Cabotage**, on the other hand, also referred to as "ninth freedom rights" or "open-skies" privileges, involves the right of a home country to move passengers within another country (A).

Reciprocity has usually been considered by federal officials as the *quid pro quo* for acceptance of fifth and sixth freedom and cabotage rights. However, Canada does not have an airline industry that can take advantage of new landing rights in other countries beyond the US and Mexico and our industry will not be materially harmed by giving away Fifth and Sixth Freedom and Cabotage rights. In a 1988 air treaty with Singapore, Air Canada obtained the right to fly around the world through Seoul, Singapore, Bombay, London and Toronto, yet it never exercised the rights. A similar story exists today. The creation of a trans-Pacific air gateway through YVR for passengers and freight would bring significant business to Canada in the process. Reciprocity should not be pushed if it would thereby halt access to Vancouver, Calgary, Toronto, Ottawa, Montreal and Halifax for other airlines to the benefit of Canada and its transportation system.

Second, analogous ***cargo continuation rights*** are also vital so that North American operators can use YVR as a cargo and sorting hub. Ideally, delegating to VIAA the right to grant such rights with Transport Canada having a 30 day veto would greatly enhance YVR as a cargo hub, reinforce Pacific Port, and help realize the overall goal of a more diversified trade and investment strategy. Vancouver and Canada are not large generators of air cargo. However, with its location on a Great Circle Route from the US West Coast to Asia, Vancouver has significant location advantages as a hub for North American inbound and outbound air cargo to and from Asia. When combined with recent changes in Canadian legislation on international duty free zones, this could prove to be another highly significant gain for Canada through VIAA.

Third, Transport Canada should truly decentralise its mandate to provide for ***regional differentiation*** and global competitiveness. Transport Canada currently charges excessively high rents to VIAA for the YVR site. The rent structure inhibits VIAA’s ability to develop its full potential, and thus restricts Canada’s ability to enjoy the benefits of a fully devolved, flexible and competitive West Coast Asia Pacific gateway airport. The federal government must develop a more reasonable and appropriate rent structure, one that acts as an incentive for VIAA to accelerate its efforts and advance the airport’s competitive position.

Box 2:
Open Skies – Myth or Reality?

Contrary to the 1995 US-Canada agreement of the same name, Canada does not have *open skies* agreements. In fact, our “open skies” link with the US is quite restrictive. Apart from freer access to the US, real open skies links with Japan, China, Hong Kong, and Singapore in Asia should be pursued. The European Union (EU) is also a particularly powerful opportunity in light of the recent failure of the US and the EU to establish true open skies (i.e., Fifth and Sixth Freedom and cargo continuation rights).

At present, Singapore Airlines, for example, operates on an annual permit to fly to Canada three times a week via Seoul. Singapore has expressed major interest in flying a daily non-stop to Vancouver plus another three or so flights through Seoul. The negotiations are being stalled as Foreign Affairs has delegated them to Air Canada to complete, hardly in the national interest. Concluding true open skies agreements with major Asian hubs such as China (Beijing, Dalian, Guangdong, Hong Kong, and Shanghai), Japan (Kansei, Nagoya, and Tokyo), Korea (Seoul and Pusan), Malaysia (Kuala Lumpur), Singapore, Taiwan (Taipei) and Thailand (Bangkok and possibly Phuket or Chiang Mai) would create in Vancouver a massive Asia Pacific – North America gateway. Open skies agreements should be concluded, in general, without the requirement for reciprocity. The Canadian airline industry has little capacity to serve these and other routes between Canada and these cities, let alone other hubs in these countries that might arise in the future. Why ask for reciprocity of Fifth and Sixth Freedom Rights if Canadian carriers cannot exercise these rights? Is it not vastly more important to grant these rights, enhance the viability and importance of YVR and other Canadian hubs, and encourage maximum traffic through Vancouver, Calgary, Toronto, and possibly Ottawa and Montreal? Such non-reciprocal open-skies agreements would help build Canada’s global gateway brand and would add enormously to our internal transportation and tourist sectors. In the medium term, they also open up potential for Canadian carriers to take up rights in other countries. The recent attention paid by Federal Transport Minister LaPierre augurs well for change here in the near future.

More generally, VIAA has won numerous international awards for design and service. Despite, and in some cases because of its successes, YVR faces major challenges going forward. To begin with, it needs to expand the international terminal by adding nine planned new gates. VIAA also needs to continue to maintain and upgrade the domestic terminal, parking facilities and retail services, where it is an acknowledged global leader. These and related infrastructure improvements such as the RAV line appear to be on target, well financed and should present no barrier to future success. But – beyond expansion – VIAA is in need of a new policy environment that can help it achieve its potential.

Fourth, China-related opportunities are being missed. The People’s Republic of China has designated some 40 approved *tourist destinations*, and Canada is not one of them. Chinese citizens *en route* to the US are also required to have difficult-to-obtain Canadian visas even if they are not stopping here. It is hard to build a trans-Pacific hub with these visa regulations. More generally, border security with the US is an issue that hinders our potential. A more proactive and flexible stance by Citizenship and Immigration Canada would help considerably with efforts to garner more US outbound and inbound passengers for YVR. The key therefore, is allowing real open skies access to and from Canada while coordinating immigration, customs and other federal agencies to make YVR a welcoming and attractive global hub. The critical issue is providing for increasing flows of passengers and freight that are processed quickly and efficiently, yet are seen as secure and enhancing US and global security. Schipol Airport in Amsterdam and Changi Airport in Singapore provide strong models where open skies, ease of transit and security merge to make both among the most attractive and globally competitive.

Finally, VIAA requires greater *governance flexibility*. For example, VIAA incorporated a respected and highly successful subsidiary, InterVistas Services (now an independent company), that undertakes economic and transportation consulting and airport management around the world. This is in keeping with the original letters patent when YVR was devolved to the VIAA in 1992 wherein VIAA has two functions: to run a safe and efficient airport; and, to add to the economic well-being of the province. However, proposed legislation for airports seeks to place significant restrictions on YVR operations and governance to prevent further subsidiaries from being developed. It seems peculiar given the enormous positive impact, success and track record of VIAA that restrictions are being contemplated.

Table 4: Largest BC Regional Hubs/National Airports	
<i>Location</i>	<i>Overview</i>
Victoria	<ul style="list-style-type: none"> • Second busiest airport in the province handling over 916,000 passengers in 2002 or 5.4% of the passenger traffic. • Recently, greater direct access to airports across Canada is allowing Victoria residents and visitors to by-pass Vancouver. • Open skies with the US will build air traffic to Victoria and Vancouver Island and should be vigorously pursued.
Kelowna	<ul style="list-style-type: none"> • BC's third largest airport with 782,000 passengers in 2002 or 4.6% of the provincial total. • Rapid growth in technology, agriculture, four seasons tourism sector and the recent announcement of UBC Okanagan will place additional strains and opportunities, on the Kelowna airport
Prince George	<ul style="list-style-type: none"> • Fourth largest airport in BC with 316,000 passengers in 2002 or 1.9% of the provincial total. • Its central location in the province provides it with a large customer base in the future as consolidation evolves in Smithers, Quesnel and Fort St. John.
*Abbotsford	<ul style="list-style-type: none"> • Enormous growth in the Fraser Valley increases the attractiveness of the Abbotsford Airport. • Abbotsford's accessibility is heightened by growing congestion on the Trans-Canada Highway and Highway 10 and the absence a direct link from Vancouver Airport to these areas.

* Not designated by Transport Canada as a National Airport.

Turning to *Regional Airports*, British Columbia has benefited from a diverse set of local, regional and international airports. Nearly three dozen airports provide regularly scheduled service to their communities. However, with the consolidation and differentiation of airlines there is growing pressure on regional airports to consolidate too. With the devolution of BC airports to local authorities, starting with YVR in 1992, there have been significant successes as well as difficulties. Some smaller airports (i.e., Quesnel and Williams Lake) are finding it difficult to meet growing security and safety requirements in the absence of significant federal support. Moreover, YVR, which could be in a position to help stabilize and even manage regional feeder airports, is hampered because a considerable portion of its revenue goes to the federal government in the form of rent payments. The federal government should put more back directly or through arrangements with YVR and its regional feeder system in the form of lower YVR rental fees. The current situation is adding to the economic and access difficulties being faced by remote and dispersed urban centres. A more balanced revenue approach by Transport

Canada could be of considerable assistance and is needed to restore greater equity of treatment for YVR when compared with other major airports in the National Airport System (NAS). The current rental agreement is not only disadvantaging YVR but also BC's regional airports as well because it hampers YVR's ability to work with these airports to strengthen them and build a suitable feeder system for passenger and cargo traffic.

Table 4 (previous page) lists regional BC airports with National Airport status or, in the case of Abbotsford, significant passenger growth to warrant this designation. Throughout the province there are over 150 land and water-based airports and heliports. Fully 56 of these have formal three-letter airport identifier codes (like YVR), with two dozen having regular scheduled passenger service.

Some local and *regional airports* need to be expanded (perhaps Comox, Kamloops, Kelowna and Prince George), while others need to be maintained at their present size (perhaps Williams Lake and Castlegar). Others still, need to be consolidated into a single, larger, more effective regional airport (perhaps Fort St. John – Dawson Creek; Prince Rupert – Terrace – Smithers). Some airports may need to be downsized or even closed over time and their residents served by more viable and larger – if more distant – regional airports as noted in **Table 5**.

Regional airports in BC face unique challenges not faced by the four National Airport System (NAS) airports just discussed: Vancouver; Victoria; Kelowna; and Prince George. First, most have been handed over to local municipal or regional operating bodies for \$1.00, without federally-funded fire services. The cost of fire protection has increased with recently prescribed standards, and local airports must foot the bill with no or diminishing subsidies from the federal government. Second, they face a rising cost base due to a variety of federal taxes and regulations. Levies such as the airport security tax add significantly to the cost of short haul flights on which local and regional airports exist. For example, WestJet estimated recently that on one of its flights between Vancouver and Edmonton, 48% of the ticket cost was tax. Rising fuel costs further exacerbate the economics of smaller airports. Moreover, NAV Canada charges have risen 6.9 percent to cover the shortfall caused by Air Canada's bankruptcy protection, adding further to the fixed costs of short haul flights. NAV Canada thus reinforces and worsens economic and airline cycles, a result of its non-profit status and its need to return surpluses to the Government of Canada. Allowing the accumulation of surpluses by NAV Canada and non-profit airports would allow a smoothing of fees and mitigate this current procyclical and negative pricing behaviour. Third, with the arrival of WestJet in a number of secondary airports (such as Comox), the viability of adjacent airports is questioned as passengers will often drive extra distances to get better service.

As a result of these challenges, local and regional airports outside the National Airport System (NAS) must become much more strategic and cooperative. In **Table 5**, we look at a number of local airport regions and suggest consolidation and/or upgrades that may be appropriate for consideration.

Table 5: Key Regional Airports	
<i>Location</i>	<i>Overview</i>
Nanaimo	<ul style="list-style-type: none"> Nanaimo has two significant airports: Cassidy Airport in Ladysmith and Nanaimo Harbour. Nanaimo Harbour is active with commuter service to Vancouver Harbour and Vancouver Airport offered by Harbour Air and Baxter Air. Forthcoming Nanimo Convention Centre should add demand for Nanaimo Harbour flights while booming resort, residential and retirement community growth should build traffic at Cassidy. Both airports will need to add capacity in the medium term.
Comox - Campbell River	<ul style="list-style-type: none"> Both Courtenay-Comox and Campbell River have land-based airports. Comox should likely emerge as the regional airport for north central Vancouver Island due to its recent upgrade, its military runway, and its median location between Qualicum Beach and Campbell River. Campbell River is better suited to charter or limited scheduled airline service.
Penticton – Kelowna – Vernon	<ul style="list-style-type: none"> Vernon is a small airport 50 km north of Kelowna Airport. Penticton is sufficiently far from Kelowna making an airport viable, particularly when adding the demand from the rapidly growing Oliver and Osoyoos areas. Kelowna -- major capacity should be added for trans-Canadian and North American flight and airside infrastructure.
Kamloops	<ul style="list-style-type: none"> Benefits from its four season tourist resources, its location at the intersection of the Trans-Canada Highway and Highway 5, as well as being serviced by both Canadian railroads. Also Kamloops will soon have its own university. The Kamloops Airport has considerable potential and will need resources.
Quesnel-Williams Lake - 108 Mile House	<ul style="list-style-type: none"> Quesnel and Williams Lake maintain modest airports while 108 Mile House has a paved landing facility. Williams Lake will likely emerge as the region’s air hub being almost equidistant between 108 Mile House and Quesnel.
Smithers – Terrace – Prince Rupert - Kitimat	<ul style="list-style-type: none"> North-western BC is relatively over-served by these airports. This region would likely benefit from having a larger and better served airport in well located Terrace than having three modest airports, no one of which can attract the frequency or quality of service this region needs.
Fort St. John – Dawson Creek	<ul style="list-style-type: none"> Fort St. John and Dawson Creek are only 70 km apart and both have scheduled service. The region cannot support two airports with quality service and one should be chosen as the region’s to get appropriate service level
Castlegar	<ul style="list-style-type: none"> Castlegar, despite its operating difficulties in a narrow valley, serves the West Kootenay region admirably only 40 km from Nelson and 26 km from Trail. Provides vital service that will continue with planned and deserved upgrades.
Cranbrook	<ul style="list-style-type: none"> Cranbrook is currently receiving a significant and needed upgrade that will provide it with ample capacity to serve growing tourism in the region .

Urban Transportation

Transportation is the lifeblood of economic and social activity for the major urban economies: Greater Vancouver; the Capital Region; the Okanagan; Nanaimo; Prince George; and Kamloops. Getting urban transportation right will be as important to the overall health of the province as the major port, rail and road developments previously discussed. The service economies of these regions support and underpin the resource economy of the province, and provide increasing export wealth in their own right. Tourism, FIRE (finance, insurance and real estate), retail and wholesale trade, so-called “producer services” (accounting, business consulting, law, etc.) all

thrive in urban areas, but will only continue if it is easy to serve their customers and clients. Over half of British Columbia's population lives in urban centres.

Providing efficient and economic urban transportation is also vital to sustain and enhance quality of life, which is so important in attracting and retaining knowledge-workers who increasingly are the mainstay of our global economy. Urban transportation is also essential for moving goods – directly through better roads allowing for inter-modal connections between ports, airports and rail yards, and indirectly, because good public transportation reduces road congestion and makes the movement of goods more efficient. Finding viable service alternatives to single occupancy vehicles is vital especially in "peak load" times (rush hours). An effective dynamic road pricing mechanism can help manage demand, make transit more attractive, reduce environmental impacts, and generally improve the efficiency of the entire transportation system in British Columbia, but especially in the increasingly congested Lower Mainland, Greater Victoria, and Okanagan regions. These areas will also require public transportation infrastructure to cope with rapid urban growth and goods and services movement. A system of dynamic road pricing which discourages rush hour travel through peak hour tolls should be considered. Other cities – for example London, England and Singapore – have had success with such measures.

Continued reliance on single occupancy vehicles will only lead to further congestion and sprawl resulting in lower urban livability and reduced competitiveness as the population grows, as goods and people movement slows, and as costs increase. As our population increases, providing better public transportation and workable alternatives to private automobiles will be critically important. One recent innovation is the U-Pass introduced by the Greater Vancouver Transit Authority for lower mainland universities. The U-Pass is a "non-exclusive" pass that all university students attending UBC and SFU pay as part of their regular tuition fees. Because the pass is a mandatory part of student tuition assessments, some estimates suggest that as many as 2,500 fewer vehicles travel to the UBC campus during the average in-session day. Consideration could be given to a similar program for commuters and large employers as part of their annual tax assessments to encourage less single vehicle occupancy and to reward frequent transit users with significantly lower rates. To maximize the economic efficiency and impact of these transit measures, they should be combined with dynamic road pricing schemes across the major urban areas of BC, especially Greater Vancouver.

Commuter ferries hold significant promise as a means of urban transportation in Greater Vancouver, in the Capital Region and Nanaimo as well. The Bowen Island, Sunshine Coast and Gabriola ferries already service high commuter volumes, while the private-sector Harbour Lynx between Nanaimo and downtown Vancouver has successfully initiated service. Beyond existing commuter ferry transportation, there may be other prospects for using passenger ferries within Greater Vancouver as well. In an earlier era, intra-urban ferries from Dundarave to Jericho and from Lonsdale to downtown served Vancouver. Today, only two SeaBuses remain. The Greater Vancouver Transit Authority should continue to examine the viability of shifting a portion of commuter load onto ferries, particularly within the Burrard Inlet and from Bowen Island, while BC Ferries should support intercity passenger only ferry service between Greater Vancouver and the Sunshine Coast and Nanaimo.

Box 3:

A Few Successful Urban Ferry Systems in Other Jurisdictions

Sydney Harbour ferries and the CityCat in Brisbane are two Australian passenger ferry success stories, as are the commuter ferry services in Auckland, New Zealand. Brisbane and Auckland are only half the size of Vancouver, yet support superb and inexpensive commuter ferries on local rivers and across busy harbours. Hong Kong of course has the most successful set of cross-harbour commuter ferries, led by the famed Star Ferries, all of which are inexpensive and compete successfully against rail rapid transit and four vehicular tunnels.

Turning to *rail rapid transit*, the recent collaboration between the provincial and federal governments, the Greater Vancouver Transit Authority and the Vancouver International Airport Authority on the Richmond-Airport-Vancouver transit line has been approved at an estimated \$1.7 billion cost. As part of the agreement, the province has committed over \$170 million and the Greater Vancouver Transit Authority has committed \$600 million to help finance a rapid transit link from Coquitlam to the Millennium Line. Several other pieces of the rail rapid transit system should be established over the next decade. The Millennium Line should be extended from its terminus at Broadway and Commercial (soon to be moved to Vancouver Community College on Great Northern Way) to UBC, with intervening stops at Main Street and Second Avenue, and along Broadway with stations at Cambie, Oak, Granville, Arbutus, Alma and Blanca. UBC is the second largest generator of trips outside Vancouver's central business district and is growing rapidly with a forecast population of 28,000 residents by 2015, over 40,000 students and more than 15,000 faculty and staff employees.

Under the auspices of the Gateway Council, a core commercial rail network for Greater Vancouver is being identified. This will identify non-essential lines where there may be capacity for passenger rail services in subsequent years. A corresponding long-term (50 year) passenger rail plan should be developed to follow the regional ten-year plan approved to 2013 and to integrate with commercial rail plans. In particular, two significant rail opportunities exist as alternatives to automobile based trips in Greater Vancouver. First, the Golden Ears Bridge, which will be built by the Greater Vancouver Transportation Authority by 2008, will provide major new transit access from Langley City and Langley Township residents to the West Coast Express commuter rail services to the downtown Vancouver business district. (Expanding this line is extremely difficult at present because it runs on the same tracks as freight trains. One source estimated that for each additional West Coast Express train in the morning and afternoon, there is a possible loss of up to 20 percent of the daily rail capacity flowing to port terminals in Burrard Inlet). The second opportunity is the proposed tourist and commuter streetcar around the south side of False Creek to Quebec Street, continuing down Carrall or Abbott Street to Cordova Street, then down Cordova to Pender Street. This project has been proposed by the City of Vancouver and is being reviewed for its economic viability. It could add an interesting dimension to the Vancouver transit system as it will serve high density areas around False Creek, downtown, Coal Harbour and the West End. With the possible development of False Creek Flats west of Main Street, the Southeast False Creek lands, the eastern end of False Creek and the International Village area, this link may provide a valuable transit service to these growing areas.

A diverse array of *urban road improvement projects* has been touched on earlier for major regions of the province. In the Lower Mainland however, it is also important to reiterate that improvements are essential not simply for commuter traffic, but as importantly for goods and services movement and facilitating vital intermodal links that are currently limiting the capacity of Vancouver area ports to achieve their full potential as international gateways. Additional deployment of express buses and lanes in Greater Vancouver, Capital Region, and possibly Nanaimo, and the Central Okanagan around Kelowna could also help ease commuter flows and create additional capacity for goods movement. Worth exploring too, is the use of existing high occupancy vehicle (HOV) express lanes for trailer trucks at night and possibly at all times of the day to ease goods movement and to improve inter-modal logistics. Finally, tolling, peak pricing and other Traffic Demand Management (TDM) tools should be used to reduce congestion and improve traffic flows in combination with needed road improvements.

The Importance of Taking a Systems View of Urban Transportation

Moving beyond public transit to the transportation system as a whole requires us to view urban transportation, in all its various modes, as a complex integrated system. In this context, the interactions of various modes of urban travel are very complex and depend on demand by type of activity, time of day, and cost, among others. A systemic view recognizes alternative modes as substitutes or complements – for example, cars and transit. In other cases, there is little direct link among modes – despite using the same roads, cars and buses are not substitutes or complements for trucks moving goods or service workers like plumbers, mechanics and carpenters, although transit might be a substitute for moving small packages in a limited array of circumstances (e.g. multiple zone express commuter routes, downtown and between suburban exchanges) if the function is timely and properly organized.

Box 4: Why Take a Systems Approach? A Look at BART and Hong Kong

The failure to think of transportation as an interrelated multi-modal multi-purpose system leads to such costly investments as Bay Area Rapid Transit (BART) in San Francisco. Its US \$1.6 billion cost in 1962 was intended to reduce congestion and promote transit use. However, most of its trans-bay customers came from the existing viable trans-bay bus system, which saw revenues decrease with the advent of BART.

Contrast BART with Hong Kong where the century-old Star and Yau Ma Tei Ferries provide low-cost access in Hong Kong, while high-speed hydrofoils, hovercraft, and catamarans provide access to outlying islands or ports like Macau, Shenzhen and Guangzhou. Ground transport is also multi-modal, tightly tied to pedestrian and marine travel. Hong Kong's varied ground transport system includes: escalators, moving sidewalks and extensive pedestrian tunnels; mini-vans; local and express intra- and inter-urban buses; street cars; the world's highest capacity most efficient Mass Transit Railway (MTR) subway; the inter-urban and inter-regional Kowloon-Canton Railway (KCR); diverse tunnels and roads; and the world's largest container port; not to mention the stunning Chek Lap Kok Airport that is fully integrated into the Hong Kong transportation system by the Airport Express, a parallel MTR line, and a remarkable set of tunnels and bridges (which is still expanding) that provide efficient road access to the airport and the growing economic and residential areas adjacent to it.

Fundamentally, it is important to view travel modes as tactical elements of an integrated and effective urban transportation system, including: pedestrian sidewalks, escalators, conveyor

belts, overhead or underground connectors, bicycles, the system of streets, arterial roads and highways for private cars/car pools, trucks for moving goods locally, inter-regionally, and internationally, and express buses, minibuses and vans for moving people. Urban waterways also provide an excellent mode of travel, uniquely economical because there is no cost to build or maintain the rights-of-way (i.e. the waterways). Water provides for: intra-urban ferries like the existing SeaBus, inter-urban ferries such as BC Ferries, and, for interregional and international people and goods movement. Hong Kong is the best global example of a fully integrated multi-modal system with escalators, moving sidewalks, pedestrian walkways, subways, ferries, trams, buses, tunnels, freeways, etc.

The creation of the Greater Vancouver Transit Authority has certainly improved transportation planning in the lower mainland. However, the fragmented parts of our transportation system need to be integrated even further into a more effective multi-modal urban transportation planning and operating system, one that is also seen as part of a system of interconnected global supply chains. Better integration and coordination is needed among municipal engineering, planning, permit and parks departments, both within each municipality and among all municipalities. The Greater Vancouver Transit Authority should not be tied into the Greater Vancouver Regional District's (GVRD) fragmented municipal milieu, nor integrated into GVRD and municipal planning operations. While integration to date has led to the first funded ten-year service and infrastructure plan for the region, diverse challenges remain due to the GVRD's fragmented municipal interests.

Moving urban goods does not usually make headlines, yet is clearly critical to the daily functioning of Vancouver (and all cities). Urban living and working depends fundamentally on cost efficient delivery of goods and services that support cities. Greater Vancouver is a major hub in the global transportation system moving bulk goods and commodities by ships and trains, and manufactured goods and perishables by planes and trucks. Indeed, the transportation system we conceptualize and plan for must be defined to include ALL modes of travel, those that move people and those that move goods. The transportation system must be defined and designed to satisfy the needs of ALL customers and users, locally, nationally and globally.

A Word on Land Use and Inter-Modal Logistics

Expanding our scope further beyond the urban transportation system, we see that the *land use and transportation systems* are tightly linked in a complex urban transportation/land use system. Urban transport and land use are essentially just opposite sides of a single transport/land use coin: thinking of them separately is dysfunctional and potentially costly. Costly, high volume fixed rail systems require high density land uses to provide customers to cover their high costs. In short, land-use and transportation planning go hand-in-hand because each reinforces the success (or failure) of the other.

British Columbia must become better at integrating transportation investments with land use and urban planning. Agencies responsible for transportation investments must be given land use powers, especially in and around key transit stations and highway interchanges. BC can no

longer afford to spend billions of dollars (e.g. SkyTrain, Millennium Line and now RAV) without providing high intensity land uses in and around transit stations to simultaneously provide customers for transit investments while adding to land (and taxable) values. Similarly, scarce land resources in and around our marine ports need to be protected and held for the growing demands of our ports and intermodal transportation systems.

TransLink, and other regional transportation agencies that may arise, should have a full range of powers and proper governance to develop and implement systemic integrated transportation and land use policies. For TransLink this entails significant changes in its governance and powers. As a critical first step, the TransLink Board of Directors ought to be appointed by the province to avoid the current bias toward local – rather than regional – concerns that arise from Directors being appointed by, and thus responsible to, municipalities. Serious consideration should be given to a “hybrid” GVTA Board model incorporating broader stakeholder representation along the lines Vancouver International Airport Authority and the Vancouver Port Authority, with minority representation from elected officials. A companion requirement of a revised GVTA governance model should be appropriate land use, taxation and regulatory powers. Appropriate taxation, financing (including perhaps the ability to use methods such as tax-exempt bond financing), land use and governance authority would help facilitate the growth expected to occur in the region over the coming decades. At the very core of successfully planning and executing a region-wide transportation strategy in the “provincial and national interest”, is the need for GVTA to have a much more responsive governance model. **Box 5** provides further illustration of the importance of properly integrating transportation and land use planning.

Box 5:
Seattle-Hong Kong-Toronto: Case Studies in Land Use and Transportation Planning

The Seattle Freeway opened in 1968 with a 1980 design capacity and a much-touted flexible set of three reversible express lanes. By 1969, a year later, it was running at design capacity. While it was being built, developers were busy building housing and shopping centres so that when it opened there was enormous new demand from this land use development. Thus, freeway construction sometimes has the self-defeating characteristic of creating more traffic by inducing land development and greater demand for car travel. Alternately, the positive and reinforcing impacts of transportation investment can be used to help finance transportation improvements to realize the benefits of the investment at little or no cost to the public as with the Hong Kong Mass Transit Railway (MTR). MTR development was paid for by the increased land values resulting from the improved accessibility brought about by the MTR (e.g. there was a two way impact: MTR made density possible, and density paid for MTR). The positive impacts of MTR on housing opportunities are particularly noteworthy since MTR made possible the building of massive housing, office, retail and cultural complexes directly on top of or in very close proximity to MTR stations. MTR and its associated development policies illustrate the virtues of integrating transportation investment and land use. In the 1980s the Toronto Transit Commission realized its Yonge Street line was full with trains going to downtown Toronto every morning, but returning back virtually empty. The solution was for the TTC to realize the transportation problem could be solved by denser land use in suburban North York which, in turn, lured downtown commuters to its offices, balancing the traffic flow and making efficient use of TTC trains in both directions during rush hours.

On a final note, *intermodal infrastructure* development also provides the opportunity to build a strong inter-modal logistics industry in British Columbia. Intermodal and logistic activities thrive in gateway regions such as Rotterdam, Copenhagen-Malmö, Hong Kong, Singapore, Los

Angeles and Vancouver. These services are increasingly very sophisticated, making use of highly advanced electronics and communications equipment along with state-of-the-art mathematical and statistical modelling of intermodal links and requirements. They add high paying jobs and build nicely on the strong post secondary education base in British Columbia, and the provincial government's ongoing commitment to growing the province as a leading global technology centre. The continued development and encouragement of such expertise – given BC's Gateway location – is also in the “national interest”.

IV. REALIZING TRANSPORT-LINKED GROWTH OPPORTUNITIES IN BC: POLICY SUGGESTIONS

Significant policy changes should be considered by all orders of government and the private sector if British Columbia is to realize the vast potential of its transportation sector. Against the backdrop of the significant challenges and opportunities (presented in Chapter III) and mindful of “desired outcomes”, this paper now provides some insight into policy changes that could assist in BC reaching its potential in transportation, a critical factor in the economic livelihood of the province. We begin by establishing the “desired outcomes” that policy change should be considered against.

Policy Setting – Desired Outcomes

Maximizing the contribution of transportation as a critical factor for economic growth and development ought to be a guiding principle of transportation related public policy. Related to this are a number of objectives which in sum or in part should guide policy makers to the greatest extent possible. These objectives include:

- To facilitate the growth of transportation industries to take their rightful place in the BC and Canadian economies, not just as facilitators of growth but as global growth sectors in their own right.
- To raise the profile of transportation industries to help secure a prosperous future for BC and Canada by:
 - Providing secure and efficient access for BC and Canadian goods to the US and global marketplaces and transport and logistics systems; and,
 - Ensure economical and efficient inter-modal connectivity for BC, Canadian, US and global transportation customers.
- To identify responsibilities for each order of government to provide an integrated policy environment within which each transportation mode can flourish across BC and the rest of Canada.
- To respond effectively to meet growing environment concerns and objectives and the parallel need to preserve high quality living environments across British Columbia.

- To provide the required transportation infrastructure and land use to allow all modes of transport to function efficiently by themselves and in concert with linked modes.
- To foster international trade through improved transport.
- To foster private sector investment that sustains an efficient and competitive transport system.
- National, provincial and local transport and related tax and regulatory policy should be predicated on BC's and Canada's national and international transport roles and our broad economic and environmental goals.

Mindful of these objectives, the discussion in the preceding Chapters and the fact that all orders of government – federal, provincial and municipal – have a stake in building an effective and efficient transportation system, the following policy suggestions are organized by mode, concluding with inter-modal and logistics.

Rail Policy Suggestions

The primary issues facing railroads are high levels of taxation and a burdensome regulatory environment, and their impact on the overall competitiveness of the industry relative to other operators in the United States. In this connection:

- 1) Reduce tax and regulatory barriers** that inhibit CN and CP and short line railroads from being highly competitive and financially strong to make needed investments in track, tunnels, bridges and rolling stock.
 - a) Taxes in BC are \$9,000/mile v. \$900/mile in Alberta and should be reduced to encourage investment.
 - b) Property Tax relief to provide inter-modal equity with trucks especially.
 - c) Fuel tax relief to provide inter-modal equity and improve return on equity and incentives for investment.
 - d) Reduce regulatory requirements mandating special consideration for particular sectors at uneconomic rates. Such burdens impede key railroad investment in track, containers, and cars and thus inhibit removal of bottlenecks that currently restrict rail capacity in BC.
 - e) Consider giving tax credits or accelerated write-offs of investments to double-track and/or double stack rail lines so that CN and CP can add capacity, improve efficiency for US inbound and outbound shippers, and overcome bottlenecks across BC.
 - f) Running rights are a contentious and important issue with the railroads, yet are important to resolve creatively so that railroads can proceed with upgrades and investment in track, tunnels and bridges. Creative resolution and economic pricing of running rights could allow others, such as shippers, to co-invest in engines, rolling stock and technology to improve operating efficiency, but these must be done carefully since imposing running rights on railroads can lead to disinvestment, the reverse of the needed outcome.
 - g) Recent CN/CP co-production agreements serve as valuable models for broad cooperation.

- 2) There are a number of important **short line railroads**, particularly those linking Alberta-BC and select ports such as DeltaPort. While small in scale, these are critical and should be included in any future reforms and innovations in railroad policy.

Marine Policy Suggestions

Marine transportation issues include the need to address: high taxes discouraging investment; the need for long-term port planning; the need for better rail and road connectivity to serve the ports so they can realize their potential; the need to view ports as parts of an integrated global supply chain; the need to ensure access to capital markets; the need to preserve port and adjacent lands for transportation use; the need to compete with US ports with much more favourable tax treatment and capital market access and costs; and, the need to integrate port and intermodal service with municipal land use (and taxes). In this connection:

3) Consider creating a Pacific Port:

- a) **Pacific Port** could consolidate some or all of the five existing BC Port Authorities;
- b) It should have an **independent board of directors** chosen for their expertise, accountable annually to its diverse stakeholders.
- c) It should have the power to **borrow money** from financial institutions or capital markets.
- d) **Bottlenecks** are limiting the growth of the Vancouver Port Authority. The North and South Fraser perimeter roads, the Fraser River rail bridges should be given priority along with creative combinations of government and user-pay P3 funding.
- e) Pacific Port should also have the authority and financial capacity to acquire and maintain needed security and inter-modal investments required to make Pacific Port as effective as possible including co-investing in inland terminals, railroad and road improvements.
- f) Pacific Port should have the authority to establish for profit international operating subsidiaries to extend its expertise and reach globally.
- g) The Pacific Port should operate as a competitive global business, with attendant Letters Patent mandating:
 - i) Operation of safe, secure and globally competitive ports;
 - ii) Provide gateway ports for Canada on the Pacific; and,
 - iii) Contribute to the economic well being of British Columbia
- h) The Governments of Canada and British Columbia should consider creating a Ports Land Reserve to protect waterfront and adjacent lands for future generations from other commercial and non-commercial uses.

- 4) **BC tax policy for ports has changed significantly recently** and has given ports much needed relief. Further ways to provide additional tax relief to make ports more competitive particularly vis-à-vis US west coast competitors should be explored. Consideration should be given to:

- a) Additional property tax and assessment relief;
 - i) In 1986 residential and marine industry lands which were taxed at parity, are now taxed at 12 times residential rates; property taxes in the US are legislated at 12.8% of rent, while in North Vancouver they are now 300%, and,

- ii) US ports get grants of US \$400 million for infrastructure and pay no income taxes, while VPA pays C\$56 million.
 - b) To enhance the competitiveness and attractiveness of VPA as a port-of-call, relief from the 7% bunker fuel tax should be considered.
 - c) Consideration should be given to allowing Port Authorities to issue tax-exempt bonds like their US competitors, acknowledging that economic distortions can result and need to be priced into any cost-benefit analysis of such schemes.
- 5) In 1986 the provincial and federal governments cooperated to create the **International Maritime Centre (IMC)**. The provincial and federal governments should review the IMC and consider expanding provincial tax breaks for offshore shipping lines resident in BC in keeping with similar creative extensions and flexibility the province recently granted to the International Financial Centre (IFC). Synergies between IMC and IFC should be explored.
- a) Pacific Port and its inter-modal links to the US and across Canada should be **models of freight security**. This ought to be accomplished through excellent management, training and the latest technology. New freight security measures mandated by the US and by shippers, are putting severe financial pressures on ports around the world. Federal and provincial governments should make the necessary investments to ensure leading-edge security at Pacific Port. Security is a public good and needs to be publicly supported, although it could well take the form of a mixture of user-pay private investments and tax-supported public investments. Security is absolutely essential to BC and Canadian aspirations to be valued gateways for US customers. The goal here has to be to meet or exceed US freight and passenger security standards.

Road Policy Suggestions

There are a number of safety concerns, choke points, and improved capacity requirements needed for roads across the province, especially in the Lower Mainland. In this connection:

- 6) **Intermodal road links in Greater Vancouver, Capital Region, Nanaimo and Prince Rupert** should be high federal, provincial and regional priorities.
- 7) **Fuel and insurance premium taxes** have hurt the trucking industry and need to be moderated or spent on roads for the industry's benefit.
- 8) **The training and supply of truck drivers will be critical in future** and need policy attention directly as well as indirectly through making trucking more profitable by cutting some regulations and taxes.
- 9) **Develop and implement a system of dynamic road pricing mechanisms** to foster greater economic efficiency in the use of scarce road and environmental resources, and reduce or delay the need for certain road investments.

- 10) Providing better road infrastructure will also help profitability, safety and attractiveness of trucking as an investment and profession/job:**
- a) In Lower Mainland
 - i) Twinning of Port Mann Bridge and Deas Island Tunnel
 - ii) Constructing the North and South Fraser Perimeter Roads and Pitt River Bridge
 - iii) Removing parking from downtown core streets in all municipalities to improve flow of trucks and traffic
 - iv) Adding the Maple Ridge Fraser Crossing quickly
 - v) Consider using diamond lanes at all times for truck traffic, but certainly at night
 - b) Trans-Canada Highway upgrades in the Rockies should be planned and undertaken along to build needed connectivity to the rest of Canada and the US on all highways and links.
 - c) Develop a long-term plan to incrementally four-lane selected segments of Highway 97 from Prince George to the US-Canada border.
 - d) Consider using “short sea” options to reduce road congestion in the Lower Mainland
 - i) By using high speed barges and ferries to move goods among ports, airport and rails without taking up road capacity by using the Fraser River and Burrard Inlet
 - ii) By using *free* rights-of-way to save capital costs.
 - iii) Protect port and riverfront lands to facilitate the use of short sea transport
 - e) Improving security of trucks and borders should be a high priority to speed the movement of trucks and commercial goods and services

Air Policy Suggestions

Air policy is almost exclusively within the legislative purview of the federal government. Responsibility resides not only in Transport Canada, but also in Foreign Affairs Canada, International Trade Canada, Citizenship and Immigration, and the Canada Revenue Agency with growing roles played by Canadian Security Intelligence Service and the Minister of Justice in security matters. The lack of progress advancing Canada’s air connectivity through flexible open skies treaties is among the top concerns. Also of concern is the need to maintain and enhance the competitive position of YVR and regional airports as key contributors to the provincial economy. In this connection:

- 11) Develop an integrated North American air market** built on true open skies treaties with US and Mexico, but especially with the US as a first step.
- a) We are too small an origin and destination (O&D) location to be a gateway without treaties across the Atlantic and Pacific and into the United States and Latin America.
 - b) Our location and experience give us the chance to be a hub for many North American bound Asian passengers and vice versa, but the present failure to develop true open skies treaties hinders BC and Canada’s ability to achieve its global gateway promise.
 - c) Expand beyond the 15 flights currently allowed between YVR and Peoples’ Republic of China.
- 12) Fifth Freedom and Cargo Continuation rights** should be negotiated with all origin and destination countries either with or without reciprocity.

13) Establishing Open skies with China, India, Singapore and the EU should be priorities.

- a) This should be combined with getting Canada as an *approved destination* by the People's Republic of China.
- b) Improvements in the visa granting process for China are also required.
- c) Given the large population in BC of South Asian ancestry, there are significant opportunities to develop direct air service between YVR and India.
- d) A permanent Air Treaty with Singapore is long overdue and should be expeditiously concluded.

14) Federal immigration and customs authorities should ensure greater alignment of immigration policy and implementation to facilitate the gateway.

15) Explore BC airport mergers, pooled financing and entrepreneurial tactics for better scale/service

- a) Create mechanisms (policies, incentives, transition grants) to link, integrate and finance BC airports economically and effectively and allow for needed mergers and closures, with a view to improving air service to merged entities and their service areas.
- b) Federal authorities should reduce YVR rents or consider directly or indirectly recycling revenues to meet infrastructure requirements of smaller BC regional airports. Victoria and Kelowna likely do not need such access to capital as their scale, growth and volume are sufficient to sustain operations.
- c) Create governance structures and airport leases that provide incentives for devolved airports to be entrepreneurial and serve Canada to their fullest.
- d) Allow airports to keep the bulk of marginal revenues from operations/investments

16) The federal government should consider shifting its role to that of agent for treaties requested by any of the National Airport System devolved airports or by the Airports Council itself. This would turn the open skies treaty process into a bottom-up process driven by Canada's leading airports for the benefit of their customers and regions, and for all Canada as a result.

17) Provincial and federal aviation fuel tax relief should be considered to provide airports with a competitive edge given the current high cost of aviation fuel.

Public and Urban Transportation Policy Suggestions

Four principal issues arise in the urban transportation arena: the need for major investments in road and public transit in BC's major urban regions; the need for integrated planning and investment for all modes; the need to integrate transport, land use and urban development planning; and, the need for more effective regional governance. There is also a major need to explore innovative approaches to funding and operating urban transportation infrastructure. In this connection:

- 18) Provincial and local governments face major fiscal constraints that hamper building needed urban infrastructure. **Diverse P3 models with proven track records elsewhere** can help provide the capital, but significant public investments will also be required.
- 19) **Ferries should be explored as a vital part of urban transportation** (including, for example, *short sea* goods movement services). Rights-of-way are inexpensive, ferries are flexible and reduced road congestion can create valuable clusters of urban activities around ferry terminals thereby reducing sprawl.
- 20) **Integrate public transportation investments with land use and density powers** in order to maximize the benefits of these investments by creating more compact urban forms around stations, ferry terminals or bus stops that in turn provide passengers for public transportation.
- 21) **Streamline GVTA and regional transportation agency governance** so that they are proper regional fiduciaries, appointed by the provincial government with a minority of elected representatives with clear regional transport, related land use, taxing and borrowing/spending powers. A hybrid of the existing Vancouver International Airport Authority and Vancouver Port Authority models should be considered.

Inter-modal Logistics and Infrastructure Suggestions

Inter-modal logistics and infrastructure are critical. It is essential that inter-modal thinking complements and guides modal policies. In this connection:

- 22) **Support the work of the Gateway Council** and consider giving it formal advisory powers to provincial and local governments.
- 23) **Intelligent Transportation Systems (ITS), Transportation Supply Management (TSM) and Transportation Demand Management (TDM)** should be deployed to the greatest extent possible by regional transportation, provincial and federal agencies. Specifically:
 - a) Use of existing HOV lanes during evening or even at all times for commercial vehicles should be considered.
 - b) Consideration of peak-time / peak load pricing to lessen commuter traffic and shift demand to non-peak times.
 - c) Consideration should be given to a U-Pass-like “non-exclusive” bus pass scheme to encourage shifting passenger loads onto transit and to reward frequent transit users.
- 24) **Expand training opportunities in transportation and logistics** as the demand is rapidly outstripping supplies of highly qualified people.
- 25) **Create a National Transportation and Logistics Centre in BC** to conduct ongoing research to support logistics and transportation in the province.

V. CONCLUSIONS – MOVE FORWARD QUICKLY

There are five principal conclusions to be drawn from the discussion and suggestions above:

- Opportunities abound in different regions of British Columbia to foster transport industries in one or more modes;
- To realize the opportunities across BC demands a strategic and integrated approach among diverse modes and regions and the public and private sectors based on sound analysis and flexible and appropriate policy;
- Realizing opportunities also demands the integration of land use and development controls and policies into the integrated transportation strategies;
- Transportation industries are highly integrated parts of an increasingly global and tightly integrated supply chain. As a result, all modes must work together as well as with governments at all levels. Transport Canada, Foreign Affairs Canada, International Trade, Citizenship and Immigration and other agencies whose mandates affect the movement of people and goods should work together to forge an integrated national, provincial, and local policy framework within which transportation can flourish; and,
- Transportation and land use decisions are highly complementary and should be considered jointly with policy and investment decisions for all modes of transport.

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Appendix A: REFERENCES

Airline Industry Monitoring Association of BC (AIM BC), *Air Policies for a Competitive Canada: Wings of Change*, (Vancouver: AIM BC), September 2004

Armstrong, Jane, "Vancouver airport to test iris scanners: High-tech program aims to fast track U.S.-bound fliers with clean record," *Globe and Mail*, p. A9, November 17, 2004.

Asia Pacific Initiative, *Backgrounder*, (Vancouver: Asia Pacific Initiative), 1987.

Batson, Andrew, "China Group to Counter Shanghai Growth," *The Asian Wall Street Journal*, Thursday, June 3, 2004, p. A3

British Columbia Ministry of Transportation, *Opening up B.C.: A transportation plan for British Columbia*, (Victoria, BC: BC Ministry of Transportation), 2003.

British Columbia Progress Board, *Toward British Columbia North Star 2010: Second Annual Benchmarking Report of the BC Progress Board*, (Vancouver, BC: BC Progress Board), December 12, 2002.

Canada Transportation Act Review Panel, *Vision and Balance: Report of the Canada Transportation Review Act Panel*, (Ottawa: Minister of Public Works and Government Services Canada), June 2001.

Colledge Transportation Consulting Inc., *British Columbia Ports: Competitive Profile*, (Victoria, BC: Ministry of Small Business and Economic Development), June 2004.

Council of Tourism Associations of BC, *Insurance and Financing Report*, (Vancouver, BC: Council of Tourism Associations of BC), December 2003.

Davis, Chuck and Shirley Mooney, *Vancouver: An Illustrated Chronology*, (Burlington, Ont.: Windsor Publications, Ltd.), 1986.

Davis, Chuck, General Editor, *The Greater Vancouver Book: An Urban Encyclopedia*, (Surrey, B.C.: Linkman Press), 1997.

Domaas, Allen, *Fuelling an Economic Engine: Waterborne Commerce and the Fraser River*, (New Westminster, BC: Fraser River Port Authority), September 08, 2004.

Donville, Christopher, "P&O Ports to spend \$130 to double terminal capacity," *Vancouver Sun*, Wednesday, March 24, 2004, pp. D1 and D4.

The Economist, "Hudson's Bay Warmer," October 7, 2004.

Francis, D., Editor, *Encyclopedia of British Columbia*, (Madeira Park, BC: Harbour Publishing), 2000.

Goldberg, Michael A., *Airports and Territorial Development--The Case of Vancouver: A Case Study for the OECD*, (Paris: OECD), October 2000.

Greater Vancouver Gateway Council, *Economic Impact Analysis of Investment in A Major Commercial Transportation System for the Greater Vancouver Region, including Appendix*, prepared by Delcan Economic Development Research Group, (Vancouver, BC: Greater Vancouver Gateway Council), July 2003.

Greater Vancouver Transportation Authority (GVTA), *2005-2007 Three-Year Plan & Ten-Year Outlook*, (Burnaby, BC: GVTA), February 2004.

Harris, Paul, "Shipping container 'crisis' looms for ports," *Business in Vancouver*, October 19-25, 2004, pages 1 and 5.

Harris, Paul, "\$10-million container deal aimed at easing port squeeze - Vancouver Port Corp.'s Far East swing gives officials first-hand insights into enormity of Shanghai throughput bound for B.C.," *Business in Vancouver*, November 16-22, 2004, p. 3.

Hayes, Derek, *Historical Atlas of British Columbia and the Pacific Northwest*, (Vancouver: Cavendish Books), 1999.

InterVISTAS, "Has WestJet Canadian's Domestic Seat Capacity?" *InterVISTAS Briefing Note*, (Vancouver, BC: InterVISTAS Consulting Ltd.), 5 April 2004.

Jang, Brent, "Rail rivals team up in Vancouver as China trade boom hits port," *The Globe and Mail*, Tuesday, October 19, 2004, pp. D1 and D22.

Jang, Brent, "Vancouver port plans huge expansion," *Globe and Mail*, p. B01, November 15, 2004

Jang, Brent, "Planned fee increase at Pearson outrageous, airline group says: 'We don't need a Taj Mahal,' IATA argues," *Globe and Mail*, p. B9, November 17, 2004.

Jonathan Seymour & Associates, Inc., *British Columbia – Alberta Northwest Corridor Analysis*, (Victoria, BC: BC Ministry of Small Business and Economic Development, with BC Ministry of Transportation and Alberta Economic Development), April 15, 2004.

Korstrom, Glenn, "Regional airport expansions fuel tourism: Local businesses benefit as millions invested in regional airports," *Business in Vancouver*, November 16-22, 2004, p. 17.

Lampert, Jerry, "Remarks to TransLink Board of Directors – Re: Proposed Richmond-Airport-Vancouver Rapid Transit Project," (Vancouver: Business Council of British Columbia), April 16, 2004.

Lazar, Fred, "Turbulence in the Skies: Options for Making Canadian Airline Travel More Attractive," *Commentary*, (Toronto: C.D. Howe Institute), No. 181, April 2003.

Machalaba, Daniel, "U.S. Ports Hit a Storm," *The Wall Street Journal Europe*, Thursday, March 11, 2004, page A7.

MacKay, Donald, *The Asian Dream*, (Vancouver: Douglas & McIntyre), 1986.

Ministère des transport du Québec, Québec Marine Transportation Policy: Québec at the Helm, (Québec, PQ: Ministère des transport du Québec), 2001.

Mitchell, David J., *All Aboard: The Canadian Rockies by Train*, (Vancouver: Douglas and McIntyre), 1995.

Mitham, Peter, "SkyTrain station platforms up for retail rent," *Business in Vancouver*, February 24 -- March 1, 2004, p. 2.

Mitham, Peter, "West Coast port businesses face \$50-million maritime security bill," *Business in Vancouver*, February 24 -- March 1, 2004, pp. 1 and 5.

Morley, Alan, *Vancouver: Milltown to Metropolis*, (Vancouver: Mitchell Press), 1974.

Morton, Brian, "North gets rail-service boost," *Vancouver Sun*, Tuesday, October 19, 2004, p. D1-2.

Munro, John M., *Transportation and Communication and the Regional Economies*, a report prepared for the BC Progress Board Project 250: Regional Economies Expert Panel, (Vancouver, BC: BC Progress Board), July 2002.

Northwest Corridor Development Corporation, *The Northwest Transportation and Trade Corridor Capability Report: Access, Capacity and Development Guide to One of Canada's Best Kept Trade Secrets*, prepared by AGRA Earth & Environmental Limited, (Prince Rupert, BC: Northwest Corridor Development Corporation), May 2000.

Northwest Corridor Development Corporation, *Linking our futures*, (Prince Rupert, BC: Northwest Corridor Development Corporation), no date.

Oke, Tim and Robert North, editors, *Vancouver and Its Region*, (Vancouver: UBC Press), 1992.

Penner, Derrick, "CN, CP signs three deals to share tracks, boost productivity," *Vancouver Sun*, Wednesday, November 17, 2004, p. D6.

Schmidt, Lisa, "WestJet plans its third stock split in four years," *Vancouver Sun*, Wednesday, March 24, 2004, p. D6.

Simpson, Scott, "Port strike will cut off food, fuel, medicine," *Vancouver Sun*, Saturday, April 17, 2004, pp. A1 and A4.

SkyTalk, "\$1.4-Billion Capital Program Unveiled," (Vancouver, BC: VIAA), March 2004, pp. 1 and 2.

Shaw, Gillian, "Port welcomes CN, CP's decision to share track," *Vancouver Sun*, Wednesday, October 20, 2004, p. D3.

Swift, Allan, "Strike cost CNR up to \$40 million," *Vancouver Sun*, Wednesday, March 24, 2004, p. D6.

Transport Canada, *Transportation in Canada, 2002 Annual Report*, (Ottawa, ON: Transport Canada), May, 2003.

Transport Canada, *Transportation in Canada, 2002 Annual Report, Addendum*, (Ottawa, ON: Transport Canada), May, 2003.

Vancouver International Airport Authority (YVR), *2003 Annual Report*, (Richmond: YVR), April, 2004.

Vancouver Port Authority, *Port Vancouver: Economic Impact Study*, prepared by InterVISTAS Consulting Inc., (Vancouver, BC: Vancouver Port Authority), 30 August 2001.

World Bank, *World Development Report 2002*, (Washington, DC: World Bank), January 2004.

Appendix B: LIST OF INTERVIEWS

<u><i>Date</i></u>	<u><i>Meeting</i></u>
February 18, 2004	Ministry of Transportation
March 9, 2004	Northwest Corridor Development Corporation
March 9, 2004	Greater Vancouver Gateway Council
March 29, 2004	Vancouver International Airport Authority
March 29, 2004	BC Aviation Council
March 29, 2004	Vancouver Port Authority
March 30, 2004	BC Chamber of Commerce
March 30, 2004	BC Trucking Association
May 21, 2004	Northwest Corridor Development Corporation
May 27, 2004	Greater Vancouver Gateway Council
May 27, 2004	Jonathan Seymour and Associates Inc.
May 28, 2004	Council of Tourism Associations of BC
May 28, 2004	Great Canadian Railtour Company Ltd.
June 3, 2004	Canadian Pacific Railway
June 4, 2004	Alberta Economic Development
June 7, 2004	WESTAC
June 21, 2004	Chamber of Shipping BC / Western Marine Community Coalition and Association
June 24, 2004	Ministry of Small Business and Economic Development
July 7, 2004	Translink
July 20, 2004	Prince Rupert Port Authority
September 8, 2004	BC Ferries
September 27, 2008	Gateway Council
September 28, 2004	Translink
October 1, 2004	CN Rail
October 4, 2004	BC Ferry Commissioner
October 19, 2004	Fraser River Port Authority

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