Atlantic Gateway Business Case

Prepared for
Atlantic Canada Opportunities Agency

Prepared by
Inter*VISTAS* Consulting Inc.
In Association With

MariNova Consulting Ltd.

and

TranSystems

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This study was commissioned by the Atlantic Canada Opportunities Agency and prepared by Inter*VISTAS* Consulting Inc. in partnership with MariNova Consulting Ltd., and TranSystems Corporation. The analysis contained in the report is based on research, industry standards, and data available to the consulting team at the time of the study and conclusions are drawn from the consulting team's professional experience, knowledge, and analysis. The authors accept responsibility for the views expressed and all errors and omissions contained within this report.

The views expressed in this report are those of the authors and do not necessarily reflect the views or positions of the Atlantic Canada Opportunities Agency or the Government of Canada.

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Glossary of Terms

ACOA – Atlantic Canada Opportunities Agency.

AILT – Atlantic Institute of Logistics and Transportation.

AIMS – Atlantic Institute of Market Studies.

All water service – A shipping service that does not include inland intermodal activity, but is transported from its origin to its destination solely by water transportation (e.g. all water service from Far East via Panama Canal to U.S. east coast).

APEC – Atlantic Provinces Economic Council

APGCI – Asia-Pacific Gateway and Corridor Initiative.

APHIS – Animal and Plant Health Inspection Service.

Break bulk – Material stacked on wooden pallets and lifted into and out of the hold of a vessel by gantry cranes on the dock or aboard the ship itself.

Boxcars – An enclosed railcar used to transport general freight.

CAGR – Compound annual growth rate.

Class 1 rail service – Rail carriers that generate gross revenues exceeding $250 million per year.

CMA – Canada Marine Act.

CTA – Coasting Trading Act.

Distribution centre – A facility that receives large quantities of inventory, serves as a temporary storage centre, and facilitates responsive and expedient shipments to branch locations. May also coordinate and provide required packaging for the transportation of products.

Distripark – A district in which several modes of transport are available along with distribution facilities.

ECNA – East Coast North America.

FTZ – Foreign Trade Zone. Created in the United States they offer special customs procedures to businesses engaged in international trade activities.

Gantry crane – Port crane used to load and discharge containers from vessel, able to be positioned by moving along rail tracks.

GDP – Gross domestic product. Measure of the size of an economy that includes a value of all final goods and services produced in an economy.

Green lane – Allows security services to better identify and respond to potential threats and provides incentives to importers to enhance their supply chain security measures.

Greenfield – A site unencumbered by development.

HRM – Halifax Regional Municipality.

Indirect employment – Employment created in industries supplying direct Gateway business.

Induced employment – Employment generated as direct and indirect Gateway employees spend their wages in the economy.

Intermodal – Coordinated transportation of freight, especially in connection with long-haul movements, using any combination of freight forwarders, containerization, air, rail and road.

IPI gateway – Inland point intermodal gateway. Used to move cargo via land to/from an inland port.

ISC – Indian subcontinent.

Land bridge – Containers moving from a foreign country by vessel, and then sent to an inland point by land transportation.

LNG – Liquefied natural gas.

Logistics – The part of supply chain management that plans, implements, and controls the efficient, effective flow and storage of goods, services, and related information between the point of origin and the point of consumption in order to meet customer requirements.

MT – Million Tonnes

Pax - Passengers

Pendulum service – A shipping lane that has sequential port calls along a maritime range, structured as a continuous loop.

Post-panamax vessel – Shipping vessels that are too large to transit the Panama Canal.

Reefer – A refrigerated shipping container typically used for transporting perishable commodities. The term is also used to describe a temperature controlled ship.

RoRo – Roll-on-roll-off ship (designed to carry wheeled cargo).

RoPax – Roll-on-roll-off passenger ship or ferry.

RPK – Revenue passenger kilometres. The product of the number of passengers multiplied by the distance flown.

Short sea shipping – Coastal or coastwise shipping.

Supply chain – Supply chains encompass all activities associated with the flow and transformation of goods from the raw material extraction through to the end user, as well as the associated information flows.

TCH – Trans-Canada Highway

TEU – Twenty-foot equivalent unit (e.g. 20 foot container).

Transload – Reloading, repackaging and warehousing of freight. It is usually used to describe the activity of switching cargo from one mode to another (e.g. container to highway trailer).

Transshipment – transferring containers from a large 'mother ship' to a small 'feeder' ship. Usually occurs in a large 'hub' port for transfer to a smaller port.

Unit train – A train pulling only one type of car (e.g. container cars, grain cars).

WCNA – West Coast North America.

Executive Summary

Canada is a successful trading nation. Our economic growth and standard of living depend on the export and import of products and resources and transportation systems that enable us to move goods and people with world-class efficiency. However, the global economy is changing quickly with rapid growth in international trade and the establishment of new trade patterns. This phenomenon is being driven, in large part, by reductions in transportation costs, improved technology, and trade liberalization.

Canada's future prosperity will be tied to our ability to compete in this new global marketplace. A key requirement for success will be the ability to transport goods and people reliably and efficiently within global supply chains and routings. Therefore, building Canada's transportation gateways and corridors is an important national priority.

In recognition of the critical role that gateways and corridors play in Canada's international competitiveness, the Government of Canada announced the new $2.1B National Gateways and Border Crossing Fund in Budget 2007. In addition, Budget 2007 identified the National Policy Framework for Strategic Gateways and Trade Corridors that will guide federal investment decisions. It represents a coherent national policy approach that promotes planning and partnerships between the public and private sectors to guide the development of efficient and competitive gateways and corridors.

The Asia-Pacific Gateway and Corridor, the Ontario-Quebec Continental Gateway and Trade Corridor and the Atlantic Gateway are core elements of the national system. These initiatives will assist in strengthening Canada's competitive position in the international marketplace. The Atlantic Gateway, in particular, has the potential to facilitate access between North America and the emerging economies in China, India, Thailand, Malaysia, Indonesia, Bangladesh, Pakistan, Singapore, and the Middle East.

The purpose of this report is to:

- Set the global context for an Atlantic Gateway;
- Clearly align the Atlantic Gateway initiative with national and regional interests;
- Identify and evaluate gateway-related opportunities for Atlantic Canada in relation to container traffic, other marine commodities, air passenger and cargo traffic, and cruise traffic;
- Describe supportive legislative and regulatory environments that facilitate global commerce;
- Develop a strategy and action plan that will position Atlantic Canada to take maximum advantage of these opportunities; and
- Evaluate the impacts of the strategy.

A specific focus of the report is the determination of the most significant immediate opportunity for Atlantic Canada, an identification of the key drivers that are creating this opportunity, and an articulation of the key issues and initiatives that could be taken to realize the Atlantic Gateway's potential.

With these objectives in mind, Inter*VISTAS* Consulting Inc., MariNova Consulting Ltd., and TranSystems Corporation were retained by the Atlantic Canada Opportunities Agency to develop a business case for the Atlantic Gateway. The business case is not intended to identify specific areas of investment, which is the collective responsibility of the private sector, provincial and federal governments, and regional entities. The business case is intended to provide a rationale for governments in partnership with the private sector to dedicate resources to the development of an Atlantic Gateway strategy.

Main Conclusions

The main conclusions of the report are:

- There is a compelling case for advancing the Atlantic Gateway and focusing initial efforts on growing international container trade into the Atlantic region.
- The Atlantic Gateway has a strong value proposition rooted in three key factors – competitive transit times, reliability and cost competitiveness. In addition, the Atlantic Gateway has the potential to provide North American businesses with more efficient supply chain management practices, greater market reach through initiatives such as building the transload sector, access to specialized services and the application of new transportation and information technologies.
- There are opportunities in the region, but there are also challenges that can only be addressed through public and private sector collaboration and effort. One of the first major challenges is communicating the value proposition through marketing initiatives.
- The Atlantic Gateway would benefit the entire country by contributing to the development of an efficient and competitive national supply chain. This supply chain would improve the productivity and competitiveness of businesses in Ontario, Québec and the Atlantic region that would ship through Atlantic Canada.

The Gateway Concept in Atlantic Canada

With a well-developed transportation network already in place, Atlantic Canada has an opportunity to play a more significant role in Canada's developing gateway system. In recent years, numerous studies have examined the gateway concept in Atlantic Canada. This research has identified a number of significant opportunities for the Atlantic Gateway, including:

- Increased container traffic for Atlantic Canadian ports through the Suez Canal;
- Potential for increased exports in various commodities, including energy, forest products, tires, food products, and seafood;
- Potential for increased trade with emerging former communist countries in Eastern Europe;
- Growth in international air travel and tourism; and
- Growth in cruise activity (both port-of-call and niche homeport operations).

These reports confirm that developing Canada's Atlantic Gateway would yield important benefits for the region and benefit shippers and travellers across the country as a whole, including:

- Increased traffic volumes through Atlantic Canada could create the critical mass required to reduce transport costs and create new service opportunities, which in turn, could open up new markets for Canada's exporters;
- Additional cargo and passenger traffic would generate significant economic benefits and high-paying jobs in Atlantic Canadian communities; and
- Tax revenues would increase for the region's governments.

Such an initiative would also be well-aligned with several North American and Canadian policy agendas, including:

- North American Competitiveness;
- Global Commerce Strategy;
- National Policy Framework for Strategic Gateways and Trade Corridors;
- Canada's Infrastructure Advantage;
- Security and Border Management; and
- Environmental Protection.

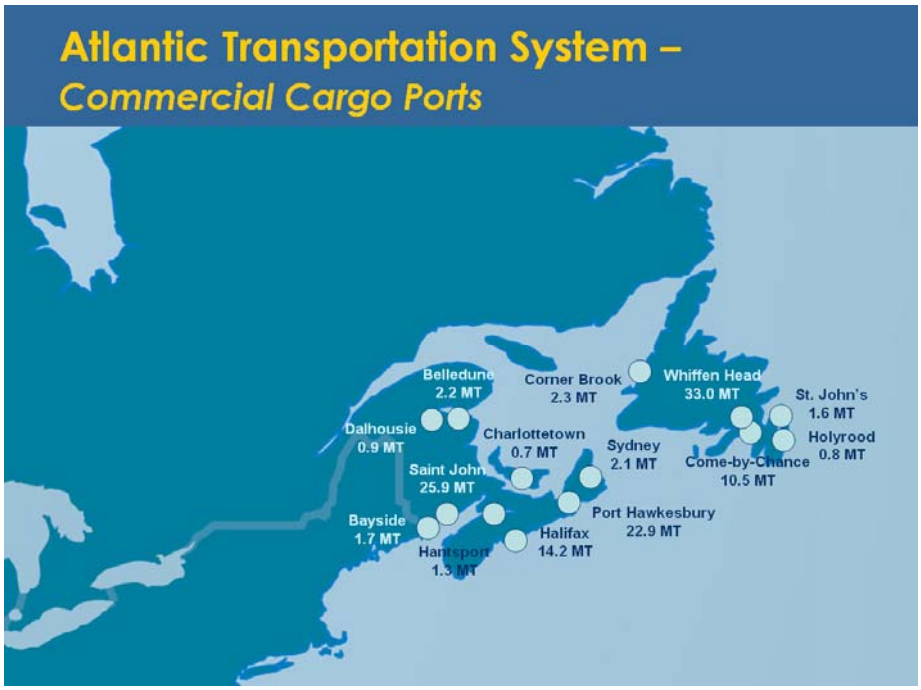
Potential Gateway Opportunities

The economic growth and trade shifts described earlier are creating exciting opportunities for Canada's international gateway communities to play more significant roles in the movement of goods and people. Potential areas of opportunity for the Atlantic Gateway include an increased share of:

- *Marine container traffic* – Containerized trade has been the fastest growing marine sector over the past 15 years, and coupled with the expansion of global manufacturing in Asia, has led to explosive growth in trade activity between North America and Asia. In the past five years, container trade in North America has increased at a compound annual growth rate (CAGR) of 6.9% reaching 48 million TEUs in 2005. By 2015, North American container trade is predicted to soar by 50% to 72 million TEUs.

  The primary container ports in Atlantic Canada are the Port of Halifax, the Port of St. John's, and the Port of Saint John. These ports have developed a successful niche in the international container marketplace. Over the past decade, container traffic at these ports has increased from approximately 492,000 TEUs in 1995 to over 693,000 TEUs in 2006, equivalent to a 3.2% compound annual growth rate.

Figure ES-1: Key Commercial Ports in Atlantic Canada (2003)



Source – Statistics Canada

- *Non-container marine traffic* – Atlantic Canada is also well established in the liquid bulk market due to the significant quantities of energy products that move to and from the region. The major liquid bulk facilities in Atlantic Canada are the Port of Saint John, Port Hawkesbury, the Port of Halifax, the Whiffen Head transshipment terminal, and Come by Chance. Liquid bulk activity at Atlantic Canada's ports has significantly outperformed the global marketplace, nearly doubling between 1995 and 2003 representing a compound annual growth rate of 8.9%.[1] In the future, crude and refined petroleum products are expected to grow because of increased domestic production off the coast of Newfoundland and from a possible increase in refining capacity in Saint John. In addition, there is the possibility of liquefied natural gas operations in several locations in the region, including Saint John.

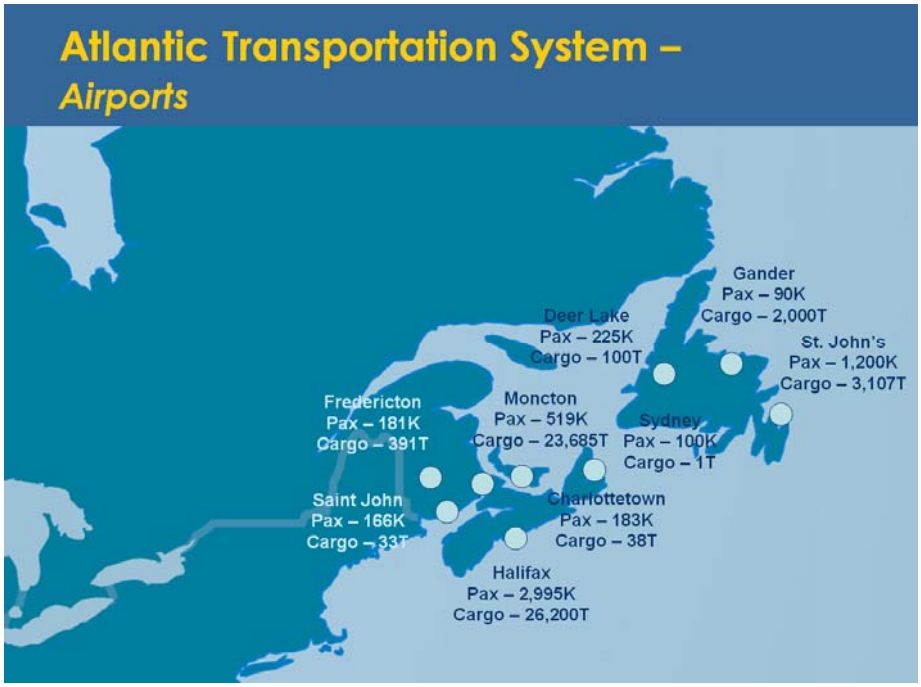
  Other marine cargo in the region, including break bulk[2], roll-on roll-off[3], dry bulk[4], and general cargo, has been growing at an annual rate of 4.2% over the last decade, outpacing global growth rates of 2.4%. The movement of regional bulk and break-bulk goods is impacted significantly by global growth and conditions in the U.S. housing market. Future growth is expected to be derived from existing markets.

[1] From 33.2 million tonnes to 65.6 million tonnes, which includes liquid bulk traffic data contained in Statistics Canada's Shipping in Canada (2003) publication. Unfortunately, the publication does not capture all liquid bulk activity in Atlantic Canada.
[2] Break bulk, which is a category of general cargo is forest products (wood pulp, paper, lumber), refrigerated products (bananas, potatoes, fruit), steel, machinery, locomotives, rubber, etc.
[3] Another category of general cargo, roll-on roll-off usually includes autos, trailers, machinery, agricultural implements, construction equipment, etc.
[4] Dry bulk is "bulk" cargo which tends to move in "bulk." In this region, it includes coal, aggregates, gypsum, potash, salt, limestone, grain, nickel ore, iron ore, etc.

- *Air passengers* – Global air passenger traffic increased 4.8% annually between 1985 and 2005. Volumes are expected to grow at a similar rate for the next 20 years. The major passenger airports in Atlantic Canada are Halifax Stanfield International Airport, St. John's International Airport, and Greater Moncton International Airport. Passenger traffic at these facilities has increased steadily over the past decade from 3.5 million passengers to 5.2 million passengers in 2006, equivalent to a compound annual growth rate of 3.6%. While these airports have successfully established themselves as regional hubs, they are less established in the marketplace as international gateways.

  Going forward, air passenger traffic growth in Atlantic Canada is expected to be driven by leveraging U.S. pre-clearance at the Halifax regional hub, increased direct service to other regional airports, and by exploiting opportunities made available by Canada's new Blue Sky international air policy.

Figure ES-2: Key Commercial Airports in Atlantic Canada (2005)



Source – Statistics Canada

- *Air cargo* – Air cargo represents the other part of the intercontinental goods distribution network. While the primary benefit of maritime transportation is lower costs, the benefits of air transportation are speed and reliability. Global air cargo traffic increased 5.1% per year between 1985 and 2005 (just under two times global GDP). The growth in air cargo has been driven by declining costs and changing logistics patterns and practices. Boeing reports that air cargo costs have declined by 2.4% per annum since 1985. This has enabled mid-value-range goods such as fresh seafood and fashion apparel to move by air rather than just high-value products. The continued decrease in freight rates will broaden the scope of air-compatible shipments, making more Atlantic Canada products eligible for air cargo transport. Going forward, air cargo traffic is expected to grow at an average of 6.1% per year between 2005 and 2025.

  The key air cargo facilities in Atlantic Canada are Halifax Stanfield International Airport, Greater Moncton International Airport, and St. John's International Airport. Despite the fact

that Atlantic Canada produces a considerable amount of higher value, time sensitive cargo such as seafood products, as a whole, the region is not well established in the air cargo marketplace. Future air cargo traffic growth in Atlantic Canada is expected to be driven by growth in existing markets, recapture of air cargo currently diverted to other airports outside of the region and the establishment of increased value added/distribution centre activity in Halifax and Moncton.

- *Cruise passengers* – Over the past two decades, the cruise industry has emerged as one of the fastest growing segments in the global travel and leisure industry. Between 1990 and 2004, global cruise traffic increased 8.2% per year (topping 14 million passengers worldwide). Going forward, global cruise industry growth is expected to slow but remain at robust levels (4.6% per year between 2004 and 2020).

  Cruise ports in Atlantic Canada have established a niche position in the marketplace for port of call operations. The major cruise ports in the region are the Port of Halifax, the Port of Saint John, and the Port of Sydney. Traffic at these ports tripled between 1998 and 2006, increasing from 94,200 passengers to 317,800 passengers (equivalent to a compound annual growth rate of 16.4% per year). The Port of Charlottetown is also projecting rapid growth.

  In the future, cruise traffic growth in Atlantic Canada is expected to be driven by stimulating consumer demand for the Atlantic Canada cruise product and by development of cruise homeport operations. Two ports in the region have aspirations of developing homeport operations – Halifax and St. John's. A previous study for the Port of Halifax concluded that the target market should be small to medium sized vessels, with modest forecasts initially of 5,000 passengers per year. Larger vessels and additional cities may be attracted once the market has been established.

Figure ES-3: Key Cruise Ports in Atlantic Canada (2006)

Source – Statistics Canada

In order to prioritize these opportunities, the consultants examined each of the opportunity areas based on existing traffic levels in Atlantic Canada, the historical performance in the region, as well as the forecast long term growth rates for the sector.

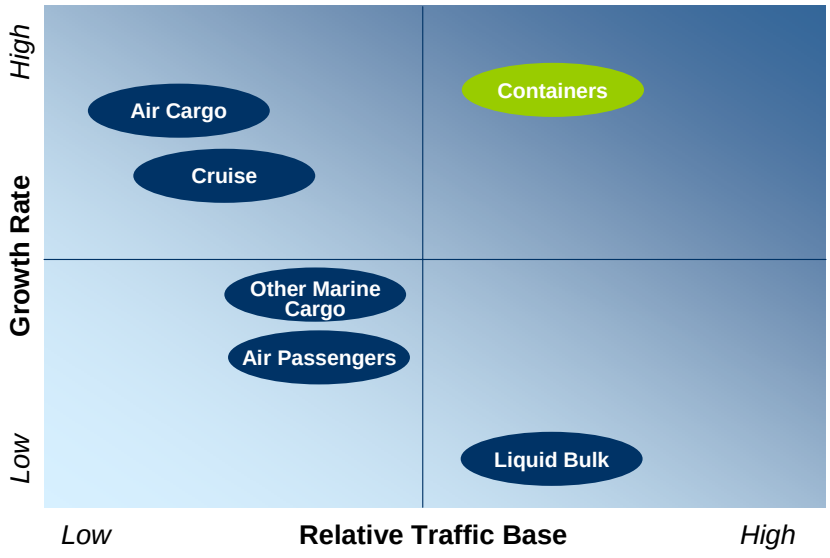
Figure ES-4: Historical and Projected Future Performance by Opportunity Area

Opportunity Area	Growth Rates in Atlantic Canada	
	Over the Past Decade	Projected to 2025
Containers (TEUs)	3.2%	6.9%
Liquid Bulk (tonnes)	8.9%	0.8%
Other Marine Cargo (tonnes)	4.2%	2.8%
Air Passengers	3.6%	2.6%
Air Cargo (tonnes)	n/a	4.2%
Cruise Passengers	16.4%	3.9%

Source – InterVISTAS

Based on this approach, the consultants concluded that the container sector was the priority area of opportunity, offering both a well established traffic base as well as very high future growth potential.

Figure ES-5: Opportunity Assessment Matrix



Source – InterVISTAS and MariNova

This initial focus on container activity is also substantiated by several other considerations, including:

- *Immediacy of the opportunity* – There is a recognition that a shorter term window of opportunity exists for the Atlantic Gateway to position itself and capitalize on the expected significant growth of new Suez container services between Asia and North America. Many of these commercial and operational developments are already in place, while others will

develop over the next four years. This creates a distinct but discrete window of opportunity for the Atlantic Gateway to achieve an increase in volumes, provided that cost, reliability, and transit time requirements from point of origin to ultimate destination are met.

- *Greatest economic benefits for the region* – The detailed economic analysis in this report indicates that increased container activity would make the most significant economic contribution to Canada and the region.

- *Strong alignment with other Canadian initiatives* – The container sector most closely aligns with other national initiatives, in particular the references to container movements in the National Policy Framework for Strategic Gateways and Trade Corridors and the Infrastructure Advantage announced in Budget 2007.

- *Strong synergies with Canada's other gateways and corridors* – The growth of container operations in Atlantic Canada would also have significant synergies with Canada's West Coast ports and the Ontario-Québec Continental Gateway and Trade Corridor. The development of a national transportation system with gateways on both coasts, connected by a national highway system and North America's only true transcontinental railway network would provide supply chain users in both Canadian and U.S. hinterland locations with service alternatives as well as improved connectivity and increased flexibility, reliability, and frequency by which to move their products.

Despite the consultants' recommendation that marine containers should be the initial priority for the Atlantic Gateway, high growth opportunities also exist in air cargo, air passenger, and cruise operations. In addition, liquid bulk activity also holds exciting opportunities with increased production, new refining capacity, and the potential for new LNG facilities in the region.

It is recommended that each of these opportunities be pursued, in relative priority, to complete the multifaceted Atlantic Gateway initiative. Work is already being conducted in many of these areas. To support this work, the consulting team developed traffic projections and identified the associated economic impact for each opportunity (described in detail in Technical Appendices #1 and #2).

The Container Opportunity

Several trends in global trade and shipping can be observed that support the potential for East Coast North American ports, and the Atlantic Gateway specifically, to expand their role in providing international container transportation services between Asia and the Indian subcontinent and inland markets in Canada and the U.S. These include:

- Congestion at West Coast North American ports is requiring shippers to diversify their supply chains and gateways (this message was reinforced in the consultations held with Canadian and U.S. shippers);

- Congestion and ship size constraints at the Panama Canal;

- The deployment of larger container ships (both traditional post-Panamax vessels and newer mega-sized ships);

- Rapid growth in Asia-North America trade driven by imports of consumer goods from Asian countries, especially China; and

- Potential shifts within Asia with respect to the location of production activity, which may result in increased shipment of goods from countries such as Malaysia, Vietnam, Thailand, and Indonesia, as well as India and Pakistan.

The Atlantic Gateway is well positioned competitively to take advantage of these potential opportunities and offer supply chain users a strong value proposition rooted in three key factors – transit times, reliability, and cost competitiveness. These primary elements are complemented by several other positive attributes, including the potential for more efficient supply chain management practices, greater market reach, access to specialized services, and the application of new transportation and information technologies.

Vision

Atlantic Canada is geographically well positioned and has acted as a gateway to North America for over 100 years. However, in order to fully capitalize on the emerging opportunities, the vision for the Atlantic Gateway must be anchored on a 'bigger' scale. Governments and stakeholders should consider important infrastructure and capacity needs for the next 20 years within the broader context of further analytical work. Appropriate land use planning and protection mechanisms could also be considered to enable the gateway to respond effectively to opportunities over the long term.

The proposed vision for the Atlantic Canada Gateway, developed in consultation with key organizations, including shippers, transportation companies, ports and airports, governments and several associations, is:

Canada's Atlantic Gateway is the premiere integrated transportation network on the East Coast of North America

Specifically, this means:

- Improving the efficiency and reliability of the Atlantic Gateway to facilitate trade for Canada's exports and imports; and
- Increasing the Atlantic Gateway's share of international goods and passenger traffic.

Atlantic Gateway Action Plan

In order to realize the Atlantic Gateway's vision and full potential, improvements could be made in several core and interrelated areas, including:

- Improved marketing and product development;
- Gateway infrastructure improvements and protection;
- Security and border efficiency improvements;
- Stakeholder collaboration;
- Policy initiatives to improve competitiveness; and
- Development of the region's human resources.

A number of possible solutions have been identified to address the aforementioned issues. These initiatives are based on feedback received from stakeholder consultations and workshops, as well as from previous research and analysis.

Development of the Atlantic Gateway will need to be driven by market demand and opportunity. Investments must be evidence-based and consistent with projected traffic volumes. The federal government will need to build on partnerships rather than substituting or displacing stakeholder-driven initiatives and consensus since the private sector is best positioned to make investment decisions for their own long-term profitability. Consideration should also be given to the use of public-private-partnerships, where appropriate, to leverage private sector investment and innovation in addressing Atlantic Canada's public infrastructure needs.

Risk Factors

The development of the Atlantic Gateway is not without risk, however. In particular, there are several factors outside the gateway's immediate control that could negatively affect its potential, including:

- Global economic slowdowns (or at the very least, in key influential markets, such as China and India);
- Competition from other gateway regions (other port communities in North America are aware of the potential economic benefits associated with participating in the movement of container traffic, and as such, are aggressively pursuing this traffic);
- Security and border requirements (the Atlantic Gateway's potential prosperity will depend to a large extent on the efficient and cost-effective flow of goods and people across the Canada/U.S. border);
- Continued dependence on a single rail service; and
- Possible development of capacity issues in the longer term (while the emphasis going forward will be on realizing the potential of the Atlantic Gateway, a risk also exists that the Gateway could attract more traffic that it is physically capable of efficiently handling).

Economic Impact

The region's transportation businesses are a major employment and economic generator. The current economic impacts associated with the region's marine ports, ferries, airports, trucking and rail companies is estimated at 29,500 direct jobs and $1.13 billion in wages, equivalent to $46,000 per person year of employment.

Figure ES-6: Direct Economic Impact Generated by Atlantic Transportation Businesses

Component	Jobs	Person Years	Wages ($ millions)	GDP ($ millions)	Output ($ millions)
Marine Ports/Ferries	18,400	15,200	733	1,084	2,463
Airports	7,600	6,400	260	472	1,225
Trucking	1,900	1,600	60	95	176
Rail	1,600	1,400	77	119	208
Total Direct Impact	29,500	24,600	1,130	1,770	4,072

Source – InterVISTAS

The estimated multiplier impacts of this activity (direct plus indirect plus induced) produces 72,300 jobs or 60,300 person years of employment Canada-wide and GDP of $4.1 billion.[5] Almost 90% of these jobs and economic output are in Atlantic Canada.

Economic Impact of Achieving the Vision

Successful development of the Atlantic Gateway has the potential to generate additional economic benefits for the Atlantic Canada region and Canada as a whole. These economic benefits include:

- *Economic productivity* – Gateways can contribute to economic growth and productivity performance by supporting the business activity of other sectors of the economy.
- *Transportation and logistics* – A successful gateway, by virtue of serving a total market much larger than its own 'local' catchment area, is capable of supporting a much higher level of transportation service than its own origin/destination traffic would warrant.
- *Business development* – A well-developed Atlantic Gateway can add to the Atlantic Canada advantage, offering a high level of competitive transportation and logistics services to the mix – a key feature for firms looking to locate in North America.
- *Exports and trade* – The increased exports of Canadian-produced goods could potentially create employment opportunities in a wide range of sectors.
- *Foreign direct investment* – Attracting foreign direct investment would be one of the key benefits of the Atlantic Gateway. Gateway infrastructure would allow goods to move efficiently into and out of North America, making the Atlantic region attractive to new business opportunities.
- *Tourism* – The Canadian tourism industry operates in a highly competitive global environment that absolutely requires Canada to have a world-class and competitive transportation system. Development of the Atlantic Gateway will provide Canada with enhanced connections to tourism markets around the world.
- *Construction and infrastructure investment* – Investment in Atlantic Gateway infrastructure will support employment in construction, engineering, equipment manufacturing, raw materials, and other sectors.

While the development of detailed long range forecasts for the Atlantic Gateway fell outside the immediate scope of this assignment, traffic projections were developed by the consultants for all gateway opportunities in the region in order to determine the economic impact flowing from each opportunity.[6]

As noted earlier, an initial focus of the Atlantic Gateway initiative should be to increase container throughput at Atlantic Canadian container ports. In November 2006, CPCS Transcom Limited completed a study for the Province of Nova Scotia to assist in the development of a gateway

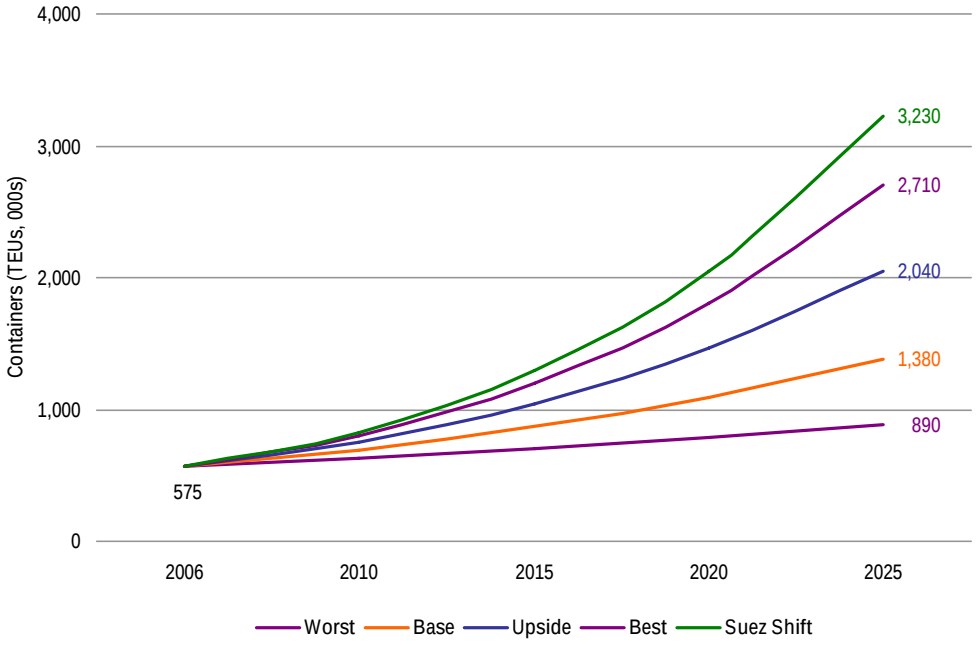
[5] A full-time position for one year constitutes a person year of employment (also known as a full-time equivalent). As some jobs are part-time or seasonal, these jobs have been converted to person years.

[6] The term forecast represents a prediction of future traffic activity based on detailed econometric modeling and trend analysis. The term projection is used to describe a less rigorous estimate of future traffic activity. For the purposes of this report, traffic projections have been developed by employing methodologies and forecast scenarios developed in previous studies and adjusting assumptions as required (e.g. adjusting the base year, extrapolating traffic activity beyond the intended forecast period).

strategy for the province.[7] In that report, Drewry Shipping compared container throughputs at northeast North American ports with a significant presence in the deep sea market.[8] They projected growth in the region in a range between 4.7% CAGR and 8.5% CAGR, with the caveat that more growth was possible if there was a fundamental shift in routings to the Suez Canal. By using Drewry's methodology and forecast scenarios as a starting point, using a base year of 2006, and amending the forecasting analysis to include container throughput activity at the Port of Halifax and the Port of Saint John[9] and extrapolating traffic activity out to 2025, the consultants developed projections for the Atlantic Gateway using five similar forecast scenarios. These were compared against those prepared by Ocean Shipping Consultants[10] and were found to be largely consistent.

The consultants estimate that the most probable level of container traffic activity for the Atlantic Gateway in 2025 will be a scenario of approximately 2.04 million TEUs (equivalent to the Drewry Upside Case scenario), which equates to a growth rate of 6.9% CAGR, most of which would take place between 2020 and 2025. This traffic activity is contingent upon a number of conditions being in place.

Figure ES-7: Atlantic Gateway Container Traffic Projections



Source – InterVISTAS and MariNova

[7] CPCS Transcom, Gateway Strategy Development Initiative, 2006.
[8] Only Halifax, Montréal, Boston, New York, Philadelphia, Baltimore, and Norfolk included.
[9] The Port of Halifax and the Port of Saint John were added because of their relatively high growth potential.
[10] Ocean Shipping Consultants, Containerport Markets in the Americas to 2020, 2005.

It is expected that this traffic will be derived from the following three market segments:

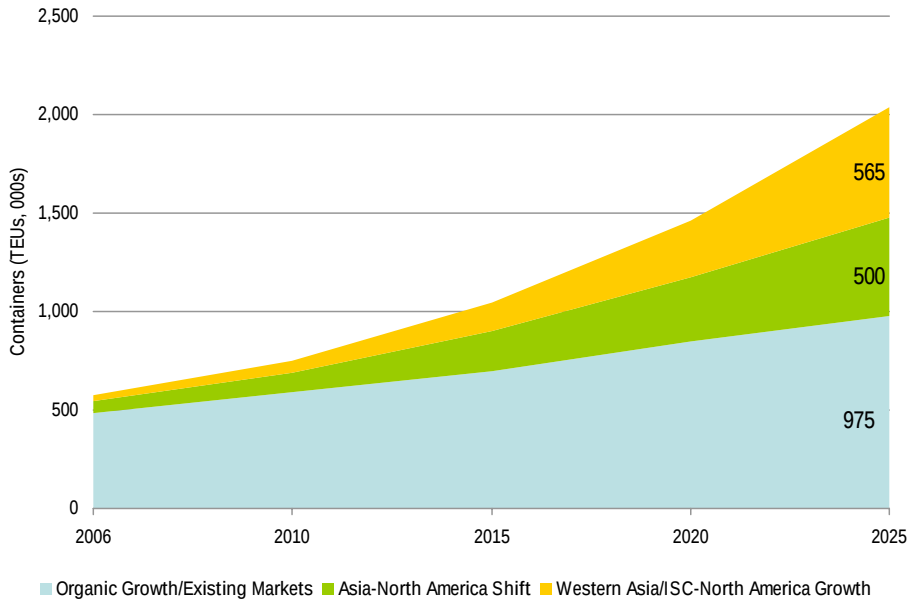
- *Organic growth from existing markets* – The Atlantic Gateway is already an established gateway to North America. Accordingly, it is anticipated that traffic to/from existing markets could increase from 514,000 TEUs in 2006 to approximately 975,000 TEUs in 2025.

- *Asia-North America traffic* – The Atlantic Gateway's participation in Asia-North America trade is nominal at the present time. With a solid value proposition, it is expected that the gateway could increase traffic on these trade lanes from 20,000 TEUs in 2006 to approximately 500,000 TEUs in 2025.

- *Western Asia/Indian Sub-Continent traffic* – As industrial production in Asia shifts west into countries like Malaysia, Vietnam, and Indonesia, as well as into India and Pakistan, East Coast North American ports will be geographically closer than their West Coast counterparts, and as a result, will be more attractive gateways for North American supply chain users. Currently, the Atlantic Gateway handles roughly 41,000 TEUs from the Indian Sub-Continent. By 2025, it is projected that the gateway could handle approximately 565,000 TEUs from this market region.

The projected traffic by market segment is summarized in the figure below.

Figure ES-8: Projected Atlantic Gateway Container Traffic by Market Segment



Source – InterVISTAS and MariNova

The Atlantic Gateway is also expected to facilitate increased traffic activity in other areas at the region's ports and airports. The Gateway's traffic projections for 2025, discussed in detail in Technical Appendix #1, are summarized below.

Figure ES-9: Atlantic Gateway Traffic Projections

Target	2005	2010	2015	2020	2025
Container Traffic (TEUs)	575,000[11]	751,000	1,048,000	1,463,000	2,040,000
Liquid Bulk (tonnes)	93,000,000[12]	97,000,000	101,000,000	105,000,000	110,000,000
Other Marine Cargo (tonnes)	23,000,000[13]	26,000,000	30,000,000	35,000,000	40,000,000
Cruise Passengers	408,000[14]	495,000	600,000	727,000	882,000
Air Passengers	5,463,000[15]	6,211,000	7,062,000	8,029,000	9,128,000
Air Cargo (tonnes)	53,100[16]	65,200	80,100	98,400	120,900

Source – InterVISTAS and MariNova

The economic impact of achieving the traffic projections for all Atlantic Gateway opportunities, including indirect and induced impacts, is estimated at 133,600 jobs, an increase of 61,100 (85%) over current levels.

Figure ES-10: Potential Economic Impact of 2025 Atlantic Gateway Traffic Projections in Atlantic Canada (in 2006 Dollars)

	Jobs	Person Years	Wages ($ millions)	GDP ($ millions)	Output ($ millions)
Direct	54,000	45,100	2,073	3,244	7,440
Indirect	28,900	24,200	801	1,498	3,922
Induced	38,300	32,000	1,208	1,794	3,934
Total Impact on Atlantic Canada	121,200	101,300	4,082	6,534	15,296
Rest of Canada	12,400	10,400	602	975	1,841
Increase from Current Levels	+ 61,300[17] (+85%)	+ 51,300 (+85%)	+ 2,118 (+82%)	+ 3,434 (+83%)	+ 7,691 (+82%)

Source – InterVISTAS

Over two thirds of the total economic impact derived from the Atlantic Gateway would be attributable to meeting the marine container projections.

[11] Base year includes only traffic handled in 2006 by Port of Halifax and Port of Saint John because of their high growth potential.
[12] Statistics Canada and individual port statistics.
[13] Statistics Canada and individual port statistics.
[14] Base year was calculated using 2005 passenger figures for traffic at Halifax (190,000 passengers), Saint John (90,000 passengers), Sydney (60,000 passengers), Charlottetown (23,000 passengers), and Newfoundland (45,000 passengers).
[15] Statistics Canada, Air Carrier Traffic at Canadian Airports, 2005. Includes traffic at airports in Halifax, St. John's, Moncton, Deer Lake, Charlottetown, Fredericton, Saint John, and Sydney.
[16] Statistics Canada, Air Carrier Traffic at Canadian Airports, 2005. Includes traffic at airports in Halifax, St. John's, Moncton, Deer Lake, Charlottetown, Fredericton, Saint John, and Sydney.
[17] Figure slightly higher due to rounding.

Figure ES-11: Source of the Atlantic Gateway Economic Impact Growth from Current to 2025 – Total Impact (Direct plus Indirect plus Induced) in Canada

	Jobs	Person Years	Wages ($ millions)	GDP ($ millions)	Output ($ millions)
Overall Increase	+ 61,100	+ 51,300	+ 2,118	+ 3,434	+7,691
Contribution of Gateway Components					
Containers	+ 41,600 (196%)	+ 35,100 (195%)	+ 1,486 (197%)	+ 2,341 (197%)	+ 5,172 (196%)
Liquid Bulk	+ 2,500 (13%)	+ 2,100 (13%)	+110 (13%)	+ 153 (13%)	+ 369 (13%)
Other Marine Cargo	+ 4,500 (50%)	+ 3,700 (50%)	+ 156 (51%)	+ 240 (51%)	+ 536 (51%)
Cruise Passengers	+ 1,700 (59%)	+ 1,300 (61%)	+ 56 (61%)	+ 76 (63%)	+ 180 (63%)
Air Passengers	+ 9,200 (51%)	+ 7,700 (51%)	+ 264 (51%)	+ 532 (51%)	+ 1,225 (51%)
Air Cargo	+ 1,600 (97%)	+ 1,400 (97%)	+46 (98%)	+ 92 (97%)	+ 209 (97%)
Total	+ 61,100 (+85%)	+ 51,300 (+85%)	+ 2,118 (+82%)	+ 3,434 (+83%)	+ 7,691 (+82%)

Source – InterVISTAS

Total tax impacts from the Gateway are estimated to reach $941 million by 2025, an increase of 83% over the current impact of the Atlantic Canada transportation system. The greatest tax contributors would be gateway employees and employers through the payment of personal income tax.

Figure ES-12: Estimated 2025 Tax Impact by Tax Contributor and Level of Government

	Federal ($ millions)	Provincial ($ millions)	Municipal ($ millions)	Total ($ millions)
Gateway Businesses	76.8	103.9	5.2	185.9
Gateway Employees/Employers	548.2	119.4	11.1	678.6
Air Passengers	69.1	7.5	-	76.5
Total Taxes Revenues Generated by the Atlantic Gateway	694.1	230.7	16.2	941.0

Source – InterVISTAS

Atlantic Gateway airports and cruise ports play an important role in facilitating tourism spending in the region. Visitors spend money on food and beverage, accommodation, retail, tours, ground transportation, as well as many other activities. All of this consumption spending contributes towards the total GDP of the region.

In 2006, over 5.5 million air passengers enplaned/deplaned in Atlantic Canada.[18] There were also 408,000 cruise passenger visits to ports in the Atlantic Provinces in 2005. This traffic supported 21,200 person years of employment and generated $1.48 billion in direct GDP.

By 2025, the number of air passengers and cruise passengers utilizing the Atlantic Gateway is expected to increase to 9.1 million and 882,000, respectively. Tourism, as a result of the Atlantic Gateway, would employ up to 39,600 people and generate $6.3 billion in economic output.

Figure ES-13: Potential Economic Impact of 2025 Tourism Spending Facilitated by the Atlantic Gateway[19,20]

	Person Years	Wages ($ millions)	GDP ($ millions)	Output ($ millions)
Direct	15,700	860	1,060	2,790
Indirect	11,100	410	870	1,850
Induced	12,800	470	820	1,680
Total Impact on Canada	39,600	1,740	2,750	6,320

Source – InterVISTAS

In the longer term, development of the Atlantic Gateway would likely require investment in infrastructure including ports, roads, railways, transload facilities, staging areas, etc. This capital investment would be spent on construction, equipment, and raw and finished materials, all of which support employment, GDP, economic output, and tax activity in the region.

In addition to the significant economic impacts of the Atlantic Gateway, there are broader social benefits that will be generated through gateway development, including:

- *Increased global profile* – The significant increase in both the magnitude and range of business and tourism activity identified above would increase the global profile of Atlantic Canada. This profile facilitates trade, investment, and cultural and social exchanges with other regions.

- *Increase connectivity* – The Atlantic Gateway would offer residents greater connectivity both within Atlantic Canada and to markets in Québec, Ontario, the U.S. Midwest, and other parts of the world (including India and Asia). Increased passenger connectivity would improve the quality of life for residents of the region by offering a broader range of transportation choices.

- *Enhance cultural links* – The Atlantic Gateway would enhance cultural linkages in the region. The improved inbound and outbound transportation linkages and resulting tourism activities can both strengthen existing ties and develop new cultural ties for the region.

[18] Statistics Canada, Air Carrier Traffic at Canadian Airports.
[19] Figures reported are for travelers whose purpose of visit is leisure or visiting friends/relatives only; business tourism is omitted in these totals.
[20] Economic figures are shown in 2005 Canadian Dollars.

Advancing Through a Coordinated Approach

No single entity can unilaterally address all of these interconnected activities. As a result, the Atlantic Gateway must be grounded with clearly defined roles and responsibilities between the public and private sectors and ensure that governments are accountable and investments are transparent. Governments will need to work with private stakeholders and industry and labour associations to promote Atlantic Canada as a strategic gateway and a pivotal link in the global transportation system for the economic benefit of Canada. In this regard, work is already underway by a number of private sector entities and industry associations to support the Atlantic Gateway initiative, amongst others, the Atlantic Provinces Chamber of Commerce, the Atlantic Canada Airports Association, and the Halifax Gateway Council.

The consultants recommend that the action plan for future gateway development contained in this report be considered by the Atlantic Gateway Federal-Provincial Officials Committee, which has been established as the primary forum for collaboration between governments in the development of the Atlantic Gateway. The Atlantic Gateway Federal-Provincial Officials Committee was formed in 2006 with the mandate to develop an Atlantic Gateway strategy that will benefit the Atlantic region and Canada. The Committee has identified a number of issues for further work, including a detailed assessment of the major transportation systems in the region that support international commerce activities and coordinating a marketing approach. Collaboration with the private sector and other stakeholders will further enhance the Committee's efforts.

1.0 Introduction

Background

Canada is a trading nation. Our economic growth and standard of living depend on the export and import of products and resources and transportation systems that enable us to move goods and people with world-class efficiency. However, the global economy is changing quickly with rapid growth in international trade and the establishment of new trade patterns. This phenomenon is being driven, in large part, by reductions in transportation costs, improved technology, and trade liberalization.

The rising volumes and shifting patterns of trade and travel are placing an entirely new set of demands on transportation and logistics systems. Much of this activity is being concentrated in key geographic locations, called 'gateways'. The key concept is connectivity; gateways serve as a meeting point for the various flows and integrating systems that support international commerce.

Gateways facilitate the movement of both goods *and* people. Containers are offloaded at a port onto rail cars and dry bulk flows by rail into ports for loading onto ships destined for international markets. Airports and cruise terminals also play a strategic role because passenger traffic reflects and drives, to a large measure, the level of development, business activity and tourism in the region.

However, gateways are not simply about facilitating the movement of goods, services, and people: they also add value to the supply chain. There are significant lost opportunity costs in inefficient transportation and logistics systems. Goods that sit on a dock waiting to be unloaded or reloaded add costs to the manufacturer and retailer. Banks do not lend capital for inventory that sits in a container, rather than on retail shelves or a factory floor. A gateway that provides efficient handling of goods or which moves passengers, from origin to destination reliably and in the least amount of time minimizes the cost of business, attracts more businesses and tourists, and creates a competitive advantage for its users.

Canadian gateways serve as a point of entry and exit for both Canadian and American goods to and from North America. However, the economic, social, environmental and cultural impact of gateways extend throughout Canada. As recognized in Advantage Canada, strategically located gateways and border crossings play a vital role in fostering Canada's competitiveness. Canada is well positioned by virtue of its geography and transportation infrastructure to take advantage of the tremendous trade opportunities associated with growing economies. Our east and west coast ports and connecting corridors offer competitive routes between China, India and North America's markets. Our national economy—and our ability to compete and succeed on the world stage—are highly dependent on the efficiency of ports such as Vancouver, Prince Rupert, Montréal, Saint John, Halifax and St. John's to access world markets.

Because of the increased importance of gateways and corridors to competitiveness in international commerce, the Government of Canada has made $1.08 billion available to the Asia Pacific Gateway and Corridor Initiative over the next seven years. Budget 2007 also created the National Gateways and Border Crossings Fund, to be awarded on a merit basis to improve the flow of goods and people between North America and the rest of the world. This fund will help

enhance trade-related infrastructure at key locations, such as gateways, highways, and major border crossings.

These recent announcements have reinforced that Canada's competitive position in international commerce would be strengthened with an efficient Atlantic Gateway, facilitating access between North American markets and emerging commercial opportunities in China, India, Thailand, Malaysia, Indonesia, Bangladesh, Pakistan, Singapore, and the Middle East. An Atlantic Gateway would integrate Atlantic Canadian transportation and logistics assets, energy ports, air passenger and cargo and cruise facilities into the national multi-model transportation framework of gateways and corridors, thereby servicing the projected growth in trade and passenger volumes throughout North America.

Purpose, Objectives and Methodology

With this objective in mind, Inter*VISTAS* Consulting Inc., MariNova Consulting Ltd., and TranSystems Corporation were retained by the Atlantic Canada Opportunities Agency to develop a business case for the Atlantic Gateway. The business case is not intended to identify specific areas of investment, which is the collective responsibility of the private sector, provincial and federal governments, and regional entities. The business case is intended to provide a rationale for governments in partnership with the private sector to dedicate resources to the development of an Atlantic Gateway strategy.

The objectives of the project were to:

- Set the global context;
- Clearly align the Atlantic Gateway Initiative with national and regional interests;
- Identify and evaluate gateway-related opportunities for Atlantic Canada in relation to container traffic, other marine commodities, air passenger and cargo traffic, and cruise traffic;
- Describe supportive legislative and regulatory environments that facilitate global commerce;
- Develop a strategy and action plan that will position Atlantic Canada to take maximum advantage of these opportunities; and
- Evaluate the impacts of the strategy.

During the course of this assignment, the consulting team interviewed a number of key organizations, including shippers, transportation companies, ports and airports, governments and several associations. These organizations are outlined in Figure 1-1.

Figure 1-1: Stakeholder Consultations

Ports and Airports		System Users	
Port of Halifax	Charlottetown Airport	Canadian Tire	HBC Logistics
Port of Saint John	Halifax Stanfield International Airport	Canadian Retail Shippers Association	Wal-Mart
Port of St. John's	Greater Moncton International Airport	Home Depot	Pier One
Port of Sydney	St. John's International Airport	Lowe's	Payless Shoes
Strait of Canso Superport	Port of Vancouver	Toyota	Ashley Furniture
		Sears	
Transportation Services		**Government and Associations**	
Ceres Terminals	NYK Line	Transport Canada	Tourism Industry Association of PEI
Macquarie Infrastructure	CN Rail	Atlantic Canada Cruise Association	Halifax Gateway Council
Atlantic Container Line	NB Southern Railway	Hospitality Newfoundland and Labrador	Province of Nova Scotia
CMA CGM	Consolidated FastFrate	Province of New Brunswick	Province of Newfoundland and Labrador
Hapag Lloyd	Midland Trucking	Province of Prince Edward Island	

Source – InterVISTAS

Workshops were also held with stakeholders on April 4 and 5, 2007, to discuss the opportunities and issues facing the Atlantic Gateway.

The consultants were guided by a Steering Committee that provided input and guidance for the assignment. The Committee also presented its work to a recently-established Atlantic Gateway Federal-Provincial Officials Committee representing the federal government and the four Atlantic Provinces.

2.0 Setting the Context

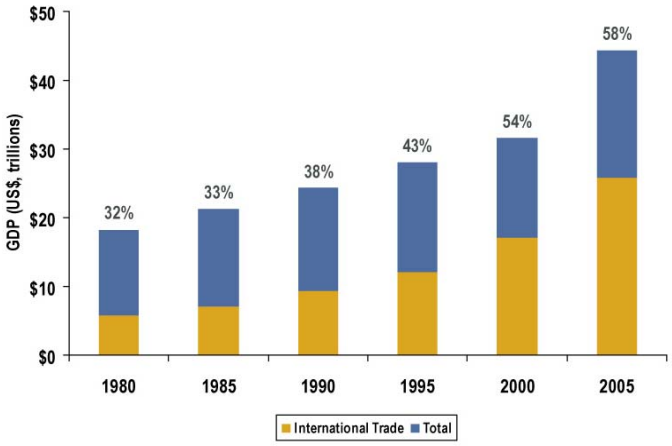
Global Economic Change

The dynamics of commerce are changing rapidly. Much of the world is well into an era of globalized collaboration, combining competitive and location advantage with trade partner agreements and new relationships between the public and private sectors. New trading blocs have been formed in North America (NAFTA), Europe (EU), Asia (ASEAN), and amongst developing countries (Cancun G-20). These blocs have created a globalized marketplace, supplied by an integrated global network and enabled by technological advancements. In this new marketplace, firms are competing on a global basis by providing higher quality products and higher levels of customer service at lower prices.

These open markets are generating unprecedented levels of economic activity, and the resultant derived demand for transportation services. The most widely used measure of global economic growth is GDP, and a strong correlation exists between world GDP, international trade, and the demand for transportation services.

Since the 1980s, a structural shift has occurred in the global economy, with an increased reliance by nations on international trade as a primary driver of their economic growth. As a result of this shift, world trade volume is now outpacing economic growth. The value of trade is now growing at around 2.5 times the rate of global GDP. This trend is not expected to change in the short to medium term.

Figure 2-1: International Trade as a % of GDP



Source – World Bank

The world economy is also undergoing other shifts. The relative economic significance of Western Europe and Japan has declined. At the same time, large emerging markets in other parts of the world, particularly Brazil, Russia, India, and especially China (more commonly referred to as the BRIC nations) are driving growth and shaping future investment, trade, and transportation demand.

For example, in 2005, China's GDP grew by 10% and its exports increased by 27%. China's entry into the World Trade Organization (WTO), its appetite for natural resources and raw

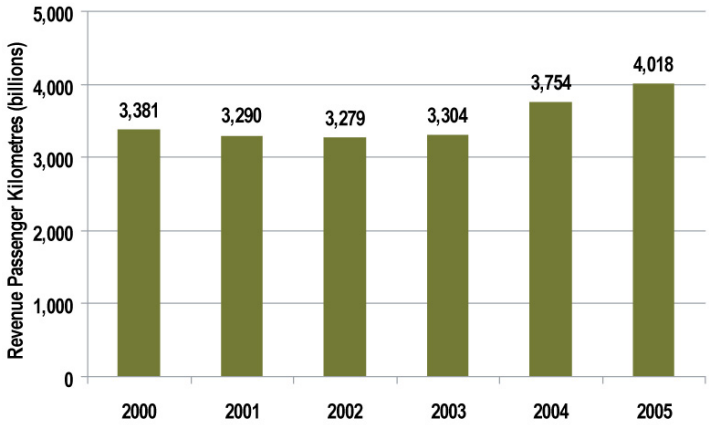
materials, and continuing urbanization, all point to continued trade growth and demand in the future. However, China is only one part of the Asian success story. Today, roughly 45% of world trade takes place with or in Asia, and countries such as India are also experiencing a sustained period of relatively high growth, while other economies such as Indonesia and South Korea continue to grow in importance. Canadian merchandise exports to South Korea, for example, increased by 23% in 2005. Indian GDP has been growing in excess of 9% for several years and is forecast for 8.5% growth in 2007. Also, India's one billion consumers offer a tremendous market for goods and services.

This economic activity and trade dynamics generate demand for intercontinental goods distribution. To accommodate this demand, shippers have two modal options – sea transport or air transport. Marine transportation is the more popular of the two modes by volume, and is fundamental to international trade because it represents the most practical and cost effective means of transporting large volumes of commodities and finished goods.

According to the United Nations, the total number of full containers shipped internationally is expected to grow to 177.6 million TEUs by 2015, up from an estimated 77.8 million TEUs in 2002.[21] Asia is by far the largest market for containers in the world and is expected to continue to grow rapidly. Through 2015, exceptional growth in container demand is expected in the sub-regions of Southeast Asia, Central and South America, South Europe and the Mediterranean as well as the Middle East and the Indian subcontinent.[22] In addition, the distribution of container volumes is expected to grow in Asia from 48.1% in 2002 to 56% in 2015.[23]

Another spin-off of increased global economic activity and trade is passenger travel. Since 2000, global air passenger traffic has increased from 3,381 billion Revenue Passenger Kilometres (RPKs) to 4,018 billion RPKs. As Figure 2-2 illustrates, air traffic has now fully recovered from the impacts of September 11, 2001.

Figure 2-2: Global Air Passenger Travel

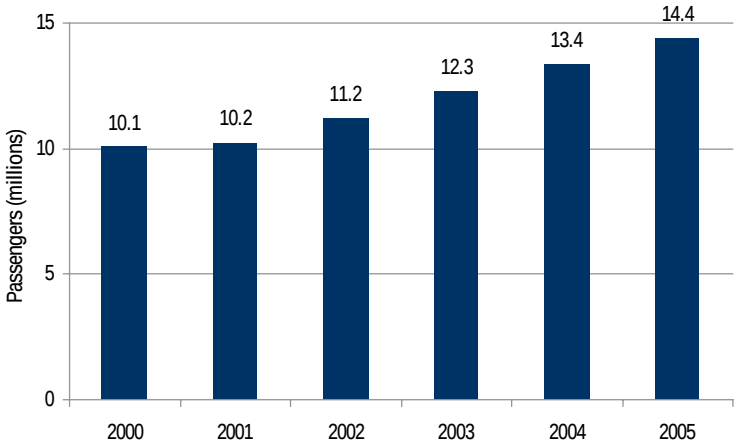


Source – Boeing

[21] UNESCAP, Regional Shipping and Port Development Strategies, 2005.
[22] Government of Canada, Trends in Containerization and Capacity at Container Ports.
[23] UNESCAP, Regional Shipping and Port Development Strategies, 2005.

Another benefactor of increased global economic activity has been the cruise industry. Over the past two decades, the cruise industry has emerged as one of the fastest growing segments of the travel and leisure industry. Since 2000, global demand has increased by over 40% to a record 14 million passengers worldwide in 2005. In Atlantic Canada, the growth between 1990 and 2005 has been almost 14% CAGR. Going forward, it is projected that global cruise traffic will increase to over 25 million passengers by 2015, an increase of 65%.

Figure 2-3: Global Cruise Traffic



Source – Cruise Lines International Association

The rising volumes of people, goods and information that flow around the world are placing new demands on the transportation and logistics systems.[24] Freight carriers and cruise lines, in an attempt to exploit economies of scale, are beginning to utilize bigger ships with increasing capacity. These bigger ships are producing the need for infrastructure improvements at origin, destination and hub ports and associated trade corridors. Much of the activity surrounding global transport and supply chains is being concentrated in key geographic locations, called 'gateways' and their connecting corridors. This creates exciting opportunities for gateways in North America, including Atlantic Canada, to play more significant roles in the provision of transportation services for the movement of goods and people.

The Gateway Concept in Atlantic Canada

There have been numerous studies examining the gateway concept in Atlantic Canada, with a particular focus on the opportunities in Nova Scotia. A study by Arthur D. Little Inc. in 1978, suggested that the Port of Halifax was already a gateway, serving a 'larger-than natural hinterland and its industry processe[d] and assemble[d] imported materials and semi-finished goods for export to other parts of North America…The expanded gateway concept, if successful, would expand the economic and industrial base of Nova Scotia and would yield enormous benefits for the entire base for the entire Atlantic Region.'[25]

In 1991, Booz Allen & Hamilton suggested that Nova Scotia's ports should increase their share of Canadian and U.S. markets, expand transhipment activity and attract new industry to the

[24] Michael Gallis & Associates, 2006. 'Transport Canada Framework for Shaping A Global Transportation Strategy'.
[25] Arthur D. Little Inc., Feasibility of Developing a Transportation Gateway for North America at Halifax, 1978.

province.[26] In 1996, the same firm suggested that a significant opportunity was unfolding if stakeholders built a new state-of-the-art container terminal in Halifax at Rockingham or Shearwater.[27] A 1998 Nova Scotia Voluntary Planning background document suggested that a 'new' National Policy should include the development of a sea and air gateway to North America at Halifax, with twinned highways up to 100 kms along highways 103 and 101, and at least as far as Port Hawkesbury along highway 104.[28]

In 2000, Bain and Company suggested to the Atlantic Institute of Market Studies (AIMS) that the port was competitive into and out of the Memphis market in the U.S. mid-west. The subsequent AIMS 'Portability' study advocated a much larger role for the private sector in Canadian port development.[29] The Economic Potential of HRM and Halifax Harbour Economic study of 2004 highlighted the importance of the transportation sector in the regional economy, as did the Halifax Gateway Economic Impact Study of 2005.[30]

The Halifax Gateway Council Strategic Plan of 2005 suggested four main initiatives: 1) marketing and business development; 2) infrastructure investment; 3) industrial development; 4) government policy (e.g. air liberalization.) It has subsequently narrowed its focus to 1) expansion of the transload sector; 2) air cargo facility business case; 3) cruise home port strategy.[31]

The 2006 Asia Pacific Foundation study[32] articulated the opportunity afforded by the growth in Asian trade, while the Government of Nova Scotia's 'Gateway Strategy Development Initiative' listed four priorities: 1) Suez trade; 2) the need for an air cargo facility; 3) a cruise home port strategy incorporating smaller regional ports; 4) highway infrastructure. The 2006 Atlantic Provinces Economic Council (APEC) study suggested the 'opportunity' to seize Asian cargo will be so short-lived with the likely expansion of the Panama Canal by 2015, short to medium term efforts at least, should be focused on filling the capacity presently existing at Halifax.[33] This view has been echoed by the Atlantic Institute for Market Studies (AIMS).[34]

Several other studies have focused on other aspects of the Gateway concept. Dr. Michael Ircha has suggested looking at other ports in the region, including Saint John, which is closer to inland markets and at the Strait of Canso, which has very deep water and greenfield sites for new terminal development.[35] Some private sector studies have reinforced these views. Other studies have examined the potential for short sea services both to the Great Lakes and down the eastern seaboard, as well as the concept of a 'gateway hub'.[36] Still others have examined

[26] Booz Allen & Hamilton, Inc., A Strategic Analysis of Nova Scotia's Trade facilities & Services, 1991.
[27] Booz Allen & Hamilton, The Greater Halifax Multi-Modal Transportation Study, 1996.
[28] Porter Dillon Limited, MariNova Consulting Ltd, and Canmac Economics, Input Towards a Multi-Modal Transportation Strategy for Nova Scotia: 1999-2020, 1998.
[29] Charles Cirtwill, Brian Lee Crowley, James Frost, Port-Ability: A Private Sector Strategy for the Port of Halifax, 2001.
[30] Gardner Pinfold Consulting Economists, MariNova Consulting Ltd., Cantwell & Company, Economic Potential of HRM and Halifax Harbour, 2004; InterVISTAS Consulting Inc., Halifax Gateway Council Economic Impact Study, 2005.
[31] InterVISTAS Consulting Inc., MariNova Consulting Ltd., Bermello-Ajamil & Partners Inc., Halifax Gateway Council Strategic Plan, 2005.
[32] Charles McMillan (Asia Pacific Foundation of Canada), Embracing the Future: The Atlantic Gateway and Canada's Trade Corridor, 2006.
[33] CPCS Transcom, Nova Scotia Gateway Initiative Strategy, 2006.
[34] Brian Lee Crowley and Stephen Kymlicka, Atlantica and Trends in World Trade: The Opportunities and the Barriers, 2006.
[35] Michael C. Ircha, PhD., Serving Tomorrow's Mega-Size Container Ships: The Canadian Solution, 2000; Michael C. Ircha, PhD., Characteristics of Tomorrow's Successful Port, 2006.
[36] MariNova Consulting Ltd., Short Sea Shipping Market Study, 2005; Mary R. Brooks, J. Richard Hodgson, James D. frost, Short Sea Shipping on the East Coast of North America: An Analysis of Opportunities and Issues, 2006; James D. Frost: The Development of a Gateway Hub at the Port of Halifax, 2002.

the potential for inland terminals at both Halifax and Moncton, as well as the potential to attract distribution centres and transload facilities to the region.[37]

In recent months, the Halifax Gateway Council completed the 'Halifax Air Cargo Market Study and Business Case'[38], and the Greater Halifax Partnership has completed a new study called 'Building the Container Transload Sector in Halifax'[39], both of which are gateway-related.

Figure 2-4: Recent Atlantic Gateway Related Studies

Year	Organization	Initiative
2007	Greater Halifax Partnership	Building the Container Transload Sector in Halifax
May 2007	Halifax Gateway Council	Halifax Air Cargo Market Study and Business Case
November 2006	Atlantic Provinces Economic Council	The Changing Global Economy: The Implications and Opportunities for Transportation in Atlantic Canada
November 2006	Government of Nova Scotia	Gateway Strategy Development Initiative
November 2006	Asia Pacific Foundation of Canada	Embracing the Future: The Atlantic Gateway and Canada's Trade Corridor
November 2006	Atlantic Institute of Logistics and Transportation	Canada East Inland Port – A Feasibility Study
April 2006	AIMS	Shipping Out: The Development of a Gateway Hub at the Port of Halifax
January 2006	AIMS	Characteristics of Tomorrow's Successful Port
2006	Dalhousie/MariNova	Short Sea Shipping on the East Coast of North America: An Analysis of Opportunities and Issues
2006	Ekistics Planning & Design	Debert Industrial Parks Concept Plan
2006	AIMS	Atlantica and Trends in World Trade: The Opportunities and the Barriers
2006	ShiftCentral	The Bangor-Saint John Trade Growth Corridor
November 2005	Halifax Gateway Council	Halifax Gateway Strategic Plan and Economic Impact Assessment
October 2005	Halifax Gateway Council	Building the Halifax Gateway: A New Vision for the Future
2005	MariNova Consulting Ltd.	Short Sea Shipping Market Study
2005	MariNova	Halifax Inland Terminal and Trucking Options Study
May 2004	Gardner Pinfold Consulting	Economic Potential of HRM and Halifax Harbour
2004	Greater Halifax Partnership	Greater Halifax Distribution Study
2001	AIMS	Port-Ability: A Private Sector Strategy for the Port of Halifax
2000	Michael C. Ircha	Serving Tomorrow's Mega-Size Container Ships: The Canadian Solution

In summary, the literature has identified a number of significant opportunities, including:

- Increased container traffic for Atlantic Canadian ports through the Suez Canal because of:
  - A shift in manufacturing activity within Asia towards Western Asia and the Indian subcontinent, and potentially Africa in the longer term; and

[37] MariNova Consulting Ltd., Greater Halifax Distribution Study, Greater Halifax Partnership, 2004: MariNova Consulting Ltd., Halifax Inland Terminal and Trucking Options Study, 2005; ADI Consulting Ltd., Canada East Inland Port, Transportation and Logistics Centre of Excellence, 2006; Ekistics Planning & Design, Debert Industrial Parks Concept Plan, Colchester Regional Development Agency, 2006; ShiftCentral, The Bangor-Saint John Trade Growth Corridor, Foundation for the Atlantica International Northeast Economic Region, 2006.
[38] Jacobs Consultancy, Halifax Air Cargo Market Study and Business Case, 2007.
[39] MariNova Consulting Ltd and Partners, Building the Container Transload Sector in Halifax, 2007.

  - A strategy by several Canadian importers to establish secondary supply chains (diverting some traffic from congested West Coast North America ports) in the short to medium term to improve the cost effectiveness and reliability of their supply chains and to manage risk.
- Potential for increased exports in various commodities, including energy, forest products, tires, blueberries, french fries and seafood;
- Potential for increased trade with emerging former communist countries in Eastern Europe;
- Growth in international air travel and tourism; and
- Growth in cruise activity (both port-of-call and niche homeport operations).

These reports confirm that developing Canada's Atlantic Gateway would yield important benefits for the region and benefit shippers and travellers across the country as a whole, including:

- Increased traffic volumes through Atlantic Canada could create the critical mass required to reduce transport costs and create new service opportunities, which in turn, could open up new markets for Canada's exporters;
- Additional cargo and passenger traffic would generate significant economic benefits and high-paying jobs in Atlantic Canadian communities; and
- Tax revenues would increase for the region's governments.

North American / Canadian Policy Agendas

The development of Canada's Atlantic Gateway is well aligned with other North American and Canadian policy agendas.

North American Competitiveness

In March, 2005, heads of government from Canada, the U.S. and Mexico met in Texas for a summit of North American leaders. The principle outcome of this meeting was the launch of the Security and Prosperity Partnership of North America. From this, the North American Competitiveness Council was created in 2006. The Council comprises 30 senior private sector representatives, 10 from each country, and has a mandate to provide governments with recommendations on broad issues such as border facilitation and regulation, as well as the competitiveness of key sectors including automotive, transportation, manufacturing and services. The Atlantic Gateway would advance this agenda by facilitating border efficiency and international competitiveness in the transportation and manufacturing sectors.

Global Commerce Strategy

The Global Commerce Strategy (GCS), announced in *Advantage Canada,* is a new approach to international trade policy through a comprehensive strategy to ensure that Canadian businesses can fully participate in global market opportunities. The strategy outlines the role of openness to trade, investment and technology in global commerce for enhancing regional and national competitiveness. The strategy consists of three elements: supporting an expansion of our bilateral trade network; strengthening our competitive position in the United States market; and extending our reach to new markets, starting with Asia.

In order to best position Canada as the location of choice for international business, the GCS notes that a number of focused and ambitious initiatives are needed to integrate investment and innovation. These could include gateways and corridors at nationally significant locations.

National Policy Framework for Strategic Gateways and Trade Corridors

Budget 2007 announced a $2.1 billion National Gateway and Border Crossings Fund to be allocated on a merit basis over the next seven years. As part of its overall approach to global competitiveness, the federal government is developing a long-term strategy to strengthen Canada's position in global commerce by further developing and exploiting major trade gateways and corridors. The approach focuses on strategic action to take advantage of the convergence of opportunities related to international commerce, transportation and geography. The Government of Canada's vision is to advance competitiveness by efficient, safe, secure and sustainable transport systems supporting the country's success in a rapidly changing world of international commerce.

Canada's Infrastructure Advantage

The federal government is making a serious commitment to address infrastructure shortfalls. Budget 2007 saw an unprecedented amount of money allocated towards a new long term plan for infrastructure. These commitments, totalling $33 billion, will support investments in the core national highway system, trade-related infrastructure including gateways, roads, highways and other transportation facilities and other large-scale projects such as public transit and sewage treatment infrastructure.

The Government of Canada has recognized the importance of gateways in facilitating the movement of people and goods efficiently to markets. Budget 2007 outlines a comprehensive long-term plan for infrastructure that includes a specific reference to gateways in the west and east. Additional funding was allocated for the development of the APGCI. Advantage Canada identified the Windsor-Detroit border crossing and the Atlantic Gateway as priorities for future development and reference was made to the importance of Montréal, Saint John, and Halifax as important trade terminuses.

Security & Border Management

Canada has one of the world's safest and most secure transportation systems and one of the most secure and efficient border programs. The federal government has indicated that efficient and strong border security is essential for ensuring that goods and services reach global markets. In Advantage Canada, the federal government notes that ensuring the efficiency and security of our U.S. borders is essential for trade.

Environmental Protection

The federal government has made a clean, healthy environment and sustainable development central elements of both Advantage Canada and Budget 2007. Furthermore, embracing the view that economic growth is inseparable from environmental sustainability, investments in roads, highways, airports, ports, bridges, and border crossings will be measured against their potential to strengthen the economy as well as their impact on the environment to ensure a balance between consumption and conservation. The Atlantic Gateway would advance this agenda by requiring stringent environmental assessments prior to any development and by employing transportation efficiencies such as short sea shipping and the increased use of rail.

3.0 Opportunity Assessment

Global economic growth and the associated shifts in international trade are creating exciting opportunities for North American gateways to play more significant roles in the provision of transportation services for the movement of goods and people. Potential areas of opportunity for the Atlantic Gateway include an increased share of:

- Asia-North America marine container traffic;
- Non- container cargo traffic (in particular energy products);
- Air passengers and cargo; and
- Cruise passengers.

Additional detail on each of these opportunity areas is provided below and also in Technical Appendix #1.

Atlantic Transportation System

The transportation system in Atlantic Canada consists of a complex array of infrastructure and services (a more detailed overview of the region's key network components – port system, road and rail systems, airports and ferry systems – is provided in Technical Appendix #1). This transportation system operates as an integrated network of marine, air, road and rail systems providing strong connections to global markets on one end, and to regional, national and U.S. manufacturers and consumers on the other. This system facilitates trade, mobility and security and is a real economic engine for Canada.

There are numerous entry points into the network. Marine ports throughout the region each have unique roles in handling containers, general cargo, liquid bulk, dry bulk and cruise passengers. Container terminals in Halifax, St, John's, Saint John and Corner Brook receive and export machinery, forest products, materials and food products. Energy ports at Port Hawkesbury, Come By Chance, and Saint John receive crude oil and other petroleum products before refining them for export, while Whiffen Head serves as a transshipment terminal for Canadian crude oil to international markets.

Cruise terminals in Halifax, Saint John, Charlottetown, Sydney, St. John's and Corner Brook attract an increasing number of tourists to each of the four Atlantic Provinces, while a comprehensive array of airports throughout the region serve both business and casual passengers and cargo. Other key entry points include border crossings at Woodstock and St. Stephen, and New England ferry connections at Yarmouth, which facilitate the efficient flow of passenger vehicles and cargo to and from the U.S.

Upon entry, goods and people flow easily through Atlantic Canada's transportation corridors to Central Canadian and U.S. markets. An extensive rail network anchored by CN and supported by five short line railways move containers, forestry products, chemicals, ore, coal, minerals and other manufactured products from manufacturers to market. An extensive highway network, including 3,100 km of the National Highway System, serves the region. Atlantic Canada also has the nation's most extensive short sea shipping network providing an environmentally sustainable transportation option and service to system users.

The transportation system is integrated by multimodal services at key connection points. Intermodal services in Halifax and Saint John move containers off and on vessels, and off and on to rail cars as expeditiously as possible. Rail corridors seamlessly connect the region's products to Montréal, Toronto, Chicago and Memphis. Trucks enter or leave the region's ports and flow through the highway system to border crossings or central Canada. Other commodities are transloaded, warehoused and distributed prior to forward shipment, adding value to the logistics chain.

Canada is served by an extensive transportation and logistics system in Atlantic Canada. It does more than move goods and passengers, provide direct employment and produce GDP and tax revenue. The system operates as an integrated network, creating national efficiencies and generating business development, tourism, exports and internal trade, thereby adding significant value to national commerce.

Market Segments

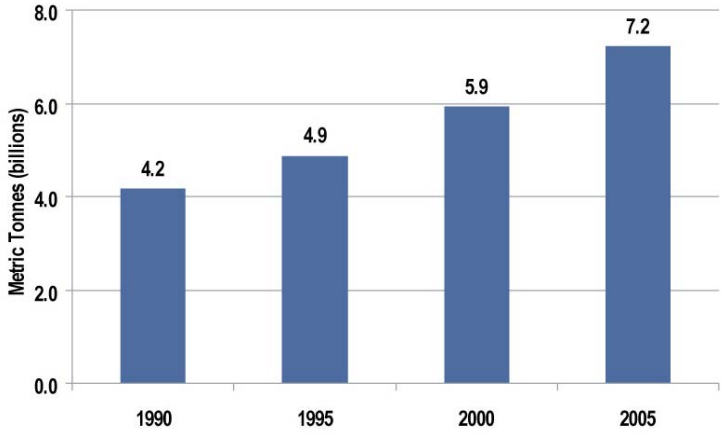
Containers

Global Context

Global economic integration, combined with expanding Asian economies, has contributed to a rapid growth in world trade. Over the last 15 years, container shipping has emerged as the principal means by which products are moved around the globe. Between 1994 and 2004, container activity increased an average of 8.3% per year (over two and half times global GDP). This growth is expected to continue in the future and forecasts call for container traffic to increase by an average of 5% to 6% per year over the next 20 years (2005 to 2025).

As illustrated in Figure 3-1, world maritime trade has grown steadily over the last 15 years and topped 7.2 billion metric tonnes in 2005.

Figure 3-1: World Maritime Trade

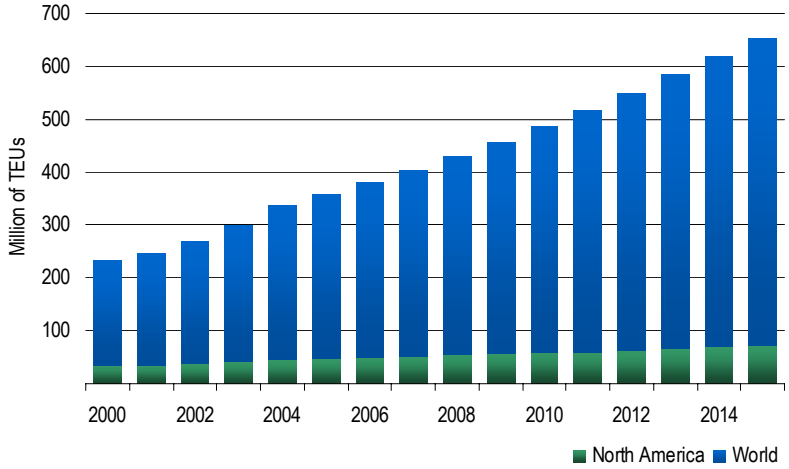


Source – Clarkson Research

Containerized trade is the fastest growing marine sector today, and coupled with the expansion of global manufacturing in Asia, has led to explosive growth in trade between North America and Asia. World container trade is projected to increase from 355 million TEUs in 2005 to 650

million TEUs by 2015. In the past five years, container trade in North America has increased at a compound annual growth rate of 6.9%, reaching 48 million TEUs in 2005. By 2015, North American container trade is predicted to soar by 50% to 72 million TEUs. As imports to North America continue to increase, freight volumes are expected to double and even triple at the busiest ports by 2020.

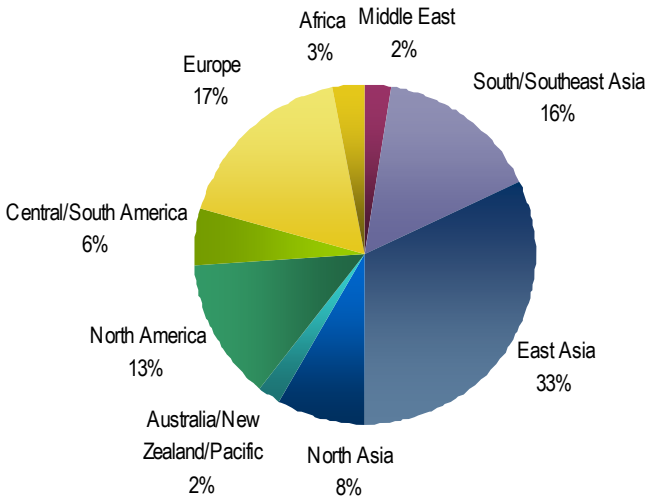
Figure 3-2: Global and North America Growth in Containerized Trade



Source – TransSystems and Containerization International

Currently, more than 60% of all North American container trade is with Asia, predominantly China and Hong Kong. Container traffic to and from Asia is expected to grow at a higher rate than the world average in the next decade. China is expected to account for the majority of the expansion, as it has in the last five years, with solid growth expected in South Asia as well. Overall, Asia's share of containerized exports is expected to rise to 64% by 2015, while its share of containerized imports is expected to rise to 53%.

Figure 3-3: Estimated Distribution of Container Traffic in 2015 (Exports and Imports)

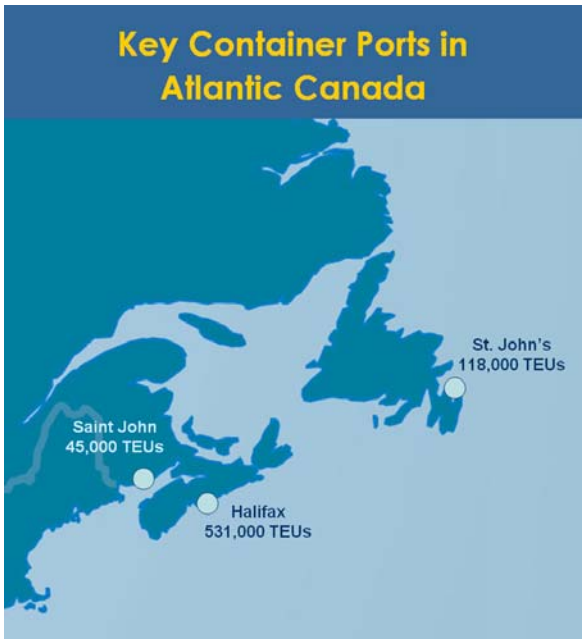


Source – UNESCAP

Regional Context

The key container assets in Atlantic Canada are the Port of Halifax (531,000 TEUs), the Port of St. John's (118,000 TEUs), and the Port of Saint John (45,000 TEUs).[40] Some container activity also takes place at smaller ports in the region such as the Port of Corner Brook (approximately 7,500 TEUs) and the Port of Argentia (approximately 2,500 TEUs).[41] In addition, plans were recently announced for the construction of a new US$325 million container terminal at Melford, Nova Scotia on the Strait of Canso with a projected opening date of 2010 for Phase I.

Figure 3-4: Key Container Ports in Atlantic Canada (2006)

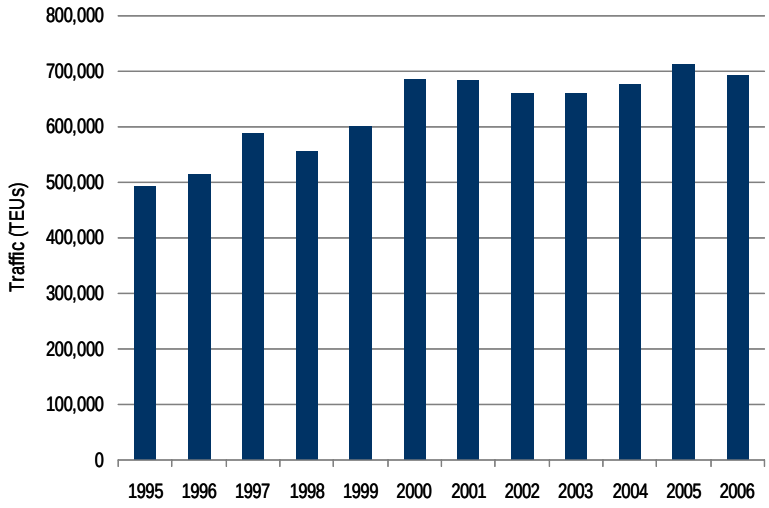


Source – Individual port authorities

Container activity at these primary container ports has increased from approximately 492,000 TEUs in 1995 to over 693,000 TEUs in 2006, which represents a compound annual growth rate of 3.2%. By comparison, world GDP growth averaged 2.9% per year over the same period. These ports have successfully developed a niche role in the international container marketplace. While this is a positive indicator, it should be noted, however, that traffic at these key ports has essentially flat-lined over the past six years due to changing service patterns and the loss of feeder services to other regions.

[40] www.ci-online.co.uk.
[41] Statistics Canada.

Figure 3-5: Container Traffic at Key Atlantic Canada Ports



Notes – Includes Halifax, St. John's and Saint John
Source – Statistics Canada

Going forward, container growth in Atlantic Canada is expected to be driven by the following factors:

- Organic growth in markets presently served by Atlantic Canadian ports;
- Increased Asia-North America traffic via the Suez Canal; and
- Increased Western Asia/India subcontinent-North America traffic (due to shifts in production location).

A more detailed analysis is provided in Section 4.

Non-Container Marine Cargo

Global Context

Growth in liquid bulk traffic has been relatively stagnant over the past 25 years, averaging increases of only 0.6% per year since 1980. This low growth rate is a reflection of increasing energy efficiency during this period brought about in large part by the increase in energy prices in the late 1970s and early 1980s and technological innovations. Going forward, liquid bulk traffic is expected to grow at levels commensurate with the rates experienced over the last quarter century (0.6% per year).

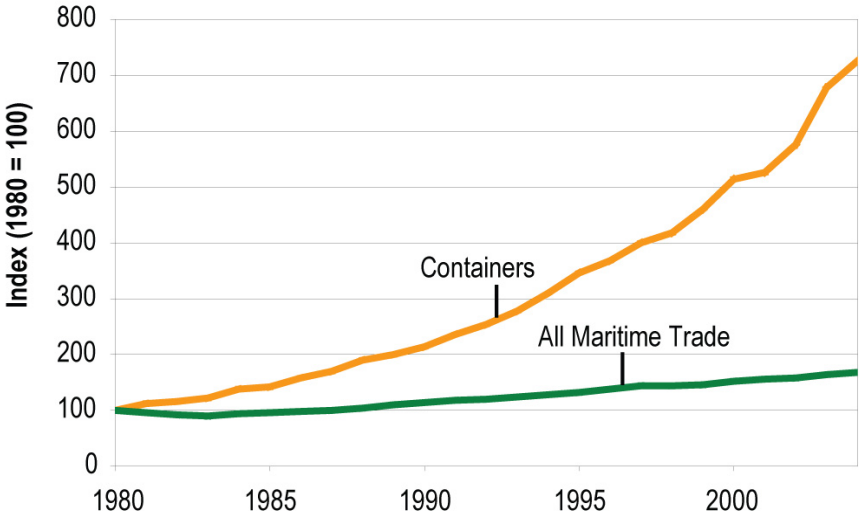
Key bulk cargoes such as iron ore, coal and grain have grown at moderate levels over the past 25 years, averaging 2.4% per year since 1980 (or slightly lower than global GDP). Going forward, the growth rates for dry bulk cargoes are projected to remain fairly constant at 2.4% per year between 2005 and 2025.

More robust growth has been experienced in other marine cargoes, which include minor bulks and break-bulk general cargo. In longer periods, these have outpaced GDP by about 1% per year. The category is dominated by general cargoes, such as autos, refrigerated products and

forest products. The latter two categories have been affected by the incursion of container lines into these traditional break bulk and neo-bulk trades.

Figure 3-6 illustrates how world maritime trade has evolved between 1980 and 2002. During this period, container trade increased by 8.5% per year while general marine cargoes increased by 3.5% per year.

Figure 3-6: World Maritime Trade



Source - UNESCAP

World oil tanker fleet capacity increased from 138 million gross tons in 1992 to 180 million gross tons in 2005, corresponding to an average growth rate of 2.1% per annum over the period. In the case of dry bulk carriers, the world fleet increased at an average rate of 2.1%, from 133 million gross tons in 1992 to 170 million gross tons in 2004.

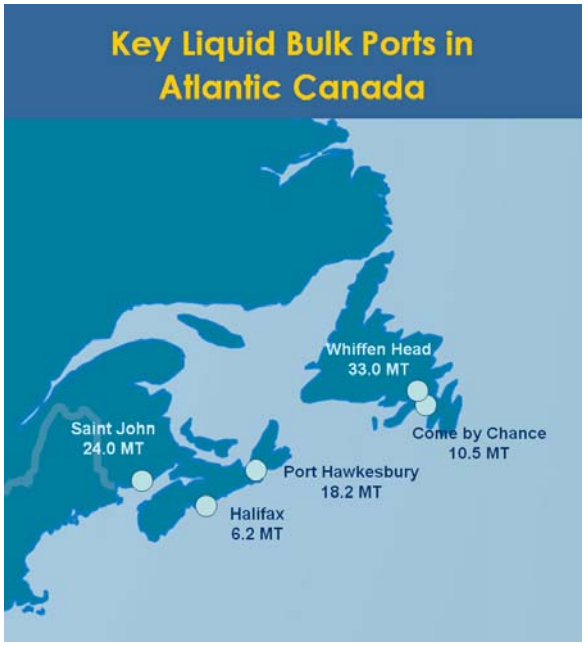
The average age of the world's merchant fleet increased slightly from 18.0 to 19.1 years between 1998 and 2004. The increase in average age affected most vessel classes, but was most pronounced in general cargo and passenger vessels. In each of these classes, the average age increased by roughly two years during this period. By contrast, the average age of dry bulk carriers in the merchant fleet increased by only 0.5 years, while the average age of container ships actually fell by 0.1 years. This trend will likely continue in the next few years, as 50 per cent additional capacity will be added to the world's container ship fleet by 2010.

The operational productivity of the world merchant fleet between 1990 and 2004, measured in tons of cargo per deadweight ton of capacity, has increased by some 24% since 1990. The majority of this improvement was achieved during the strong surge in world seaborne trade in 1997-1998, when the demand for shipping far outstripped the expansion in capacity.

Regional Context

The key liquid bulk ports in Atlantic Canada are the Port of Saint John (24.0 million tonnes), Port Hawkesbury (18.2 million tonnes), Whiffen Head (33.0 million tonnes), Come by Chance (10.5 million tonnes), and the Port of Halifax (6.2 million tonnes).

Figure 3-7: Key Liquid Bulk Ports in Atlantic Canada (2003)

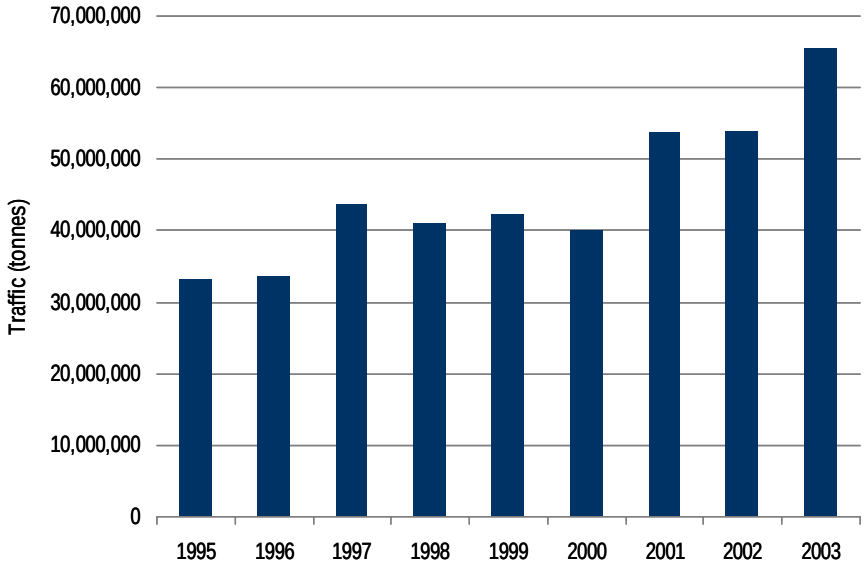


Source – Individual port authorities

As a whole, the region is well established in the liquid bulk market due to the significant quantities of energy products that move to and from the region. Liquid bulk activity in Atlantic Canada's ports has nearly doubled in recent years, growing from 33.2 million tonnes in 1995 to 65.6 million tonnes in 2003.[42] This represents a compound annual growth rate of 8.9% and can be attributed to the significant growth in offshore oil and gas production in Newfoundland, as well as capacity increases at the Irving Oil refinery in Saint John.

[42] Includes liquid bulk traffic data contained in Statistics Canada's Shipping in Canada (2003) publication. Unfortunately, the publication does not capture all liquid bulk activity in Atlantic Canada.

Figure 3-8: Liquid Bulk Traffic at Atlantic Canada Ports



Note – Includes liquid bulk traffic data contained in Statistics Canada's Shipping in Canada (2003) publication only
Source – Statistics Canada

In the future, liquid bulk growth in Atlantic Canada is expected to be driven by the following factors:

- Growth of crude and refined petroleum products (import/export) from increased domestic production off the coast of Newfoundland and from possible increases in refining capacity at Saint John; and
- Increased liquefied natural gas (LNG) operations (import/distribution).

Atlantic Canada ports also handle other marine cargoes.[43] The key ports in Atlantic Canada are Port Hawkesbury (4.7 million tonnes), Halifax (3.2 million tonnes), Belledune (2.2 million tonnes), Sydney (2.1 million tonnes), Bayside (1.7 million tonnes), Saint John (1.6 million tonnes), and Corner Brook (2.2 million tonnes).

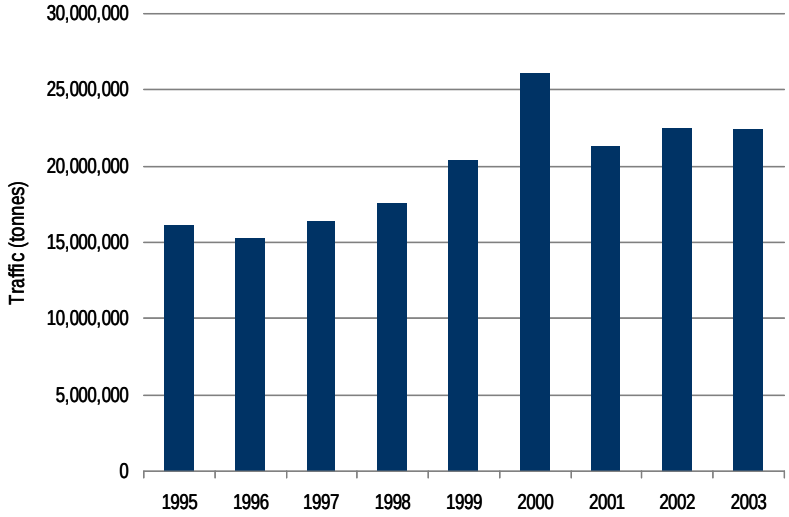
[43] Tonnage figures are total marine tonnage less liquid bulk tonnage and containerized tonnage.

Figure 3-9: Key Other Marine Cargo Ports in Atlantic Canada (2003)

Source – Individual port authorities

As in the case of liquid bulk, Atlantic Canada enjoys a well established position in other marine commodities. Tonnage at the region's ports increased from approximately 16.2 million tonnes in 1995 to 22.4 million tonnes in 2003. This represents a compound annual growth rate of 4.2% per year. Typical dry bulk traffic consists of items such as gypsum, stone, sand, gravel and crushed stone, with newsprint amongst other break bulk commodities. Not surprisingly, the movement of these goods is impacted significantly by conditions in the U.S. housing market. Ro-Ro facilities in Saint John, Halifax, and St. John's also attract an increasing amount of marine traffic.

Figure 3-10: Other Marine Traffic at Atlantic Canada Ports[44]



Source – Statistics Canada

In the future, growth in Atlantic Canada is expected to be driven primarily by organic growth in existing markets.

Air Passengers

Global Context

Global air passenger traffic increased 4.8% annually between 1985 and 2005 (roughly one and a half times global GDP). Since 2000, global air passenger traffic has increased from 3,381 billion RPKs to 4,018 billion RPKs. Going forward, air passenger traffic volume is expected to grow at an average of 4.9% per year between 2005 and 2025.

The air passenger traffic distribution by region is summarized in the figure below. Transatlantic and transpacific travel are the second and third most important intercontinental air passenger markets respectively, generating over 27% of total global passenger activity in 2005.

[44] Traffic figures represent total marine tonnage less liquid bulk tonnage and containerized tonnage.

Figure 3-11: Distribution of Global Air Passenger Traffic by Region

World Air Passenger Traffic Traffic
(RPKs, billions)

	2005	%
Transpacific	240.0	10.3%
Far East-Europe	270.0	11.6%
Transatlantic	390.0	16.7%
Europe-Latin America	150.0	6.4%
Rest of World	1280.0	54.9%
Total	**2330.0**	**100.0%**

Source – Boeing

Air access is a key factor in building tourism destinations. However, airlines continue to face a very difficult operating environment. The result is that the key airlines, including both Canadian and U.S. carriers, have been very slow to increase capacity in most markets.

A positive development for tourism destinations has been the emergence and growth of low cost carriers. These airlines are gaining a stronger foothold in the industry, including here in Canada. In 1990, for example, the market share (origin and destination passengers) of low cost carriers in the U.S. was only 7%. Today, their share has increased to over 25%. This trend is expected to continue, and some experts believe that low cost carriers could account for 50% of the U.S. market by 2010.

Regional Context

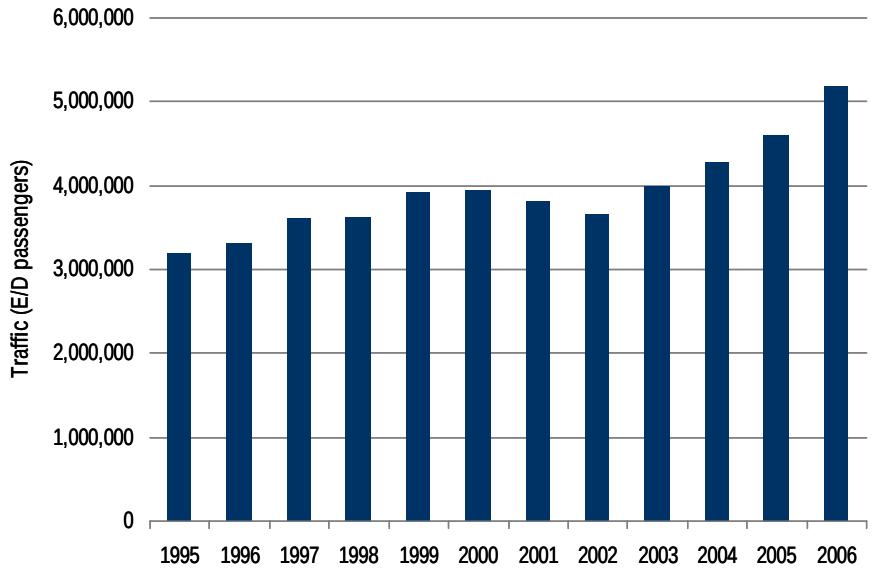
The key passenger airports in Atlantic Canada are Halifax Stanfield International Airport (3.4 million passengers), St. John's International Airport (1.2 million passengers), and Greater Moncton International Airport (559,000 passengers).

Figure 3-12: Key Passenger Airports in Atlantic Canada (2006)

Source – Individual airport authorities

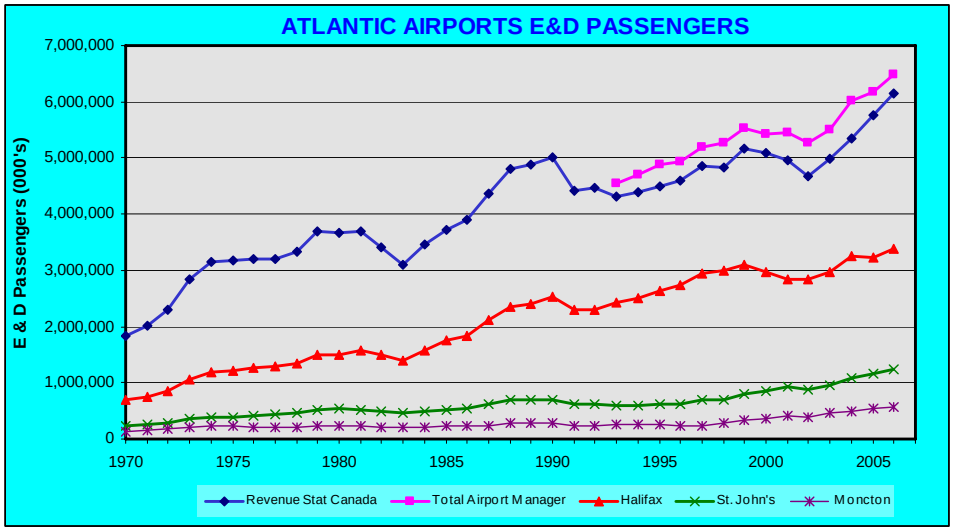
Passenger traffic activity at these primary Atlantic Canada airports has increased steadily over the past decade from 3.5 million passengers in 1995 to 5.2 million passengers in 2006. This represents a compound annual growth rate of 3.6%. Aviation growth during this period has been driven largely by an increase in low cost air service and the introduction of regional jet service to smaller airports. The region's largest airport (Halifax) has successfully established itself as a regional hub, but is less established in the global marketplace as an international gateway.

Figure 3-13: Passenger Traffic at Key Atlantic Canada Airports



Notes – Includes Halifax, St. John's and Moncton
Source – Statistics Canada

Figure 3-14: Annual E&D Passenger Activity for all Atlantic Region Airports[45]



Source – Atlantic Canada Airports Association

Stakeholders agree that Canada's new Blue Sky international air policy is a key step in the right direction of improving access for air carriers to Canada's gateway airports. They applaud the Government of Canada's approach to air service negotiations which has moved from an incremental one to a more proactive stance of seeking more 'open skies'-type agreements, when in the overall interest of the country. All that remains is for more of these open skies agreements to be signed with key markets.

Going forward, air passenger traffic growth in the Atlantic Canada is expected to be driven by the following factors:

- Organic market growth in existing markets;
- Leveraging U.S. pre-clearance at the Halifax Regional hub;
- Direct service to other regional airports;
- Increased tourism/cruise homeport operations; and
- Exploiting opportunities made available by Canada's new Blue Sky international air policy.

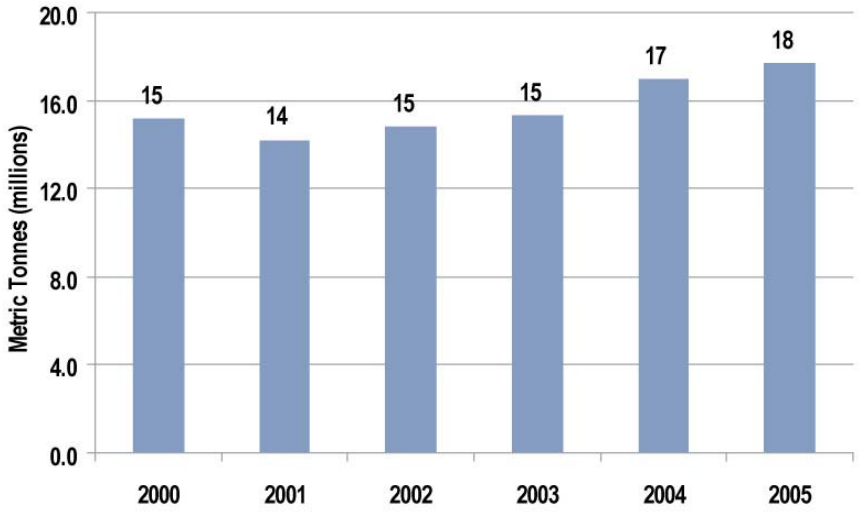
[45] The graph shows historical annual enplaned and deplaned (E&D) passenger activity for all Atlantic region airports. The historical numbers for Halifax, St. John's and Moncton are provided just to show relative market share fo the three busiest airports in the region. The historical numbers received from Statistics Canada publications are 'Revenue E&D Passengers' dating back to 1970. The airport manager's numbers are those numbers reported to Tranport Canada's regional office on a voluntary basis monthly since the early 1990s. These are regarded as preliminary with no official editing/validation. They include non-revenue passengers, which are equally important for planning purposes. To make numbers comparable there is some passenger traffic included in the historical total of the airport manager's numbers that are not part of the monthly Summary Report (ie Labrador Coast traffic, Churchill Falls and other Airports that no longer have scheduled traffic).

Air Cargo

Global Context

Air cargo represents the other part of the intercontinental goods distribution network. While the primary benefit of maritime transportation is lower costs, the benefits of air transportation are speed and reliability. Since 2000, world intercontinental air cargo traffic levels have increased continuously, reaching 18 billion metric tonnes in 2005. The only exception to continuous growth was in 2001 which was negatively affected by September 11.

Figure 3-15: World Intercontinental Air Cargo Traffic



Source – MergeGlobal

Global air cargo traffic increased 5.1% per year between 1985 and 2005 (just under two times global GDP). Going forward, air cargo growth is expected to grow at an average of 6.1% per year between 2005 and 2025.

Transpacific and transatlantic air cargo traffic are the third and fourth largest international air cargo markets in the world, generating 18.0% and 13.3%, respectively, of global air cargo traffic.[46]

[46] MergeGlobal World Air Cargo Forecast, 2006.

Figure 3-16: World Intercontinental Air Cargo by Region

World Intercontinental Air Cargo Traffic
(tonnes, millions)

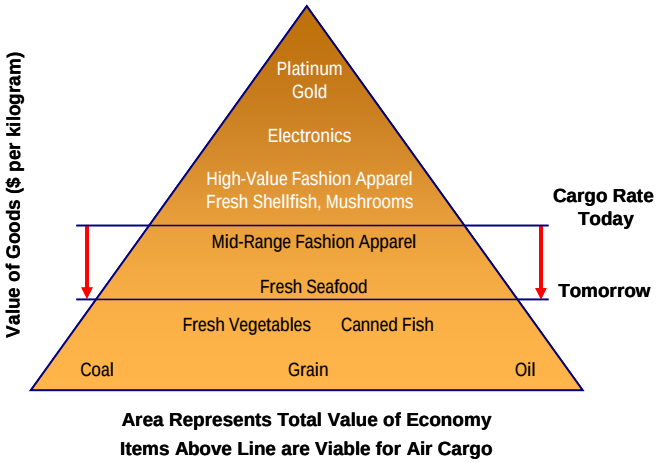
	2005	%
Transpacific	3.2	18.0%
Far East-Europe	3.9	22.0%
Transatlantic	2.4	13.3%
Intra-Asia	3.9	21.7%
Rest of World	4.4	25.0%
Total	**17.7**	**100.0%**

Source – MergeGlobal

Since 1970, air cargo (in traffic volume) has grown at over three times the rate of the world economy (GDP), rates which are greater than those for passenger transport. Continued strong growth is anticipated in international air cargo volumes, necessitating greater use of freighters which are less tied to key passenger markets. Domestic air cargo is also anticipated to continue growing, albeit at lower rates.

The growth in air cargo has been driven by declining costs and changing logistics patterns and practices. Boeing reports that air cargo costs have declined by 2.4% per annum since 1985, resulting in a shift from shipping only high-value products by air to mid-value-range goods such as fresh seafood and fashion apparel. A continued reduction in freight rates will result in an ever-broadening the scope of air-compatible shipments, making more Atlantic Canada products viable users of the air cargo market.

Figure 3-17: Air Cargo Value Pyramid



Source – Boeing

A number of trends in aircraft usage may also impact Atlantic Gateway air cargo traffic. The increasing reliance on narrow-body and regional jet service has had a detrimental impact on cargo lift. While these aircraft have been effective in replacing larger jets in selected passenger markets, their limited cargo capacity usually results in a loss of cargo lift for the impacted communities. Other trends include the likely replacement of the Canadian domestic workhorse, the Boeing 727 freighter, with the 757 freighter.

The increasing range of new freighters has also lessened the need for multiple stops. For example, the new Boeing 777 freighter will be able to travel 5,200 nautical miles with a full load of 100 tonnes, while the Airbus A380 freighter will be able to travel 5,620 nautical miles with a full load of 150 tonnes. In contrast, the longest range freighter today, the Boeing 747-400 freighter, can only travel 4,300 nautical miles with a 112 tonne load. This trend will mean that larger all-cargo carriers are likely to service a limited number of airports in the region where a critical mass of cargo exists.

Continued liberalization of international air agreements will facilitate innovative new cargo services, particularly those predicated on fifth freedom rights (the right to enplane traffic at one foreign point and deplane it in another foreign point as part of continuous operation also serving the airline's homeland) and seventh freedom services (the term applied to an airline operating turn around service and carrying traffic between points in two foreign countries without serving its home country).

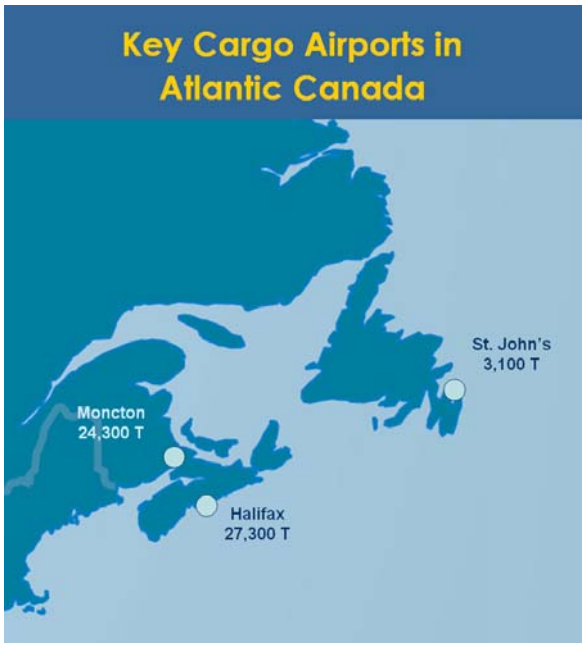
Increasing security requirements could have a negative impact on international air cargo growth as they may cause the cost of air transportation to rise. However, increased security requirements in the U.S. could create potential opportunities for foreign air cargo to be routed through Canada (air to Canada and surface to U.S.). Expansion of Canada Border Services Agency services at key cargo facilities could aid in the development of this opportunity.

Regional Context

The key air cargo facilities in Atlantic Canada are Halifax Stanfield International Airport (27,300 tonnes), Greater Moncton International Airport (24,300 tonnes), and St. John's International Airport (3,100 tonnes).[47]

[47] The Halifax and Moncton volumes are from 2006, while the St. John's volume is from 2005.

Figure 3-18: Key Cargo Airports in Atlantic Canada



Source – Individual airport authorities

Unfortunately, reliable data on historical air cargo performance at key airports in Atlantic Canada was not available.

Despite the fact that Atlantic Canada produces a considerable amount of higher value, time sensitive cargo such as seafood products, as a whole, the region is not well established in the air cargo marketplace. Future air cargo traffic growth in Atlantic Canada is expected to be driven by the following factors:

- Organic growth in existing markets;
- Recapture of air cargo currently diverted to other airports outside of the region; and
- Establishment of increased value added/distribution centre activity in Halifax and Moncton.

These measures should entice additional all cargo operators to initiate scheduled services to and from Atlantic Canadian cities.

Cruise Passengers

Global Context

Over the past two decades, the cruise industry has emerged as one of the fastest growing segments of the global travel and leisure industry. Since 2000, global traffic has increased by over 40% to a record 14 million passengers world wide in 2005. Between 1990 and 2004, global cruise traffic increased at 8.2% per year (nearly three times global GDP). Going forward, growth in the global cruise industry is expected to slow considerably but remain at robust levels (4.6% per year between 2004 and 2020).

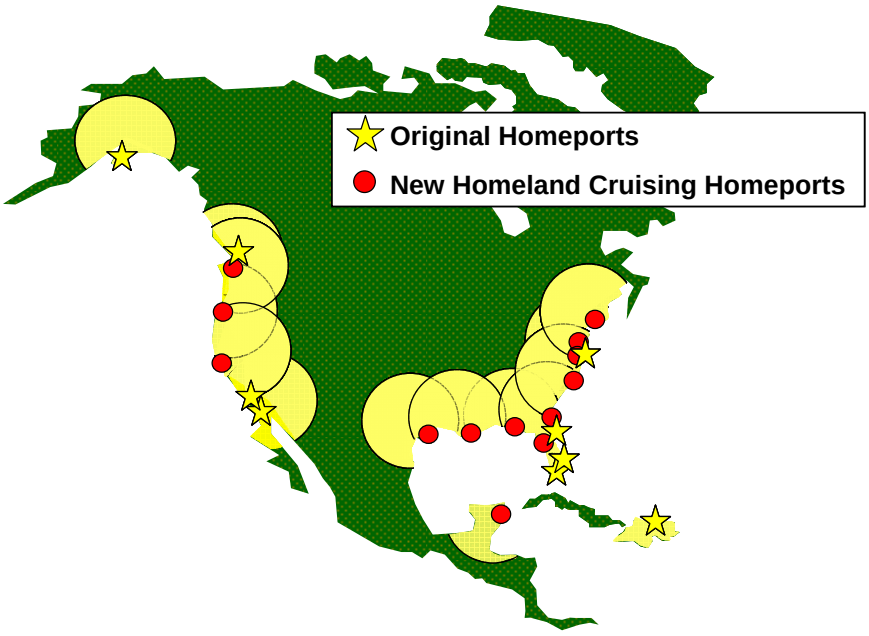
Today, three key cruise companies control nearly 80% of the industry's market share worldwide – Carnival Corporation (47%), Royal Caribbean (22%), and the Star Group (11%) – and account for 90% of the world's cruise ship fleet. The remaining 20% of industry capacity is operated by over 50 cruise lines, ranging from medium-sized lines typically operating between two and five vessels, to small cruise line operators with one ship.

A dominant trend in the shipping industry is the construction of increasingly larger ships with greater carrying capacity and better economies of scale. The cruise industry is no exception. Larger ships enable cruise lines to generate larger profits. Royal Caribbean has distinguished itself as the line with the largest vessels. Its Freedom class vessels, launched in 2006, are currently the largest in the world with 3,600 berths. This class is scheduled to be eclipsed by their new 5,400 berth Genesis-class ships which are scheduled for delivery in 2009.

From an operations perspective, port selection is guided by the ability of ports to accommodate these giant vessels safely and efficiently at low costs. From a marketing perspective, port selection will be driven by the willingness and the ability of the destination to accommodate these passenger and crew volumes, as well as the earning potential from sales of shore excursions.

In an effort to fill their ever-increasing supply of capacity, new homeports have been established along the Atlantic Coast, from Boston to Jacksonville. These new homeports have opened key drive markets that are capitalizing on some potential consumers' fear of flying due to perceived terrorist threats.

Figure 3-19: New Homeports



In recent years, there has been a growing demand for shorter two to five day cruises. This corresponds with the global tourism trend where individuals are taking shorter, but more frequent holidays. Responding to this trend, cruise lines operating Canada-New England itineraries have increased the number of short cruise itineraries.

Figure 3-20: Average Cruise Length

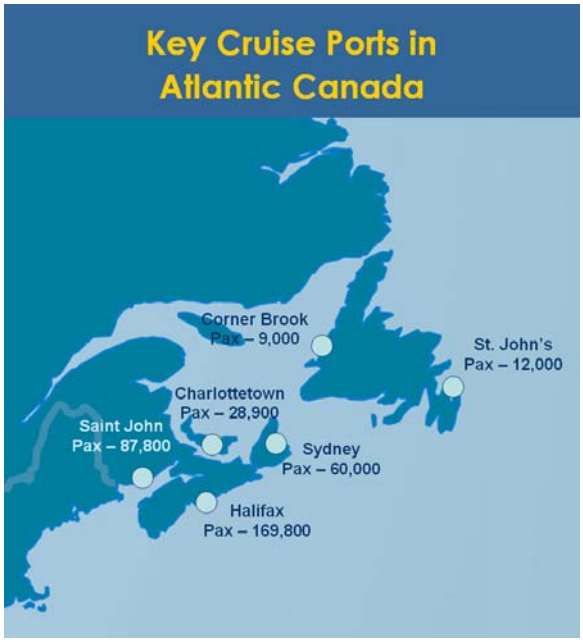
Cruise Length	% Share in 1980	% Share in 2005	% Change
2 to 5 days	24.3%	33.9%	9.6%
6 to 8 days	59.1%	52.2%	-6.9%
9 to 17 days	15.4%	13.5%	-1.9%
18+ days	1.2%	0.4%	-0.8%
Total	100%	100%	0%

Source – Cruise Lines International Association

Regional Context

The key cruise ports in Atlantic Canada are the Port of Halifax (169,800 passengers), the Port of Saint John (87,800 passengers), and the Port of Sydney (60,000 passengers). The Port of Charlottetown, the Port of St. John's, and the Port of Corner Brook also play important roles in the region's cruise industry (as do some other small ports).

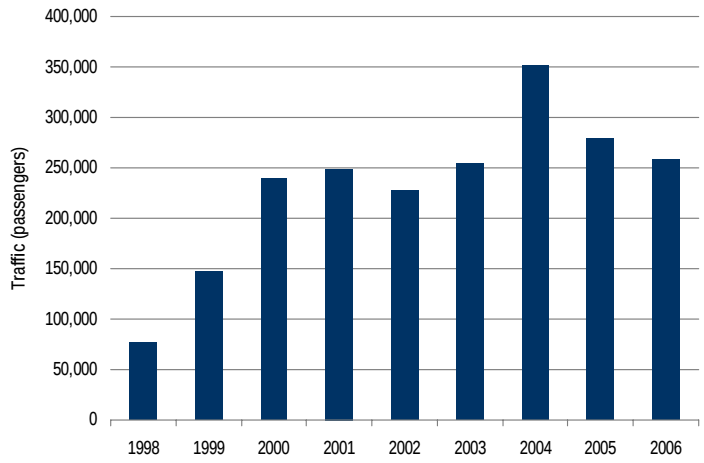
Figure 3-21: Key Cruise Ports in Atlantic Canada (2006)



Source – Individual port authorities

Traffic at the Ports of Halifax, Saint John, and Sydney tripled between 1998 and 2006, increasing from about 94,200 passengers to 317,500 passengers. This represents an average annual growth rate of 16.4% per year. The development of region's cruise industry was positively affected by the terrorist attacks of September 11, 2001, which prompted the development of more homeport operations in cities located in close proximity to Atlantic Canada, such as New York and Boston. The introduction of 3 to 5 day cruise itineraries also helped stimulate the growth of the region's cruise sector. Since 2005, however, cruise passenger traffic at the primary Atlantic Canada ports has trended downward due to the redeployment of cruise capacity from ports such as New York and Boston to both Europe and Mexico's Pacific Coast.

Figure 3-22: Cruise Traffic at Select Atlantic Canada Ports



Notes – Includes Halifax and Saint John only
Source – Statistics Canada

As a whole, the region has successfully developed a niche position for port of call operations. In the future, cruise traffic growth in Atlantic Canada is expected to be driven by the following factors:

- Organic growth in existing markets (by stimulating consumer demand for the Atlantic Canada cruise product); and
- Development of cruise homeport operations.

Two ports in the region have aspirations to develop cruise homeport operations – Halifax and St. John's. A previous study for the Port of Halifax indicated that a typical home port passenger will spend about four times what a port-of-call passenger will spend.[48] It also concluded that the target market should be small-medium sized vessels, with initially modest forecasts of 5,000 passengers per year. However, it might be possible to attract larger vessels once the market is established and systems are in place. Several small home port operations have already been attracted to both Halifax and St. John's.

In many ways the two ports serve different markets: Halifax serves the Canada-New England and Maritime Provinces market, whereas St. John's is well-placed to serve Newfoundland and Labrador all the way to Baffin Island and the Arctic.

Opportunity Assessment Findings

In order to prioritize these opportunities, the consultants evaluated each market segment based on two key factors:

- The existing relative traffic base in Atlantic Canada for each opportunity; and
- The projected future growth rates for the sector.

[48] Bermello, Ajamil & Partners, "Cruiseship Homeport Strategy for the Halifax Port Authority and Partners", p. 31.

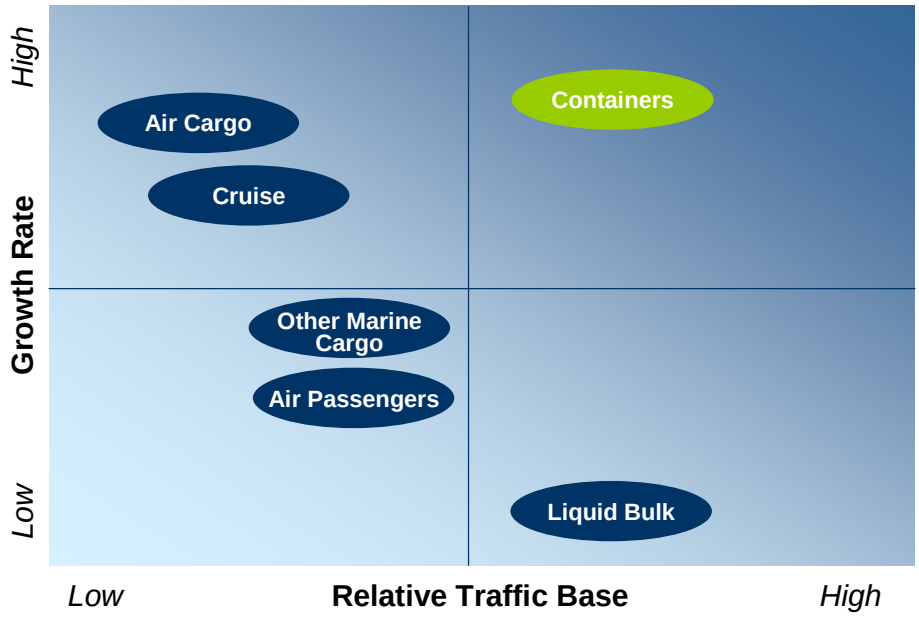
Figure 3-23: Historical and Projected Future Performance by Opportunity Area

Opportunity Area	Growth Rates in Atlantic Canada	
	Over the Past Decade	Projected to 2025
Containers (TEUs)	3.2%	6.9%
Liquid Bulk (tonnes)	8.9%	0.8%
Other Marine Cargo (tonnes)	4.2%	2.8%
Air Passengers	3.6%	2.6%
Air Cargo (tonnes)	n/a	4.2%
Cruise Passengers	16.4%	3.9%

Source – InterVISTAS

Based on this approach, the consultants concluded that the container sector was the priority area of opportunity that offered both a well established traffic base as well as very high future growth potential (see figure below).

Figure 3-24: Opportunity Assessment Matrix



Source – InterVISTAS and MariNova

The initial focus on container activity is also substantiated by several other considerations, including:

- *Immediacy of the opportunity* – There is a recognition that a shorter term window of opportunity exists for the Atlantic Gateway to position itself and capitalize on the expected significant growth of new Suez container services between Asia and North America. Many of these commercial and operational developments are already in place, while others will develop over the next four years. This creates a distinct but discrete window of opportunity for the Atlantic Gateway to achieve an increase in volumes, provided that cost, reliability, and transit time requirements from point of origin to ultimate destination are met. These

services will offer an alternative to Panama and WCNA services and take advantage of operating efficiencies made possible by very large new generation container vessels (8,000 TEU+).[49] As a result, there is a need for gateway stakeholders to move quickly since other ECNA competitors are also taking steps to fill this demand and the Panama Canal has also announced plans to expand by 2015.[50] Once expanded, the Panama Canal will be capable of handling new Panamax vessels of some 12,500 TEUs.[51]

- *Greatest economic benefits for the region* – The detailed economic analysis in this report indicates that increased container activity would make the most significant economic contribution to Canada and the region (more detailed information is provided in Section 6 and Technical Appendices #1 and #2).

- *Strong alignment with other Canadian policy agendas* – The container sector most closely aligns with other national initiatives, in particular the references to container movements in the National Policy Framework for Strategic Gateways and Trade Corridors and the Infrastructure Advantage announced in Budget 2007.

- *Strong synergies with Canada's other gateways and corridors* – The growth of container operations in Atlantic Canada would also have significant synergies with Canada's West Coast ports and the Ontario-Québec Continental Gateway and Trade Corridor. The development of a national transportation system with gateways on both coasts, connected by a national highway system and North America's only true transcontinental railway network would provide supply chain users in both Canadian and U.S. hinterland locations with service alternatives as well as improved connectivity and increased flexibility, reliability, and frequency by which to move their products.

Pursuing Other Opportunities

Despite the consultants' recommendation that marine containers should be the initial priority for the Atlantic Gateway, high growth opportunities also exist in air cargo, air passenger, and cruise operations. In addition, liquid bulk activity also holds exciting opportunities with increased production, new refining capacity, and the potential for new LNG facilities in the region.

It is recommended that each of these opportunities be pursued, in relative priority, to complete the multifaceted Atlantic Gateway initiative. Work is already being conducted in many of these areas. To support this work, the consulting team developed traffic projections and identified the associated economic impact for each opportunity (described in detail in Technical Appendices #1 and #2).

[49] 'The Year of Suez', *Journal of Commerce*, April 2007.
[50] The country of Panama recently held a referendum which approved a US$5.25B expenditure.
[51] Germanischer Lloyd, 'Boxmail', Issue January 2007.

4.0 The Container Opportunity

Market Overview

The container industry had its genesis in the 1950s but became a key force in worldwide transportation in the late 1960s and early 1970s. In many respects, it made globalization possible and allowed developing countries to take part in global growth opportunities.

As noted previously, global container traffic grew at a CAGR of 8.3% from 1994-2004 and is expected to grow by 6.1% CAGR from 2004-2014, and 5.0% from 2014-2024. In 2005, a total of 85 million loaded containers were shipped worldwide. This figure is expected to grow to 243 million loaded containers by 2024, almost twice the pace of worldwide GDP.

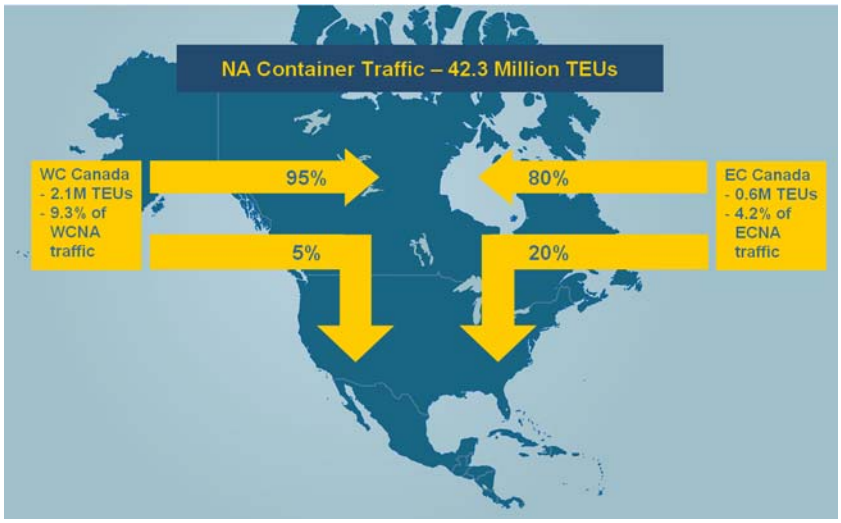
Another way of looking at the market is to consider that all of the world's container ports handled 323 million TEUs in 2005, of which 42 million were handled in North America, and 4.1 million TEUs were handled in Canada. In other words, Canada handled about 10% of the North American total and 1.5% of the world market.

Ports in Atlantic Canada were early adopters and Halifax remains a significant Canadian container gateway. Saint John is a niche player, specialising in the Caribbean, and St. John's is a conduit for domestic cargo moving to and from the Canadian mainland. A significant proportion of Newfoundland and Labrador exports move via Oceanex to Halifax and Montreal for onward carriage to international markets.

The Port of Halifax built the first common user container terminal in Canada in 1969 and now has an established niche in the global container industry, serving a myriad of markets externally as well as within Canada and North America. As an existing gateway to Canada and North America, the Port of Halifax is able to offer a wider variety of shipping services than its population would normally warrant and provides extensive export opportunities to critical regional industries. It is already a critical component of Canadian supply chains for both importers and exporters.

The Atlantic Gateway has experienced significant private sector investment within the past 18 months. In Halifax, Macquarie Infrastructure Partners purchased Halterm Income Fund for $172M, and CeresGlobal took delivery of two post-Panamax gantry cranes in 2007, an investment of over $23M. Plans have also been announced by Trident Holdings Ltd. for a 315 acre, US$325M container terminal at the Strait of Canso. The project would also include a 1,500 acre distribution park and a 15 km spur line to connect with the short line Cape Breton and Nova Scotia Railway. It would have capacity to handle 1.5 million TEUs when the first phase completed in 2010.

Figure 4-1: Canadian Container Traffic



Source – Port of Vancouver and Port of Halifax

About 70% of Halifax's cargo moves inland via rail; the other 30% moves to and from local Maritime region markets by truck or to Newfoundland and Labrador by short sea shipping. New England cargo also moves via short sea feeder vessel. About 20% of Halifax's cargo is destined to or originates in the U.S. mid-west by rail. Despite substantial advantages in distance, the port handles about one third the volume of Ontario cargo that Vancouver handles and about one half the Québec cargo that Vancouver handles.

Figure 4-2: Canadian Loaded Container Traffic Flows

Source – Port of Vancouver and Port of Halifax

For various reasons, however, container traffic has flat-lined in Atlantic Canada over the past seven years, suggesting that the region has not benefited from the surge in Asian imports and has remained reliant upon traditional trade routes to North Europe, the Caribbean and the Mediterranean. To date, the incremental Asian traffic has largely utilized WCNA ports or East Coast U.S. ports via the Panama Canal. The number of WCNA shipping services has grown from 41 in 2003 to 54 in 2006; likewise the number of east coast Panama services has grown from six to 14. Ports like Boston, which has a very high value consumer market, have seen a

rise in their Asian cargo via the Panama Canal, but the impact of the 'China Effect' has not been felt further north.

As of 2005, there were still only two Suez services, both of which called at Halifax[52] and the Maersk Line's MECL2 service added Halifax to its Suez service in May 2006. However, Maersk Line's MECL2 Service now sails directly from Algeciras to Savannah and the China Shipping Line's AMAX service ended its vessel calls to the Port of Halifax in August 2007, despite Halifax being one of the stronger performers in the AMAX string of 20 ports. In the future, the increasing Suez shift should have the opposite affect to Panama, putting Halifax at an advantage rather than a disadvantage over more southern ECNA ports.

Figure 4-3: East Coast North America Container Traffic 1990-2005

ECNA Port	1990	1995	2000	2005
Halifax	447,250	382,575	548,404	550,462
Boston	141,849	159,844	138,904	188,869
New York	1,898,436	2,262,792	3,050,006	4,792,922
Baltimore	474,301	534,556	508,320	602,486
Hampton Roads	788,760	1,077,846	1,347,364	1,981,955
Charleston	801,105	1,023,903	1,632,747	1,986,586
Savannah	419,079	626,151	948,699	1,901,520

Source – MARAD

Halifax has also been adversely affected by the reorganization of a transhipment service operating between Halifax and the ports of Boston, MA and Portland, ME, which, when feeder and mother ship lifts are counted, accounted for a significant amount of volume.[53]

Atlantic Gateway Growth Drivers

Increasing Ship Size

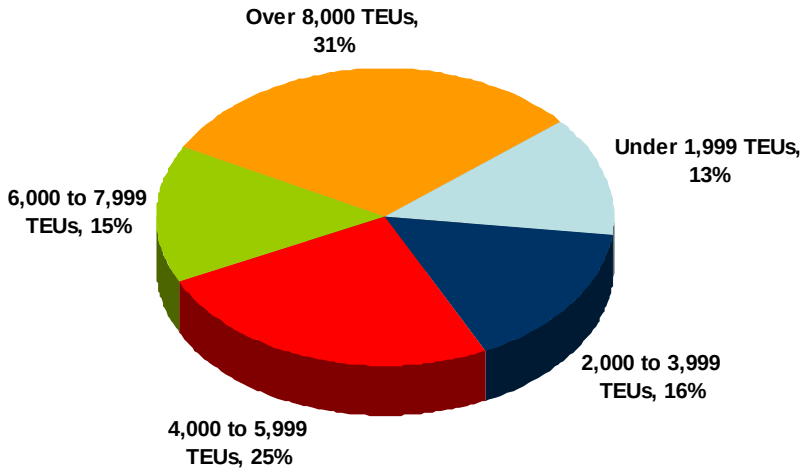
In order to meet the estimated increase in trade activity, leading shipping lines are investing in large container ships (over 10,000 TEUs). Larger container ships offer greater economies of scale, which result in lower costs to shippers and higher profit margins for carriers. According to Drewry Shipping Consultants Ltd., a 10,000 TEU vessel on a transpacific routing generates cost savings equivalent to roughly 50% per TEU relative to a 4,000 TEU ship.[54] [55]

Over the next five years, most of the new ships entering the world fleet will be post-Panamax vessels (over 5,000 TEUs). By 2010 world cargo capacity will nearly double with a fleet of 537

[52] CPCS Transcom, 'Nova Scotia Gateway Strategy', 2006, p. 2-20. Data supplied by Drewry Shipping Consultants.
[53] This service will re-commence in June 2007, operated by Eimskip, an Icelandic shipping line. Ports served will include Boston, Portsmouth and Portland, as well as the two container terminals in Halifax.
[54] Notteboom, T. (2002). The interdependence between liner shipping networks and intermodal networks, Paper for IAME Panama 2002, Maritime Economics: Setting the foundations for port and shipping policies, Panama City, Panama, November 13-15, 2002. Retrieved August 25, 2006 from www.eclac.cl/transporte/ perfil/iame_papers/proceedings/Notteboom.doc.
[55] Notteboom, T. and Rodrigue, JP.,Port Regionalization: Towards a New Phase in Port Development, 2005.

post-Panamax vessels, according to the Institute of Shipping Economics and Logistics. Today, most ship orders are in the larger categories, including 359 vessels with capacities greater than 7,000 TEUs. In the past two years alone, 11 mega-sized containerships have been ordered by Maersk Line with capacity of more than 11,000 TEUs and draft of approximately 51 feet. These ships have more than double the capacity of a typical Panamax ship, thereby potentially placing dramatic demands on North American container ports and associated inland transportation systems.[56] Most of these mega-ships will be deployed on Asia-Europe routes, but they will displace other large vessels for Suez routings.

Figure 4-4: Container Ship Orderbook by TEU as of July 2006



Source – Institute of Shipping Economics and Logistics 2006

Consolidation to Deep Water Ports

Currently, there are close to 600 container ports throughout the world with an estimated combined handling capacity of 380 million TEUs. A survey by the American Association of Port Authorities indicates that the top 10 North American container ports moved 69% of the continent's total international container volumes in 2005.[57] Even more remarkable is the dominance of Southern California's two ports, Los Angeles and Long Beach, which account for 30% of the continent's total throughput.

In the past decade, these top ports have become more concentrated due to improved economies of scale and the surge in trade with Asia. As container fleet sizes increase, the number of vessel calls made on a routing will decrease in order for shipping lines to maximize revenues and minimize the number of vessels required for that particular service. The implication is that container operations will be further concentrated on a limited number of larger hub ports.

The new generation of super post-Panamax containerships transiting the expanded Panama Canal and Suez Canal will require berthing at deep-draft ports and sophisticated landside

[56] It should be noted that the first of these vessels have been placed in Asia-Europe service.
[57] American Association of Port Authorities, U.S./Canada Container Traffic in TEUs (1980-2005), 2006.

access transfers. Channel depths at many East Coast North America ports range from 35 to 45 feet to accommodate a typical Panamax vessel. Further deepening at most East Coast ports will be needed to provide the approximate 50-foot water depth that larger vessels require and the 54-foot water depth required by vessels handling over 9,800 TEUs at full draft. The following table provides details on current and future channel depths at East Coast ports. With the deepest harbours on the East Coast, Halifax and the Strait of Canso are well-positioned to capitalize on these developments. The Port of Halifax, with 55-foot deep channels and berths available to accommodate these vessels today, is currently the deepest container port on the East Coast of North America.

Figure 4-5: Draft Depths at Active East Coast Ports

Port	Current Depth	Future Depth	Project Completion
Baltimore, MD	42	*	*
Boston, MA	40	50	2010
Charleston, SC	47	*	*
Everglades, FL	45	50	2014
Halifax, NS	55	*	*
Jacksonville, FL	41	*	*
Miami, FL	42	50	2012
Philadelphia, PA	40	45	2010
Saint John, NB	30	*	*
Savannah, GA	42	48	2011
Virginia, VA	50	55	**
Wilmington, DE	40	45	2009
Wilmington, NC	38	42	2004
New York/New Jersey	45	50	2013

*Notes – * no current plans available, ** no dates available*
Source – TranSystems and individual port websites

West Coast Congestion

While shippers are taking advantage of the economies of scale attributable to increasing ship sizes and calling on fewer ports, dramatic demands are being placed on key West Coast North America container ports.

For example, when a super post-Panamax container ship with 9,000 TEUs calls at the Port of Los Angeles, it requires five cranes working simultaneously 16 hours per day for at least three days to unload the vessel. Moving this vast quantity of containers puts an enormous strain on port resources and requires significant logistics and distribution capabilities to transfer cargo seamlessly to and from intermodal rail and truck landside access facilities.

Asia's prominence as an exporter to markets in North America, one of the biggest consuming markets in the world, is overwhelming ports on this continent. In North America, the main entry point for containers originating in Asia are west coast ports, primarily Los Angeles, Long Beach,

Oakland, Seattle and Tacoma. In the past decade the Port of Vancouver has become Canada's largest container port by attracting much of this business. During peak seasons there are serious delays at these ports, particularly in southern California and Vancouver. Major investments are taking place at these ports along the west coast, but there is little in terms of major terminal expansions at the largest U.S. west coast ports. Based on current confirmed investments, the expected growth in trade with Asia is forecast to outstrip the capacity at West Coast ports in North America during the second half of this decade.[58]

The large container ships coming online in the near future will likely find they can only choose from a small group of deep water ports capable of handling them. It is expected that these substantial surges in volume will strain U.S. port capacity limits within the next 10 years and also present supply chain vulnerabilities due to road and rail congestion, and security considerations at North American ports. A recent U.S. Chamber of Commerce study of North American port and intermodal systems estimates that 14 of the 16 major deep-water North American ports examined will experience a minimum 50% increase in container traffic, while 12 of the 16 ports will need to add extensive new terminal and intermodal capacity by 2010 to meet the estimated growth. Adding to the capacity challenge, land constraints fuelled by population growth in coastal states, provinces, and around ports will limit the ability of U.S. ports to resolve the systemic landside congestion issues.

Panama Canal Restrictions

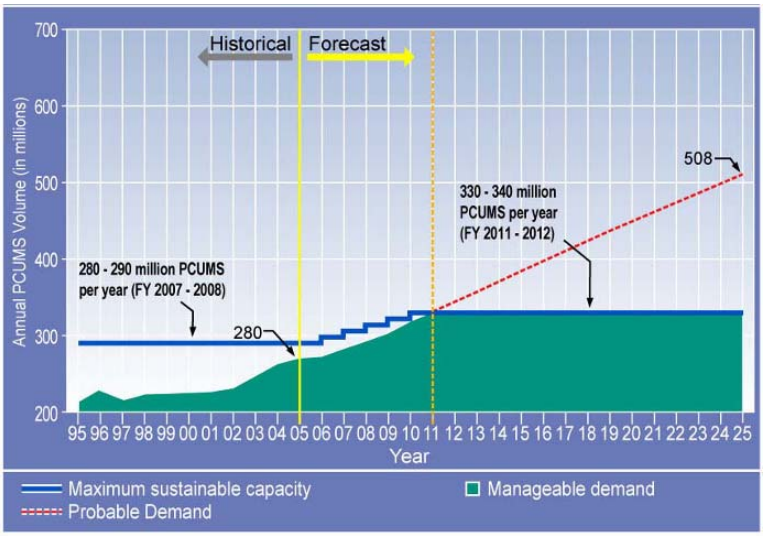
Another major, but short-term, growth driver is the capacity of the Panama Canal. Driven by a dual coast strategy as well as the location of distribution centres on the southern U.S. East Coast, shipping lines have shifted a considerable amount of volume to East Coast ports. For example, new services have been introduced which call at Chinese ports, such as Shanghai, and then sail directly for Savannah, Norfolk, and New York.

The Panama Canal was the gateway for over 140 maritime routes and over 14,000 transits in 2006, including vessels of various types and sizes. The larger the vessels, the fewer the number of transits the canal is able to handle. The canal has a finite capacity determined by the operational times and cycles of the existing locks. Consequently, with its present capacity, it will become more difficult for the canal to handle growing traffic volumes in terms of size as well as vessel numbers.

Drewry Shipping estimates that the canal is operating at about 95% capacity and that it will be unable to accommodate any new business by 2010. The Panama Canal Authority's Proposal for the Expansion of the Panama Canal report released in April 2006 estimates that the final design for the Third Set of Locks Project will be completed in FY 2007 with operations beginning in FY 2015. The Canal Expansion Project is comprised of three key elements – the construction of two lock facilities, the excavation of new access channels to the new locks (as well as the widening of existing navigational channels), and the deepening of the navigational channels to increase the maximum operating level of Gatun Lake. The total cost for the project is estimated to be US$5.25 billion. Panama recently held a referendum to expand the canal by 2015, but whether this is realistic is open to speculation.

[58] Drewry Shipping Consultants, 2005.

Figure 4-6: Maximum Sustainable Capacity of the Canal



Source – Panama Canal Authority

Even with the completion of some upgrades, the Panama Canal will have a maximum sustainable capacity of approximately 13,800-14,000 ocean-going vessel transits per year. This capacity will be reached between fiscal year 2009 and 2012, depending on market demand.[59] Once it reaches this capacity, it will not be able to continue to handle demand growth until a third set of locks is built.

This three to six-year period where the canal will not be able to meet demand growth will result in a reduction in the competitiveness of the Panama maritime route and will accelerate a shift to the Suez. The unexpanded canal's market share may decrease from 38% in 2005 to 23% in 2025. Consequently, its competitors' share may increase, with the intermodal system reaching 65% and the Suez Canal 12% (Panama Canal Authority, 2006).

That said, once new competitor routes have been established through the Suez and new transportation and trade patterns introduced, the Panama Canal may encounter challenges in regaining its lost market share. There are several reasons for this. From a shippers' perspective, a shift to the Suez will accelerate new manufacturing and retailing possibilities in the Indian subcontinent that will always be more economically served through Suez routings. As well, the Suez shift will facilitate shippers' port diversification strategies, which will remain in the shippers' interests after Panama Canal expansion. From a shipping company perspective, canal users will have to make investments to increase their use of alternative routings, such as the Suez, in order to guarantee the continuous and uninterrupted flow of trade. More generally, the shipping companies will follow the shippers' demand and if the shippers are well served by Atlantic Gateway ports, there will be no reason for the shipping companies to change routings.

Regardless, shipping routings are elastic and the Atlantic Gateway will have to offer value-added, reliable and cost effective service to retain traffic after the expansion of the Panama Canal.

[59] Panama Canal Authority, Proposal for the Expansion of the Panama Canal, 2006.

Rise of Western Asia and Indian Subcontinent

The Indian subcontinent market is seen to hold much promise for the Atlantic Gateway. The Atlantic Gateway has an absolute distance and time advantage in serving the Indian subcontinent. Mumbai is 1840 nautical miles closer to Nova Scotia than Vancouver. Likewise, the rail distance from Vancouver to Toronto is approximately 2,754 miles, whereas it is 1,115 to Nova Scotian ports.

India is growing at a spectacular rate. After several years of GDP growth in excess of 9%, according to the Economist Intelligence Unit, 'real GDP is forecast to moderate slightly, to 8.5% in fiscal year 2007'.[60] It also states its population of over 1 billion 'offers an enormously promising market for consumer goods and services'.

India's economy and growth are primarily based in services (53.6% of GDP). However, India's remarkable industrial expansion – manufacturing output has grown at an average rate of 19% a year for the past three years – has made it a very attractive investment destination for foreign companies that manufacture a variety of intermediate products and industrial machinery and equipment'.[61]

Figure 4-7: Origins of Indian GDP (2005)

Good	% of GDP
Agriculture	19.0%
Industry	27.4%
Manufacturing	15.9%
Services	53.6%

Source – MariNova

India's principal exports are in engineering goods, textiles and clothing and gems and jewellery. The primary destination is the United States – amounting to $19.1 billion in 2005. The United States is also the second largest exporter of goods to India, totalling $6.5 billion in 2005.

Figure 4-8: Main Destinations for Indian Exports

Destination	US$B
U.S.	19.1
China	9.4
United Arab Emirates	8.4
U.K.	4.9

Source – MariNova

[60] Economist Intelligence Unit, Country Report, India, 2007.
[61] Economist Intelligence Unit, Business India Intelligence, 2007.

Indian trade to the ECNA tends to be served either by transshipment over Colombo, Sri Lanka, Dubai, UAE, or Salalah, Oman. There have been several developments with respect to new direct Indian services in the last 12 months.

A new service called Indus Express was started by an alliance consisting of Emirates Shipping Line Shipping Corp. of India, Emirates Shipping, Zim Integrated Shipping Services Ltd., OOCL and MacAndrews. The weekly service deploys eight 2,500-2,600-TEU vessels, providing extensive port coverage of the west coast of India. The IDX schedule calls Colombo, Tuticorin, Nhava Sheva, Mundra, Barcelona, New York, Norfolk, Charleston, Barcelona and Colombo, with a 56-day round voyage.

Another new service announced in September 2006, the SINA service, is operated by Hanjin Line, United Arab Shipping, 'K' line and Yang Ming Line, calls two ports, Singapore and Colombo, before proceeding to Nhava Sheva and Pipavav in India, and thence to Jeddah, Port Said, and New York. Transit time from Singapore to New York is 25 days and from Nhava Sheva to New York is 21 days. The service deploys 8 3,500-4,000 TEU vessels.

In March 2007, Maersk Line also announced the reconfiguration of its MECL1 and MECL2 services. The MECL 1 service calls at Nhava Sheva before heading to Salalah and then direct to New York. The MECL2 service calls at Chennai and Colombo before heading to Salalah, Jeddah, Algeciras and then Savannah.

Likewise, in May 2007, the New World Alliance announced its Suez Express service, deploying eight vessels carrying 4,000 to 4,500 TEUs. The NWA consists of American President Lines, Hyundai Merchant Marine, and Mitsui OSK Line. The service which began in July, connects Colombo, Jebel Ali, Kelang, and Singapore with New York, Savannah and Norfolk, in addition to Charleston.

Other services are said to be under consideration by COSCO, Evergreen and CMA CGM. All of these developments are illustrative of the dynamism of both the Suez Express concept and the burgeoning Indian market.

Canada has signalled its intent to pursue a free trade agreement with India. With a middle class of approximately 200 million, India represents a vast market for Canadian businesses. The Canadian Chamber of Commerce and its members are also looking to increase trade with India.

Despite this spectacular growth, India is still an emerging market. In 2005, its 21 container ports handled 4.6 million TEUs, of which slightly more than half were handled at Jawaharlal Nehru (JNP) near Mumbai and another 250,000 at Mumbai. On the main east-west trade corridors, India handled an estimated 2.8 million TEUs in 2004, of which 513,000 were carried to and from North America.

If Indian ports were to achieve 4.5% CAGR until 2012, they will handle 8.4 million TEUs. If this increases to 7.5% CAGR, they will handle 10.7 million TEUs. It is widely recognized that weak infrastructure is one of the main obstacles preventing India from reaching even higher rates of growth. An estimated US$320 B is required by the country's roads, airports, railways and power infrastructure.

India's ports currently handle 423 million tonnes of cargo per annum and have a capacity of 450 million tonnes. Several major port projects are underway or planned, but several have also been delayed. The country is planning to build five new ports to augment the 12 major ports it already has. It plans to spend US$12.5B in the next five years, which will include facilities with berth

depths of 20m. These facilities will be developed through public-private partnerships and will boost capacity to 1 billion tonnes.[62]

As of 2006, Halifax handled the following volumes of cargo to and from India and South East Asia.

Figure 4-9: Estimated Average TEUs handled at Halifax to and from India and S.E. Asia

Country	Export	Import	Total
Bangladesh	1,957	310	2,267
China	15,643	4,033	19,676
India	10,602	2,260	12,862
Kampuchea	38	-	38
Macau	11	-	11
Mongolia	5	-	5
Myanmar	6	-	6
Pakistan	1,086	-	1,086
Sri Lanka	5,160	12,200	17,360
Thailand	5,622	1,538	7,160
Vietnam	563	14	577
Total	40,693	20,355	61,048

Source – Halifax Port Authority, 2005 and 2006 Direct Container Statistics: Summary by Trade Route.

The Halifax Port Authority (HPA) has aggressively pursued the Indian market and appointed in-county agents in Mumbai and New Delhi. The Greater Halifax Distribution Study of 2004 pointed out that based on 2002 data, Halifax's trade with India was, uniquely, imbalanced in favour of exports and that it was a potential opportunity for two way trade.

Suez Shift

The rise of the Indian subcontinent and Western Asia, the size and extent of the global container vessel orderbook, projected West Coast congestion and restrictions in the Panama Canal will all contribute to a shift in services from transpacific and Panama routings to the Suez Canal. The Canal, which links the Mediterranean with the Red Sea, can accommodate much larger and deeper vessels than the current Panama Canal locks and is unconstrained in terms of current container vessel sizes. By the end of 2006, the Suez Canal will have been dredged to a depth of 65 feet, more than sufficient draft for the largest container ships presently on order.

This shift holds significant potential for the Atlantic Gateway because its ports are 436 nautical miles closer to Hong Kong via the 'Suez Expressway' compared to a Panama Canal routing. Equally critical is the Atlantic Gateway's location advantage over other ECNA ports via the Suez Canal. New York terminals are 492 miles further from Indian and South Asian markets than Halifax via the Suez Canal. Other ECNA ports are much further away.

[62] India to Build Five Ports, *Journal of Commerce*, 2007.

Using a Suez routing to East Coast North America could yield lower unit costs to carriers employing large container vessels. Post-Panamax vessels currently on order by the world's major shipping lines will initially be deployed on Asia-Europe and then Asia-West Coast North America routes. These routings will absorb about one-half to two-thirds of the vessels on order. Theoretically, the remaining and displaced tonnage will be available for Suez strings, sailing westbound from Asia through the Suez Canal and onwards to East Coast North America ports.

Suez routings from Asia to North America are currently underutilized, signalling tremendous growth potential. Almost 91% of the container cargo flowing through the Suez Canal is moving between Asia and North West Europe. Only 5.1%, or 1,275,102 TEUs, travel between Asia and North America.[63]

Figure 4-10: Suez Canal: Analysis of Traffic by Route

Route	TEUs (000s)	Share %
North West Europe-Far East	21,610	86.4
North West Europe-South Asia	1,049	4.2
East Coast North America-South Asia	882	3.5
North West Europe-Middle East	450	1.8
North West Europe-Australasia	446	1.8
East Coast North America-S.E. Asia	401	1.6
North West Europe-East Africa	119	0.5
East Coast South America-Middle East	45	0.2
Total	25,002	100

The Director of Trade Development for the Georgia Ports Authority has been quoted as saying that upwards of 350,000 TEUs of cargo from South East Asia to the U.S. east coast that is currently being transshipped via Busan, Korea or Hong Kong, could be moving through the Suez Canal.[64]

There are also different ways to view the 'Suez' opportunity. One is predicated upon the Indian market, where new shipping services emerge to 'just' serve the Indian subcontinent. The other is to seize on what appears to be an emerging opportunity towards moving South East Asian and Indian subcontinent cargo in a 'backward' flow through the Suez Canal, encompassing cargo from as far east as Hong Kong. Until now, most Suez services sailing to the North American east coast have commenced their voyage at or near Singapore or Thailand. Many observers now believe that placing large 6,000+ TEU vessels on this route will necessitate port calls as far west as Hong Kong. The ports of Savannah and Charleston have commented that ports as far north and west such as Shanghai could become part of Suez itineraries, because of their economies of scale. As volumes coming out of those regions, especially the Hong Kong / Shenzhen region are much greater than South East Asia, this is critical to the future of the 'Suez Express' route.

The viability of Suez services encompassing markets to the west of Thailand will depend on cargo volumes and the economies of scale that larger post-Panamax vessels will achieve.

[63] Mahmoud Rezk, Suez Canal and its Role for Container trade between Asia and ECNA, 2006.
[64] Peter T. Leach, The Year of Suez, *Journal of Commerce*, 2007.

Several analyses have suggested that a Suez routing from Hong Kong to ECNA would require nine vessels, compared with a typical Panama routing of just eight vessels, thus requiring an additional capital expenditure of about US$125 million. However, several analyses have suggested that routes requiring either nine or 10 large post-Panamax vessels of 5,000 or 6,000 TEUs are cost competitive with 4,600 TEU vessels transiting the Panama Canal.[65] The number of vessels required will depend upon the number of ports served. If express services do not call at Mediterranean ports, then fewer vessels will be required.

We are already seeing a Suez shift take shape. Presently, four fixed, all-water Suez services offer shippers 16,500 TEUs of weekly slot capacity and several others are considering Suez services.[66] There are 27 dedicated service strings between Asia and the North American East Coast and seven round-the-world and pendulum services that call on East Coast North America from Asia through the Suez Canal. Vessels on these trade lanes have increased in size on both the Asia/Suez Canal routes and the round-the-world and pendulum services. Their growing number is expected to reduce shipping costs, making it more economical for China and the Indian subcontinent traffic to use the Suez Canal to reach East Coast North America.

Figure 4-11: OOCL Asia East Coast (AEX) Service Pattern

Transit Time (Days)

Far East to U.S. (Eastbound)

From / To (Depart /Arrive)	Halifax (Sun)	New York (Wed)	Savannah (Fri)	Norfolk (Sun)
Colombo (Tue)	18	20	22	25
Singapore (Sat)	22	24	26	29
Laem Chabang (Mon)	25	27	29	32

Transit Time (Days)

U.S. to Far East (Westbound)

From / To (Depart/Arrive)	Jeddah (Wed)	Colombo (Tue)	Singapore (Sat)	Laem Chabang (Mon)
Halifax (Wed)	13	19	23	25
New York (Mon)	15	21	25	27
Norfolk (Sun)	16	22	26	28
Savannah (Thur)	18	24	28	30

Continued Growth in Asia – North America Trade

Atlantic Canada's future traffic will be driven, to some extent, by growth from Asian markets.

As mentioned earlier in the report, expanding Asian economies have contributed to the rapid growth in world trade and to the growth in container trade. Companies around the world are shifting manufacturing facilities to Asia, creating the need for large volumes of exports from

[65] Drewry Shipping Consultants, Economic Overview and Forecast of the Suez and Panama Canal Trades from Asia, 2006.
[66] Peter T. Leach, The Year of Suez.

these Asian countries. China in particular has experienced this phenomenon and as become the third largest exporter in the world, behind Germany and the U.S.

Asia's prominence as an exporter to markets in Europe and North America is reflected in recent shipping and container trends. Asia's share of global container throughput increased from 25% in 1980 to 46% in 2004. China's ports now account for the largest volume of container movements in any other country, and more than double the share of shipments in the second place country, the United States. Recent growth at U.S. ports has been largely fuelled by trade with Asia. In 2005, 38% of container import volumes in U.S. were from China, more than double the share in 1995.[67]

Currently more than 60% of all North American container trade is with Asia, and this pace is expected to continue throughout the remainder of the decade. Although the largest volumes of existing trade take place on transpacific routes, shipping lines are increasingly expanding their current service levels and launching new routes via the Suez Canal. According to Containerization International, container flows from Asia to East Coast North America will grow at nearly twice the rate of transpacific traffic in 2007 (16.1% and 7.7% respectively).

By 2008, it is predicted that trade between Asia and North American will be 27% higher than in 2005.[68] Asia will continue to galvanize trade patterns in the future, but shifts are occurring within the region as production costs in China are rising.

Recent history suggests that growth for the Atlantic Gateway is not a 'given' and that some of this cargo, especially non-Atlantic Canada regional cargo, is vulnerable to competition from other ports. In the near term while traffic from the Indian subcontinent is being established, Suez routines will need to include volumes from Hong Kong and South China to be economically viable. The Atlantic Gateway will have to compete for every tonne of 'gateway' cargo because alternatives do exist.

Evolving Supply Chain Risk Management Practices

The development of global supply chains, including outsourcing and offshoring, are reflected in changing patterns of international trade. North American and European companies are shifting manufacturing facilities to Asia, in particular to China. As a result, the overwhelming majority of containers are moving from Asia to the United States, the largest consumer market in the world. And because major retailers are the most significant end users of containers, they are able to influence shipping lines to establish transportation services and systems that meet their supply chain needs. Larger shippers have more influence on routing patterns and the balance of power is shifting towards shippers, in particular top global retailers.[69]

[67] APEC, The Changing Global Economy.
[68] Global Insight, The Physical Internet: A Survey of Logistics, The Economist, 2006.
[69] APEC, The Changing Global Economy.

Figure 4-12: Top 20 Container Importers in the United States (2004)[70]

Rank	Company	TEUs/year
1	Wal-Mart	576,000
2	Home Depot	301,200
3	Target	202,700
4	Sears/Kmart	186,000
5	Dole Food Company	164,100
6	Chiquita Brands International	115,600
7	IKEA International	100,000
8	Lowe's	100,000
9	Heineken USA	83,000
10	Ashley Furniture Industries	69,800
11	Costco Wholesale Corporation	66,400
12	Payless ShoeSource	54,200
13	Samsung	52,800
14	Matsushita Electronic Corp. of America (Panasonic)	52,100
15	Toyota Motor Sales, USA	52,000
16	General Electric	51,800
17	Williams-Sonoma	50,000
18	Mattel	49,300
19	Pier 1 Imports	48,100
20	Sony Corporation of America	47,900

Increasingly, major North American retailers are moving a portion (and in some cases a significant portion) of their Asian sourced products via East Coast gateways instead of exclusively through West Coast gateways. Just a few years ago, Canadian Tire, moved almost 100% of its Asian imports via the Port of Vancouver. Today it moves approximately 90% through the Port of Vancouver and 10% through the Port of Halifax. Over the next 5 to 7 years, it anticipates these ports will handle 70% and 30% of its total traffic, respectively. Similar routing shifts are being implemented by a number of other North American retailers. These routing shifts are being implemented to minimize the impacts of West Coast port congestion, to better balance the backflow of empty containers, and to protect against possible disruptions in their supply chains. Each of these is discussed in greater detail below.

- *West Coast port congestion* – Historically, the main point of entry in North America for Asian import containers has been West Coast ports. Due to the increased volumes that they are being called upon to handle, these gateways, not surprisingly, are becoming increasingly congested, and in the process, shippers are being inconvenienced through increased dwell times and costs.

  In response, shippers are becoming increasingly sophisticated in the development of their supply chains to give them maximum flexibility and reliability. Many are initiating port diversification strategies to optimally allocate imported containers between the west and

[70] Manufacturing and Technology News, The China Rip Tide: Threat or Opportunity? 2006.

east coasts to ensure timely deliveries. As a result, shipping lines are introducing Asia to east coast services, including all water services from Asia to Savannah, Charleston, Norfolk and NYC/NJ via the Panama Canal. Within a Canadian context, several large national shippers have already introduced similar strategies. Going forward, it is anticipated that continued traffic shifts from the Panama Canal to the Suez Canal (due to Panama congestion and the expansion of manufacturing to western Asia and India) will provide new opportunities for the Atlantic Gateway.

- *Optimizing the backflow of empty containers* – Port diversification is also driven by the issue of empty containers. Large import volumes from Asia are not currently matched by export volumes from North America, resulting in many underutilized containers, mostly located in the centre of the continent. These containers have to be reloaded with lower value goods, repositioned to an area of the continent with higher demand, or stored. Each of these options involves cost.

  As the recent 'Use of Containers in Canada' study illustrates, the repositioning of empty containers across Canada is an emerging issue from a number of perspectives.[71] On the west coast, concerns relate to moving and storing containers in the lower mainland, as well as evacuating them to markets in Asia. Vancouver exports over 200,000 TEUs of empty containers per annum. Shippers in the West want access to containers, which they perceive to be moving empty across the Prairies, thus denying them access to inexpensive transportation. Of 1.2 million TEUs handled, the Port of Montreal exports about 120,000 empty TEUs back to Europe. Halifax, on the other hand, is often in desperate need of empty containers, particularly refrigerated containers, which have to be repositioned from places like California, Jamaica and Spain, for the region's exporters of seafood, French fries and frozen blueberries. Halifax actually imports close to 80,000 TEUs of empty containers.

  To demonstrate the problem, the average marine container train leaving Central Canada for the Port of Vancouver will consist of approximately 40% export loads, 30% empties and 30% domestic repositioned (DRP) loads headed for terminals across Canada. Many of the empty containers are filled with local exports at a transload facility once they reach Vancouver, or they are moved back to Asia empty, to improve equipment velocity. This places both the railways, which have to make additional stops on the Prairies, and the shipping lines, which has equipment out of circulation waiting for (largely) low-paying cargo, at a disadvantage.

  On the other hand, the Port of Halifax is in a container deficit situation, mainly for reefer cargoes and some dry moves, because export volumes exceed import volumes. Halifax needs to reposition empty containers back from larger centres or containers filled with domestic cargo in the railway's DRP program.

  Sophisticated shippers would benefit by shipping a portion of their volumes through the Atlantic Gateway, because it mitigates the problem of the container imbalance and the repositioning of empty containers. Canadian Tire, as an example, whose product consumption is concentrated in central and eastern Canada (70%), has already recognized that a port diversification strategy utilizing both the east and west coasts will mitigate a portion of this enormous imbalance. The fledgling transload sector in Halifax will also help balance out the situation, with benefits to the national importer and the regional exporter (This has been explained elsewhere).

[71] MariNova Consulting Ltd. and Partners, The Use of Containers in Canada, 2006.

- *Risk management* – A two coast port diversification approach also serves as a risk management strategy. Port disruptions occur for many reasons, including labour relations, ecological disasters, security violations and breakdowns in infrastructure. With a hub port, the disruption is both cascading and chaotic, since ships in a hub-and-spoke network or pendulum service adhere to a stringent and fixed sailing schedule. This, in turn, makes it more difficult for shippers to formulate the necessary adjustments in inventory cycles quickly and effectively. Port diversification, particularly on separate coasts, balances the risk of a disruption in a retailer's supply chain in the event of a disruption at one of the ports. The shipper can shift inventories to deviate around the obstacle, and adjust business inventory cycles accordingly, since the amount of extra transit times can be calculated with a high degree of certainty.

Competitive Assessment

As the table below indicates, key east coast port competitors from Boston to Savannah forecast the need to almost double their container throughput by 2015. However, capacity is not expected to keep pace. Based on current information, East Coast North America ports, which were at 80% capacity in 2005, are expected to approach 94% capacity utilization by 2015.

Figure 4-13: East Coast North America Demand & Capacity to 2015

East Coast North America Ports	2005	2015
Demand (TEUs, 000s)	17,040	30,120
Capacity (TEUs, 000s)	21,250	32,030
Utilization	80%	94%

Source – Ocean Shipping Consultants

Other east coast ports are not standing still. Most have announced substantial expansion plans and have been working with railway partners to offer efficient intermodal services into their hinterlands.

In Norfolk, APM Terminals is completing Phase 1 of a private US$450M terminal, which will have 3,200 ft. of berth and 6 ultra-post Panamax cranes and on dock rail. The Virginia Port Authority is expanding another terminal and is planning a new terminal at Craney Island. The Norfolk Southern Railway is building the Heartland Corridor project, which will shorten the intermodal route between Norfolk and Columbus, Ohio by 233 miles and accommodate double stack trains.

In New York New Jersey, intermodal rail projects will be completed in 2007. Tracks 11-18 of the on-dock ExpressRail facility serving APM terminals and Maher Terminal will be completed in 2007 at a cost of US$100M, expanding intermodal capacity from 250,000-450,000 units per annum. Another phase due to be completed in 2008 will bring this capacity to 1 million units. The Port Authority is also building a dedicated road for trucks moving between Port Newark Container Terminal and Express Rail facilities.

The Port of Savannah has branded itself 'America's Retail Port', with 19 on-site import distribution centres and another 70 within five hours. A combination of distribution centres, ready access to two interstate highways, 100 plus trucking companies, two Class 1 railroads and a workforce trained in logistics have attracted shipping business from companies such as Bass Pro Shops, Best Buy, Hugo Boss, IKEA, Kmart/Sears, Lowe's, Pier 1 Imports, Target, Home Depot and Wal-mart.

The Georgia Port Authority has embarked on an aggressive expansion program at Savannah, which will see that port double its capacity in 10 years. Capacity will reach 6 million TEUs by 2020. It is also completing a fifth track at its intermodal container transfer facility (ICTF), which will boost capacity by 25%. The port is also establishing the South Atlantic Chassis Pool, which will free up inland and port terminal capacity at Savannah and Charleston.

The South Carolina State Ports Authority is planning for short and long term expansion at the port of Charleston. It is expanding its largest terminal, Wando Welch, by 50 acres and the North Charleston Terminal by 10 acres, adding about 400,000 TEUs of capacity. It recently turned to sod on a 280 acre terminal at the former Navy Yard in North Charleston, which will increase capacity to more than four million TEUs in five years. Another project would see a massive terminal built by a joint South Carolina/Georgia venture in Jasper County across from Savannah.

In North Carolina, in addition to an expansion at the port of Wilmington, the state Ports Authority has plans to build a new terminal on a 600 acre site on the Cape Fear River, which would include a distribution park. Likewise, the Delaware River Port Authority recently won approval to dredge to 45 feet and thus plans to proceed with a new container terminal and Food Distribution center. Several companies, including SSA Marine, Goldman Sachs, GE Capital, Holt Terminals and two Asian carriers are said to be interested

Findings from Consultations

As part of this project, the consultants interviewed key transportation system providers and existing and potential system users on the factors that influence their logistics decisions, and how those factors impact their consideration of the Atlantic Gateway as a routing for their goods. Feedback received from both users and non users of the Atlantic Gateway indicate similar concerns.

Factors Influencing Logistics/Supply Chain Decisions

- *Infrastructure* – The respondents indicated that adequate infrastructure is important to ensure cargo is moved into and through the Gateway efficiently. Specific items included:
  - Rail connections (port on-dock rail facilities) ;
  - Deep water port with little need for dredging;
  - Good highway access and minimal road congestion; and
  - Port operating efficiencies (such as efficient gate, short truck queues, wheeled operations, weekend and hot gates, chassis pools, good port relations with community).
- *Value-added services* – A number of respondents noted the need for a distribution centre in close geographic location to the port. One company noted that more volume could move through the Atlantic Gateway if the company had a distribution center to support its growth and/or if enough critical mass/volume would exist to justify the expenditure. One major retailer has described the importance of transload facilities to its choice of port routings. The respondent noted that transloading a percentage of its cargo in Halifax will help balance equipment and save supply chain costs.
- *Cost and quality* – One company noted that it all comes down to cost (faster lead times), quality (less damage) and serving the company's customers.
- *Carrier routings* – The respondents require reliable and efficient rail service, and if possible alternatives for inland transportation. One noted that shipping carriers would need fixed

weekly calls, competitive transits, and competitive rates. Another said that carriers would need to serve China.

- *Cargo origin* – For Canadian stores port choice is dictated by cargo origin and since China is the biggest origin, 90% comes through the West Coast.
- *The nature of the product* – Steady, slow movers can move via all water; price-sensitive and seasonal goods must move to market faster.

Awareness of the Atlantic Gateway

When asked if they were aware of the Atlantic Gateway or the Port of Halifax (as the key container handling asset), two U.S. shippers replied 'no' and five said 'yes'. One of the negative replies indicated they were looking at alternative gateways because the WCNA ports cannot meet its requirements.

Potential Use of the Atlantic Gateway

When asked if they would consider integrating the Atlantic Gateway into their future supply chain activities, all respondents indicated, 'yes' or 'possibly.' Two respondents noted that they already use the Port of Halifax (and would possibly ship more through the port). A number of the responses indicated that their use of the Atlantic Gateway would depend on a number of factors, including the ability of the Gateway to meet the company's requirements for speed and cost, and whether or not there is a distribution centre in Eastern Canada. One company noted that it might use the Atlantic Gateway in the future as an IPI gateway only and then perform transloading somewhere in the U.S. Northeast.

Summary of Findings

The supply chain costs via the Atlantic Gateway need to be cost competitive with other gateways. Transit time is not as critical as reliability or cost, but in many cases, the Atlantic Gateway does offer a transit time advantage.

A number of large Canadian shippers have begun to shift traffic from West Coast North America ports to Halifax in order to balance their supply chains. In this respect, transload capacity will play a key role in supporting this shift, as it helps offset the small size of the local population base and lowers overall costs. It also helps make Halifax a 'must call' port.

One clear message is that the Atlantic Gateway needs critical mass. Shippers need additional shipping lines and vessel capacity to commit additional volumes of cargo, while shipping lines need additional cargo volume to commit additional vessel capacity and new service routings.

One respondent who already uses the Atlantic Gateway through the Port of Halifax summarized its value to his company:

- Is a logical gateway for product from China;
- Mitigates a national balance problem;
- Handles the largest vessels from the Suez; and
- Has ample capacity and the potential to increase capacity.

Analysis of Strengths and Challenges

The Atlantic Gateway has several strengths to build upon and a number of challenges that could be addressed in order to fully exploit the opportunities available in the container market segment.

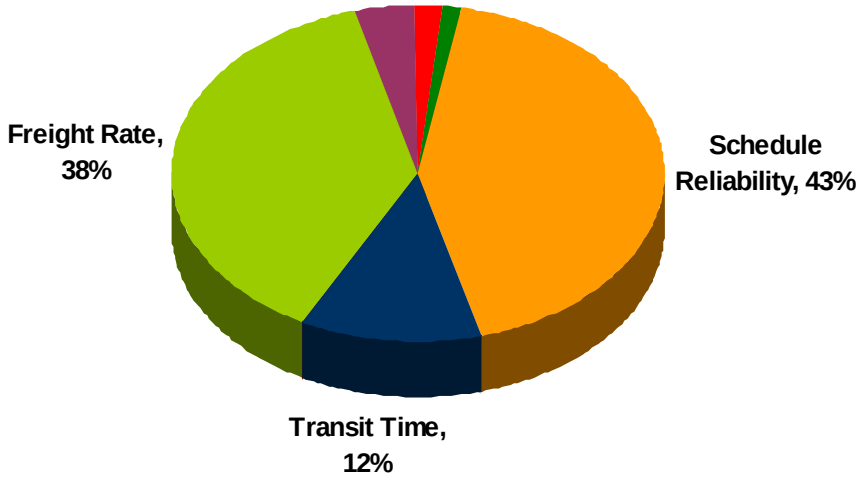
Figure 4-14: Analysis of Strengths and Challenges – Container Market

Strengths	Challenges
■ Deep water harbours	■ Regionally dispersed and small population base
■ Geographic location	■ Lack of marketplace awareness/visibility
■ Reliable intermodal service	■ Lack of value added services
■ Labour stability	■ Dependency on a Single Class 1 Railway
■ Wide market reach	■ Rail and Road Infrastructure Landside Access
■ Cost competitive to key markets	■ Regulatory impediments to short sea shipping
■ Short sea shipping growth opportunities	

Strengths

- *Deep water harbours* – Both Halifax and the Strait of Canso have the deepest harbours on the East Coast of North America. Halifax's container berths have been deepened to 17 metres (55 ft) and 16 metres (52 ft), respectively. It is expected that Melford, a new US$325 million container terminal in Nova Scotia will have berths at least 18 metres (58 ft).
- *Geographic location* – Halifax and the Strait of Canso provide shipping lines with a minimal deviation from shipping routes connecting North Europe and the East Coast of North America, as well as the entrance of the Mediterranean and hence, Suez Canal to East Coast North America.
- *Reliable intermodal service* – Recent research conducted by TranSystems Corporation has identified that schedule reliability is the most important factor for shippers.

Figure 4-15: Shipper Requirements



Source – TransSystems Corporation

The Atlantic Gateway is served by several railways, including Canadian National, the only 'scheduled' Class 1 railway in North America, which provides twice daily unit trains to Montreal and Toronto, with onward service to Chicago and the U.S. Midwest. Other lines include Rail America's Cape Breton and Central Nova Railway, New Brunswick Southern Railway, Windsor and Hantsport, and New Brunswick East Coast Railway.

- *Labour stability* – Unlike west coast ports in both the U.S. and Canada, the Port of Halifax has enjoyed labour peace since 1976. Other ports on the U.S. east coast have enjoyed relatively good labour management relations. In the south eastern U.S., very high productivity levels have been achieved.
- *Wide market reach* – Within North America, the Atlantic Gateway already serves markets in Atlantic Canada, Québec, Ontario, the U.S. Midwest and New England. Externally, it has services to wide variety of markets, including north Europe, Scandinavia, the Mediterranean, Middle East, Indian subcontinent, South East Asia, China, north Asia, the Caribbean, South America and Africa. Within North America, its main markets include Atlantic Canada, Québec, Ontario, the U.S. mid-west and New England.
- *Cost competitive to key markets* – Research[72] has indicated that the Atlantic Gateway routing is cost competitive with other gateways to key markets such as Toronto, Chicago, and Memphis. The Nova Scotia Gateway Strategy Development Initiative suggested the TEU cost of a nine ship 8,000 TEU Suez string is cost competitive with an eight vessel 4,850 TEU Panama string of vessels. A study by Professor Garland Chow indicates that for shipments from Shanghai to Toronto, comparing Vancouver, LA/Long Beach, and Halifax gateways, Halifax is comparable in terms of cost and transit time.[73]
- *Short sea shipping growth opportunities* – Short sea shipping between the Atlantic Gateway and the U.S. East Coast is not restricted by U.S. cabotage regulations (although they are restricted from multi-porting). This would allow short sea feeder services to operate between the Atlantic Gateway and ports along the U.S. East Coast. In addition, opportunities between the Port of Corner Brook and the Port of Halifax have been identified. Several studies have also examined the potential to operate short sea services between Halifax and Hamilton, Ontario. Hamilton has been promoting itself as a distribution centre for south western Ontario and has allocated a portion of port lands for this purpose. It has also been promoting the potential of cross-lakes services to Oswego and other points in the U.S.

Challenges

- *Regionally dispersed and small population base* – The Atlantic Region is the same size as Great Britain and France combined, yet only has a population of 2.4 million people. Moreover, it is widely dispersed and separated by vast stretches of water. The region is 1,200 road or rail kilometres from Montreal, the nearest Canadian market of over 2 million people. Boston, which is of similar size, can be reached by short sea feeder in about 24 hours, as it is 384 nautical miles from Halifax.
- *Lack of marketplace awareness/visibility* – When the Port of Halifax was in the top 35 container ports worldwide, in the late 1970s and early 1980s, it had little problem gaining

[72] Booz Allen, AIMS Port-Ability; Bain and Company, 2006.
[73] Garland Chow, A Total Logistics Cost Approach to Measuring Collateral Benefits of Security and Supply Chain Improvements at International Gateways, 2007.

market recognition.[74] As new regions have begun to feed global supply chains and new ports have emerged, the Atlantic Gateway does not have the same brand recognition as it once enjoyed, or what its larger counterparts in Canada, such as Vancouver and Montreal have.

- *Lack of value added services* – AP Moller, the parent company of Maersk Line recently restructured a number of its services in an effort to raise profitability. The service that called at Halifax, the MECL 2 service, now sails from Nhava Sheva (near Mumbai) to Salalah, Jeddah, Algeciras and then directly to Savannah. The service is feeding 19 major distribution centers within 15 kilometres of the port. From relative obscurity in the 1980s, when it was actually smaller than Halifax in the number of containers handled, Savannah has made itself a "must call" port, for lines serving the US east coast, by developing value-added services.

  The Atlantic Gateway has a nascent transload/distribution sector. Efforts to make the Gateway a 'must call' by attracting transload and distribution activity have begun to pay off, with two new operations by Canadian Retail Shippers Association and Consolidated Fastfrate established in the past 24 months.

  Building a transload and, eventually, a distribution sector is of critical importance to the future of the Atlantic Gateway. The transload sector begins to address the problem of the small size of the Atlantic region market. It makes the market bigger than it actually is by driving additional cargo through the port.

  The transload sector is important for both inbound cargo to feed national supply chains in central Canada and to provide containers for regional exporters. The contents of three 40 ft. ocean containers are de-stuffed at a transload facility and re-stuffed into two 53 ft domestic containers or highway trailers. The retailer pays for two units to move inland instead of three and has the option of shipping its 53 ft units to a distribution centre in central Canada or directly to a store. The three 40 ft. containers would remain in Atlantic Canada so that local shippers would obtain access to much needed container equipment.

- *Dependency on a Single Class 1 railway* – CN Rail is the Atlantic Gateway's umbilical cord to markets inland. Efforts to attract additional shipping lines to the Gateway can be inhibited by the presence of a monopoly provider of inland transport, no matter how efficient or customer-friendly.

- *Rail and road infrastructure landside access* – The Atlantic Gateway may have shore side and terminal capacity, but there are issues relating to truck gate infrastructure and moving containers in and out of downtown areas. The location of port facilities in downtown Halifax with narrow streets and few transportation alternatives means that there already is a considerable amount of road congestion. This will increase as traffic to the Port of Halifax grows. This congestion in Halifax adds the equivalent of 50km to 60km of travel time to road transportation to and from the port.[75] Equally important are the safety concerns, exhaust, and incremental commuter times associated with numerous trucks travelling through the centre of a busy city. Saint John and St. John's are experiencing similar concerns, while the proposed new development in Melford will not face this issue.

[74] Containerisation International Yearbook, 1980.
[75] CPCS Transcom, Nova Scotia Gateway Initiative Strategy, 2006.

- *Regulatory impediments to short sea shipping –* While research has identified some market potential for new short sea shipping operations in Atlantic Canada, several regulatory impediments at both the national and international level inhibit the launching of a successful service. In Canada, such obstacles include the 25 percent duty on imported ships.[76] Canada could also engage the U.S. in dialogue to remove trade impediments within the NAFTA region in the same way that barriers to trade in transport services have been effectively reduced or removed in Europe. These discussions could address such aspects as the application of Harbor Maintenance Tax to Canadian goods moving to the U.S. by sea (while not applicable to goods moving by land) and the issue of cabotage (while it is possible to multi-port on a weekly service to New England, cabotage rules prevent optimal asset utilization, thus raising the cost of operating such a service). [77]

[76] Canada announced a free trade agreement with the European Free Trade Association (EFTA), on June 7, 2007. Minister Emerson announced that the agreement provides for a generous phase-out of the tariff over a 15-year period, with a grace period of three years before any cuts begin. This will give the industry a significant period of time to adjust to the new market conditions.

[77] Brooks, M. R., Hodgson, J. R. F. & Frost, J. D., Short Sea Shipping on the East Coast of North America: An Analysis of Opportunities and Issues, 2006.

5.0 Building the Atlantic Gateway

Vision

Development of Canada's Atlantic Gateway requires a foundation for a future transportation network that will take the region and Canada through to the next century. This means not only addressing the important infrastructure and capacity needs for the next 20 years, but also ensuring that land use planning and protection for the Atlantic Gateway does not preclude its ability to respond to the long term opportunities of Asian and Indian economic tigers.

On a national level, the Atlantic Gateway is to become an integral component of Canada's national gateway system along with other key components such as the Asia-Pacific Gateway and Corridor and the Ontario-Québec Continental Gateway and Trade Corridor. This strategic inland rail corridor and national intermodal land bridge with productive, deep water port developments on the Pacific and Atlantic coasts represents a compelling and competitive 'Canadian Solution' to North American cargo congestion.

Figure 5-1: National Gateway System

To succeed as a premier transportation network over the long term, the Atlantic Gateway needs to capitalize on its strategic geographic location and provide a complete package that includes not only phased expansion of capacity to handle future growth, but also a transportation system that is efficient, reliable, secure, and cost competitive.

The proposed vision for the Atlantic Gateway is intended to capture all of these elements:

Canada's Atlantic Gateway is the premiere integrated transportation network on the East Coast of North America

Specifically, this means:

- Improving the efficiency and reliability of the Atlantic Gateway to facilitate trade for Canada's exports and imports; and
- Increasing the Atlantic Gateway's share of international goods and passenger traffic.

The development and promotion of Canada's Atlantic Gateway and associated intermodal rail trade corridors – including consideration of more efficient inland based supply chain activity away from current congestion points – will ensure that Canada has the necessary infrastructure in place to improve competitiveness and take advantage of the growing opportunities in world trade.

Atlantic Gateway Value Proposition

The Atlantic Gateway offers tangible value for North American shippers wanting to connect western Asia and the Indian subcontinent to the central Canada, the U.S. Midwest and the Atlantic region. Since India is a developing market, the Atlantic Gateway will need to encompass Chinese cargo via the Suez from at least the Pearl River Delta region for shipping lines to be viable in the short term. Some U.S. East Coast ports have actually suggested that Suez services could start as far north as Shanghai and be competitive with Panama services. There is also potential for the Atlantic Gateway to develop as a 'gateway hub', whereby it handles short sea feeder cargo transhipped to and from large mother ships onto small feeder ships that sail to smaller ports along the U.S. East Coast and perhaps other Canadian destinations.[78]

Previous research indicates that the Atlantic Gateway is a competitive route for goods destined to inland markets such as Atlantic Canada, Québec, southern Ontario, the U.S. mid-west and New England, especially cargo originating or destined to areas outside North Europe, where Montreal has an advantage. The Atlantic Gateway already handles 'gateway' cargo. It is a key outlet for exporters in Québec and Ontario and a key element of national supply chain strategies. Of the present volume of 480,000 TEUs of full containers at the Port of Halifax, about 75-80% moves inland by rail, to markets in Québec (110,000), Ontario (130,000) and the U.S. mid-west (110,000).

The value proposition of the Gateway is rooted in three key factors – transit times, reliability, and cost competitiveness. These primary elements are complemented by several other positive attributes.

Transit Times

A key element of the Atlantic Gateway's value proposition is its transit times, which make it a competitive alternative to New York, Baltimore and Norfolk. Halifax is 492 nautical miles closer to the entrance of the Mediterranean than New York, and 638 miles closer than Norfolk. The Strait of Canso is even closer. The sailing time from Halifax to New York is approximately 36 hours. Theoretically, it is possible for cargo discharged in Halifax to be more than half way to Chicago before the vessel docks in New York, let alone Norfolk or Baltimore.

[78] James Frost, Shipping Out: The Development of a Gateway Hub at the Port of Halifax, 2005.

Atlantic Canada should be a natural Canadian gateway for Indian products, as its largest port, Jawaharlal Nehru (JNP) near Mumbai is 7,673 nautical miles from Halifax compared with 9,513 miles from Vancouver, which equates to 92 hours of sailing time (not including port calls or transhipments). [79] Shipping to India via Vancouver requires at least two transhipments (e.g. Hong Kong and Singapore), whereas shipping via Halifax requires one at most (e.g. Colombo). Likewise, the rail distance from Vancouver to Toronto is 2,754 miles, whereas it is 1,115 miles to Halifax.

In terms of the U.S. mid-west market, transit times are 54-59 hours from Nova Scotia to Chicago, which is competitive to other gateways. CN Rail has recently opened an intermodal terminal in Memphis and in promotional videos has been emphasizing its connections to both the Pacific and Atlantic Gateways. Volumes could be greater if a dedicated unit train service was provided, but present volumes do not justify this investment. Shippers need the service and the railway needs the shippers to commit in order for it to happen.

With respect to the tri-state area (New York, New Jersey, Connecticut), this market was examined in 1998 in relation to the Maersk Sealand / Port of Halifax superport bid. Certain proponents urged examination of a 'back door' routing to New York via a collection of short lines through New England, whereas others urged a 'front door' routing via short sea feeder vessels transhipping from mother ships too large to get into New York Harbour. Whether such a 'back door' exists has not been examined for this study, but it is likely that considerable investment would be required in rail infrastructure to accommodate double stack containers to provide seamless service.

One of the roles the Atlantic Gateway can continue to play is to top up and lighten vessels on the way to or from New York. As ships get bigger, the Atlantic Gateway will have an increasing role, even as New York Harbour is being dredged.

Reliability

While concrete data was not available (such as a reliability indices or published dwell times), stakeholders indicated that the Atlantic Gateway has a sound reputation for reliable operations, especially when compared to the Port of Vancouver. In particular, stakeholders observed that congestion and delays through Atlantic Gateway facilities were virtually non-existent. They were also very aware of the labour stability enjoyed by the gateway's primary facilities over the past 20-30 years.

Cost Competitiveness

The Atlantic Gateway offers a cost effective supply chain to inland markets due to its location on the great circle route, its close proximity to international shipping lanes, its deep water harbours and good rail and road connections to inland markets. A comprehensive supply chain cost analysis was outside the scope of this project, however, other recent studies indicate that the Atlantic Gateway is cost competitive with ports in New York and Norfolk.[80]

[79] The advantages from the Strait of Canso are even greater.

[80] Booz Allen, 2006; Garland Chow, A Total Logistics Cost Approach to Measuring Collateral Benefits of Security and Supply Chain Improvements at International Gateways, 2007.

Using a Suez-East Coast North America routing could yield lower unit costs to carriers employing large container vessels. Recent research[81] has indicated that the Atlantic Gateway routing is cost competitive with other gateways to key markets such as Toronto, Chicago, and Memphis. The Nova Scotia Gateway Strategy Development Initiative suggested the TEU cost of a nine ship 8,000 TEU Suez string is cost competitive with an eight vessel 4,850 TEU Panama string of vessels. A study by Professor Garland Chow indicates that for shipments from Shanghai to Toronto, comparing Vancouver, LA/Long Beach, and Halifax Gateways, Halifax is comparable in terms of cost and transit time.[82]

Other Benefits

The following attributes complement the primary elements identified above:

- *Efficient supply chain management* – The Atlantic Gateway would positively impact on businesses reliant on the movement of goods and services throughout North America. Effective and efficient gateways on both Canadian costs would offer all businesses increased choice, greater competition (and hence lower costs) and increased reliability of their supply chains.

  The Atlantic Gateway also offers an efficient and effective method for large North American retailers to balance their supply chains through multiple ports for several reasons. First, increasing throughputs are requiring shippers and retailers to increase their supply chain capacity through port diversification. Second, relying solely on one port results in an enormous imbalance of empty containers. A supply chain management practice utilizing two coasts mitigates the imbalance. Finally, a two coast risk management strategy balances the risk of a disruption in a retailer's supply chain.

- *Market reach and specialized services* – Rather than rely on one market, Asia, as does Vancouver, or North Europe, as does Montreal, the Atlantic Gateway has the ability to serve multiple markets, both internally and externally. The Atlantic Gateway has shipping services to and from North Europe, Scandinavia, the Mediterranean, Middle East, Indian subcontinent, South East Asia, China, Japan, Korea, Africa, the Caribbean and South America.

  The Atlantic Region provides carriers with strong export volumes, especially refrigerated cargo. This is one reason that Halifax has enjoyed the support and patronage of several 'legacy' shipping lines, including Hapag Lloyd, Atlantic Container Line Zim and Oceanex, that have served the market since containerized shipping began.

- *Applications of new transportation and information technologies* – Innovative processes and systems will play a key role in the effective development and use of the Gateway. The transaction costs of trade and travel can be reduced through more efficient processing of passengers and cargo. Since the terminals at Halifax and Melford are in the early stages of development with respect to new technologies, continuous improvements can be more easily implemented, such as customs clearance procedures that would improve the productivity of cargo operations. Greater use of Intelligent Transportation Systems (ITS) would also contribute to increasing Gateway efficiency and expanding the productivity of existing infrastructure, while improving the safety and security of the system.

[81] Booz Allen, 1996, AIMS Port-Ability; Bain and Company, 2000, Booz Allen, 2006.
[82] Garland Chow, 2007.

Adoption of new security and border technologies could also help position the Atlantic Gateway as North America's first Green Lane[83] port for container movements from international markets to the U.S.

- *Synergies with other Canadian gateways* – The Atlantic Gateway is complementary with other Canadian gateways and corridors not only on the West Coast but also in Ontario and Québec. This network of gateways and corridors provides supply chain users in both Canada and the U.S. with improved connectivity, flexibility, reliability, and frequency by which to move their products.

Roles, Responsibilities, Governance and Accountability

The Atlantic Gateway is best grounded with clearly defined roles and responsibilities between the public and private sectors and by ensuring that governments are accountable and investments are transparent. Governments will need to work with private stakeholders and industry and labour associations to promote Atlantic Canada as a strategic gateway and a pivotal link in the global transportation system to the economic benefit of Canada.

No single entity can unilaterally address all the interconnected issues to advance all aspects of the Atlantic Gateway. Coherent action, such as marketing and awareness programs, will require partnerships at all levels - with federal/provincial/municipal governments, Crown corporations, the private sector and industry associations.

Development of the Atlantic Gateway will need to be driven by market demand and opportunity. Investments must be evidence based and consistent with projected traffic volumes. The federal government will need to build on partnerships rather than substituting or displacing stakeholder-driven initiatives and consensus since the private sector is best positioned to make investment decisions for their own long-term profitability. Consideration should also be given to the use of Public-Private Partnerships, where appropriate, to leverage private sector investment and innovation in addressing Atlantic Canada's public infrastructure needs.

It is the federal government's responsibility to foster the efficiency, safety, security and sustainability of all modes of the national transportation system. Governments should set the right climate for investment, safeguard public interest and safety and protect the environment, but should play a supporting role in providing an environment in which businesses, ports and airports can grow and be globally competitive. This involves appropriate investments in public infrastructure such as highways, securing the efficient administration of Canada's borders, pursuing Canada's interests in international commerce and positioning Canada to compete and prosper in the global economy, as well as training, business development and planning.

Other roles of the federal government will be to:

1. Provide leadership in generating an overall vision for policy-driven and evidence-based action;
2. Work with appropriate stakeholders to bring a systems approach to investment, planning and policy development for the common good of the initiative;

[83] Green Lane refers to expedited cargo clearance and processing for highly secure shipments from international markets to the U.S. It is expected that Green Lanes will become a reality in the near future.

3. Advance analytical studies and planning work to ascertain global demand, competitiveness and appropriate responses;
4. Support business development with regulatory frameworks that facilitate action; and
5. Integrate the Atlantic Gateway with aligned federal policies, such as competitiveness, global commerce, national gateways and corridors strategies, infrastructure, security and border management, environmental protection and innovation.

The provincial and municipal governments will have key roles in the Atlantic Gateway, rooted in their constitutionally-protected jurisdictional responsibilities. Major infrastructure investments, human resource initiatives and policy renewal will need to be assessed and delivered in collaboration with federal partners.

The Atlantic Gateway Federal-Provincial Officials Committee will be the primary forum for collaboration between governments in the development of the Atlantic Gateway. The Committee, which is comprised of 10 members from each of the Atlantic Provinces, Transport Canada, and ACOA, will be accountable to their respective departments, ministries and governments in their activities and achievements.

The Atlantic Gateway should also build consensus and sound governance and accountability regimes by collaborating with other gateways and corridors in the country, including the Asia-Pacific Gateway Council and similar organizations in the Detroit-Windsor Corridor and the Ontario-Quebec Continental Gateway and Trade Corridor.

Atlantic Gateway Action Plan – An Integrated Approach

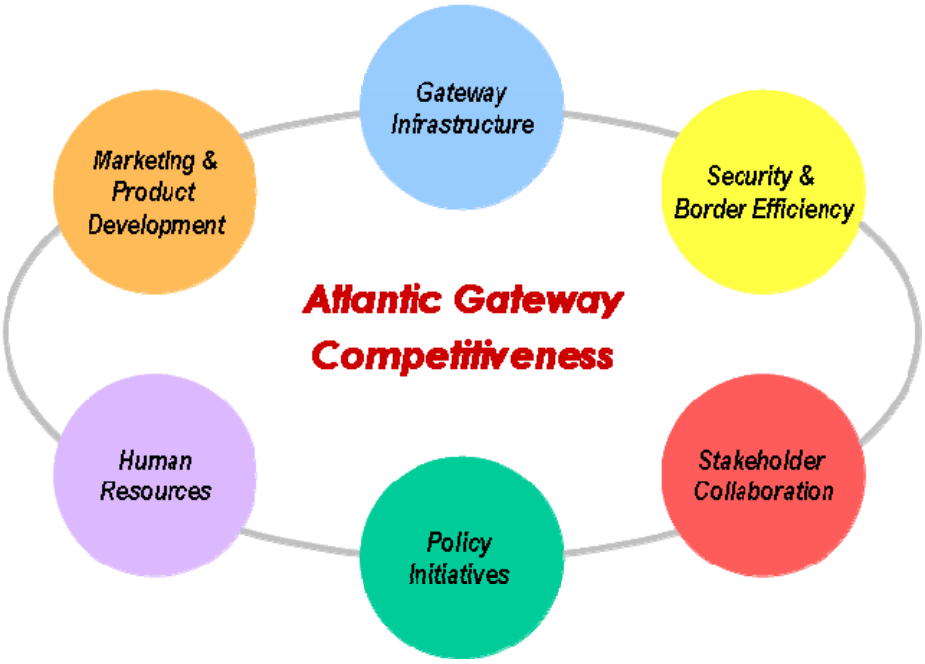
In order to realize the Atlantic Gateway's vision and full potential, improvements could be made in several core and interrelated areas, including:

- Improved marketing and product development;
- Gateway infrastructure improvements and protection;
- Security and border efficiency improvements;
- Stakeholder collaboration;
- Policy initiatives to improve competitiveness; and
- Development of the region's human resources.

A number of possible solutions have been identified to address the various issues identified in the previous section. These initiatives are based on feedback obtained from stakeholder consultations and workshops, as well as from previous research and analysis.

This Action Plan is not a capital program and does not, in any way, represent a funding plan for the next 20 years. It is a plan for future action to begin greater coordination of industry stakeholders and government in assessing, planning and implementing critical transportation infrastructure and policy initiatives required to meet the objectives of the Atlantic Gateway.

Figure 5-2: Integrated Action Plan



The possible initiatives have been categorized into those which are regional in nature and those which should be pursued on a national level. Many of the proposed national initiatives have already been identified as being beneficial for the Asia Pacific Gateway and Corridor Initiative and are currently being promoted by other organizations.

Marketing & Product Development

As referenced earlier in the report, the advantages of Atlantic Canada as an international transportation gateway are not well known in the marketplace, in part because they are based on new and changing market circumstances. As a result, a critical action item for the gateway will be to ensure that the marketplace and its key stakeholders – shippers, shipping lines, agents, importers and exporters, investors, government policy makers, and regulators – are informed and understand the Gateway's advantages and opportunities.

Growth in Atlantic Gateway traffic is projected to come from these three sources: organic growth in existing markets, Asia-North America traffic and Western Asia-India subcontinent. Each of these will require early stage marketing and product development initiatives to build awareness of the Gateway's value proposition and to build momentum amongst system users that will build critical mass. Not surprisingly, marketing and product development initiatives will therefore play a critical role in building the Atlantic Gateway. These functions could encompass a broad range of activities, including:

- *Marketing and awareness* – It has been suggested that the Atlantic Gateway should:
  - Develop a strong and consistent brand identity (the Atlantic Ocean is a big place, with many potential 'Atlantic gateways' – one possibility is to review the Province of Nova Scotia's 'Canada's Atlantic Gateway' brand);
  - Develop a comprehensive marketing strategy and action plan to attract more traffic from existing and new domestic and international markets and supply chains;
  - Undertake trade missions to key target markets (this could involve assistance from the Government of Canada); and
  - Consider increasing in-country representatives in key markets (e.g. India and China as well as Chicago, New York, and Toronto).
- *Strategies to capture market share* – Stakeholders also noted that in order to grow and prosper, the Atlantic Gateway should consider identifying sectors and/or routes where it has the ability to capture market share from U.S. East Coast competitors (in particular, it could target Central Canadian shippers currently shipping via New York). It could also consider pursuing new hinterland markets such as Memphis and upper state New York.

Stakeholders also noted that in order to foster Gateway development, action could be taken to improve the region's value proposition and cost competitiveness:

- *Value proposition* – Several initiatives were suggested to increase the Gateway's value proposition, including:
  - Establishment of new value added services along the supply chain to increase the gateway's value and attractiveness and make it a 'must call' destination (consistent with the success achieved by Savannah and Norfolk);
  - Expansion of transload facilities to enable more cost effective goods movement through the Gateway (balancing import and domestic loads and repositioning containers where they are required); and
  - Establishment of a Distribution Park to develop synergies and expertise in the logistics and supply chain sectors.
- *Competitiveness* – In order to remain competitive with other gateway jurisdictions, the Atlantic Gateway must also continuously strive to improve its overall competitive position. Some of the possible mechanisms identified to accomplish this include:
  - The introduction of a container terminal gate reservation systems; and
  - Monitoring and implementing initiatives that improve the gateway's competitiveness and market share.

Marketing & Product Development						
Regional Initiatives	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*
■ Supporting the development of a strong and consistent brand identity, including identification of the value proposition						
■ Supporting the development of a comprehensive marketing strategy and action plan for existing and new domestic and international markets and supply chains						
■ Supporting the expansion of in 'In-Country' representatives in key markets (e.g. India, China, Chicago, and Toronto)						
■ Supporting the expansion of transload facilities by private sector operators (e.g. retail, reefer, 3PLs, and freight forwarders)						
■ Supporting the development of distribution park/distripark facilities by private sector operators						
■ Supporting the development of a container terminal gate reservation system by port terminal operators						
■ Supporting the development of direct unit train service to Chicago and Memphis by CN Rail						
■ Supporting the expansion of short sea shipping operations (to open new markets and add to critical mass)						
National Initiatives						
■ Supporting coordinated trade missions to key markets						

Infrastructure Planning and Support

A key challenge for the Atlantic Gateway will be to ensure that it has sufficient capacity to accommodate anticipated long term future traffic growth. Any capacity shortfall would not only damage the reputation of the Atlantic Gateway but severely restrict the Gateway's ability to capitalize on the market opportunities identified in the previous section.

Further work could be required to identify additional projects and productivity gains needed to meet growth targets. Detailed supply chain mapping and modeling is required for definitive conclusions about timing and sequencing of projects. This work could include establishing a detailed work plan for implementation of project and policy initiatives and an assessment of the demand-capacity analysis, and in particular demand against each supply chain, prior to infrastructure investment.

Investment and close collaboration will likely be required by both the public and private sectors to:

- *Optimize the capacity and efficiency of existing assets* – Several initiatives have been raised as options to improve the throughput and capacity of the existing gateway system. These include:
  - Development of a multimodal action plan to identify infrastructure priorities, timing, cost, and funding sources for highway, rail and connector development;
  - Development of a simulation tool/program to determine the systemic benefits/relative impact of different infrastructure investments;

- Upgrading major highway networks to support the flow of cargo from container ports to border crossings and Central Canada;
- Improving truck access and turnaround times at existing container terminals (to compete with best in class in North America). In particular, it was noted that consideration should be given to establishing dedicated 'transload' gates; and
- Improving container terminal access through downtown Halifax (this issue is only expected to become more problematic as transload operations increase).

- *Develop new/incremental capacity* – The need for additional capacity will be analyzed and sequenced by the Atlantic Gateway Federal Provincial Officials Committee in the context of rigorous analytical work. Incremental capacity will not be developed unless it is quantitatively demonstrated by market demand in optimal locations.

  A number of ideas have also been suggested to expand the Gateway's existing capacity, including:

  - Plans could be developed for new berth capacity, local highway improvements into and out of industrial parks, as well as industrial land to accommodate transload activity; and
  - Global best practices should be reviewed and evaluated for potential application in the Atlantic Gateway.

- *Infrastructure funding criteria* – Develop criteria that must be met in order to advance Atlantic Gateway projects for funding.

Figure 5-3: Asia-Pacific Gateway and Corridor Infrastructure Funding Selection Criteria

- The project responds to a demonstrated (qualitative and quantitatively) need to address capacity constraints and bottlenecks in support of Asia international trade flows;
- The project has demonstrated benefits, such as economic/social impacts, congestion reduction and a greater than one benefit cost ratio;
- The project improves safety, security and reliability;
- The project fosters local support for important transportation corridors/infrastructure;
- The project promotes sustainable transportation principles by reducing environmental impacts including criteria air contaminant emissions and greenhouse gas emissions. The project leverages public and private funding, where appropriate, including alternative financing mechanisms.

Source – Transport Canada

- *New financing mechanisms* – It was suggested that the Gateway stakeholders should explore new financing tools to encourage infrastructure and ancillary service investments (e.g. distribution parks, short sea shipping services, off-dock facilities).
- *Land use planning* – Gateway stakeholders in select constituency regions, such as Halifax, Saint John, and St. John's, are beginning to face pressures relating to land use options in and around ports, rail corridors, etc. In order to ensure that the Atlantic Gateway is able to respond to longer term market opportunities, one possible solution is to set aside certain lands to minimize residential and non-compatible use encroachment. The Halifax Port Authority has already been doing this.

Infrastructure						
Regional Initiatives	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*
■ Working with Gateway stakeholders to develop a list of potential infrastructure projects for Atlantic Canada						
■ Supporting the development of a simulation program/tool to determine the relative impacts of different infrastructure investments (e.g. in conjunction with regional educational institutions)						
■ Supporting a review and evaluation of global best practices and their application in the Atlantic Gateway						
■ Establishing 'Transportation Land Reserves' to protect critical gateway land and rights of way for future development						
National Initiatives						
■ Developing criteria for potential funding of Atlantic Gateway projects, based on Asia-Pacific Gateway and Corridor Initiative Transportation Infrastructure Fund						
■ Developing new financing mechanisms to encourage infrastructure and service investment (e.g. short sea shipping services, off-dock services)						

Security and Border Efficiency

It is critical to protect Canadian and the United States borders against potential threats to our health, security, and economy. Therefore, the Atlantic Gateway should be committed to providing smarter, more secure and efficient borders.

While Atlantic Canada's proximity to Asia via the Suez Canal is a key strategic advantage, its geographic location also means that goods and people must navigate through multiple borders before they reach their final destinations. As a result, the Atlantic Gateway will increase its efficiency if it works to address several issues related to border processes and transportation security. These include:

- *Changing threats* – The security environment is ever-evolving with varying threats to both goods and people movements. To address risks and vulnerabilities in this dynamic environment, there is a need to identify and address challenges to the security of key infrastructure. While the security of the Atlantic Gateway will be addressed as part of Canada's national approach, there will be a need to address specific security requirements based on geography, types of movements, and threats faced from increased traffic;
- *Time delays* – Security and border processing for all modes of transportation typically requires review by officials in a checkpoint environment. This approach has, since 9/11, grown in time per transaction due to new equipment deployment and risk management processes. These chokepoints demand a sustainable model of processing so that delays are reduced; and
- *Dual clearance* – The Atlantic Gateway initiative will position Canada's east coast as a crossroad between Asian markets and the North American economy. However, the double clearance of cargo and passengers transiting through Canada en-route to the U.S. could mitigate the natural advantage Canada hopes to capture through Gateway development.

Land border delays are the most visible symptom of this issue, but there are clear implications for air cargo, container transhipping, and air travellers as well.

Security is everyone's priority. The adoption of risk management techniques, process re-engineering, new technologies, and international cooperation can all contribute to the mitigation of delays and bottle-necks that are the unintended result of new security measures. Some of the initiatives that have been suggested to improve security and border efficiency include:

- Becoming an early adopter and implementer of leading-edge security technology services (some believe that this could provide the Atlantic Gateway with a competitive advantage);
- Pursuing the establishment of a 'global Green Lane' to the U.S. to expedite cargo clearance and processing through the integration and exchange of transportation and trade data. Benefits of such a system could include seamless real time anywhere available container identification, security alerts for tampering detection, temperature monitoring, and hazardous or explosive materials detection. In the future, sensors could be added to base security devices that detect light, chemicals, radiation, and ammonia, expanding its security capabilities even further;
- Revising the new APHIS fee structure for containers entering the U.S. from Canada (a differential fee structure for container inspections in Canada and the U.S. means cargo moving en-route from Canadian gateways to U.S. markets are at a competitive cost disadvantage relative to cargo moving en-route from U.S. gateways to U.S. markets); and
- Pursuing coordinated clearance for passengers and goods. Seamless border processes and the joint clearance of passengers and goods at the North American perimeter (e.g. first point of entry) are a solution in the longer term and eliminate the need for an obtrusive clearance process for transborder movement of goods and people.

Security & Border Efficiency						
Regional Initiatives	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*
■ Exploring the feasibility and desirability of obtaining 'Green Lane' certification						
■ Support and/or assisting in the introduction of new security equipment and technology applications						
National Initiatives						
■ Working with the U.S. to address APHIS container inspection fee cost structure inequities						
■ Pursuing coordinated clearance with the U.S.						

Stakeholder Collaboration

Building the Atlantic Gateway will require the participation of many stakeholders. Success, however, will depend upon their ability to work together with a clear vision, commitment, and coordinated action plan. While this already occurs in the Atlantic region in varying degrees, widespread feedback from external stakeholders noted that a greater degree of cooperation and coordination was required by regional governments, departments, associations, and private-sector organizations.

Stakeholders noted that constituents in Atlantic Canada must accept the realization that not all of Atlantic Canada's transportation system components (and their respective regions) will have

the same role or potential opportunities. Gateway opportunities will be determined by the marketplace and/or the private sector, likely limiting their scope and reach. That said, stakeholders were of the opinion that benefits – either direct or indirect – would accrue to the entire region if constituents are able to develop a balanced package of priorities and initiatives, and speak with a common voice.

Some of the potential mechanisms identified to improve stakeholder coordination in the region include:

- *Developing a communications plan/strategy* – There are enormous expectations associated with the Atlantic Gateway and there are numerous stakeholders that will consider themselves worthy of inclusion in Gateway initiatives. As a result, it has been suggested that efforts could be undertaken to clearly define and communicate what the Gateway concept is (and is not) in Atlantic Canada. The continuation of the Atlantic Gateway Federal-Provincial Officials Committee initiative could play an important role in this regard;
- *Creating an Industry Advisory Group* – To provide advice and guidance to the public sector. This group should have a 'stake' in the Gateway, either as investors or service providers; and
- *Advancing initiatives for other opportunity sectors* such as energy, cruise, liquid bulk, air cargo and air passengers.

Stakeholder Collaboration						
Regional Initiatives	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*
■ Continuing to work with the Atlantic Gateway Federal-Provincial Officials Committee on a communications protocol						
■ Initiating research/advancing initiatives for other opportunity sectors						
■ Assisting in the establishment of an Industry Advisory Group to provide direction and feedback						
National Initiatives						
■ None at this time						

Human Resources

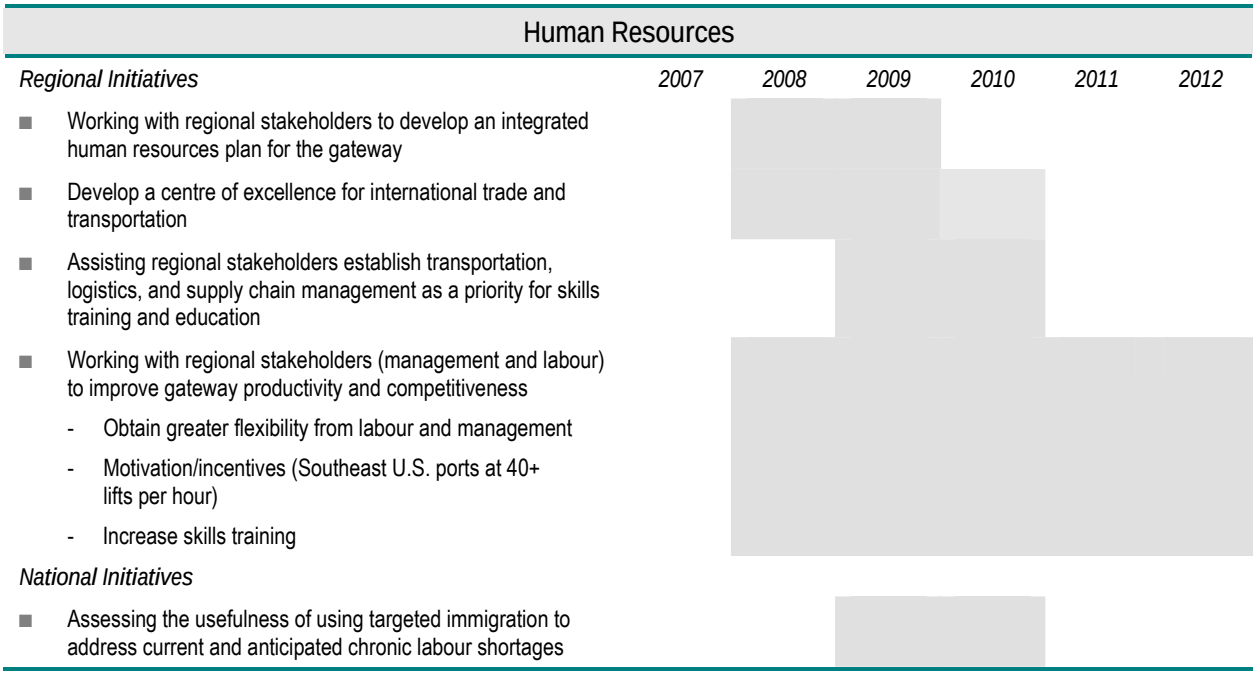
An adequate, well-trained, and reliable workforce will be essential for the smooth and effective operation of the Atlantic Gateway. Contrary to widespread perception, however, Atlantic Canada is facing with several human resource challenges, including:

- *Labour supply* – Statistics Canada's Labour Force Survey data for December reveals that Atlantic Canada's labour force averaged roughly 1.2 million people in 2006 – the second consecutive year of zero growth (due to out-migration, an aging workforce, and lower retention rates). With reports of skill shortages increasingly common, a static or shrinking labour pool is going to intensify pressures in the years ahead. Moreover, labour shortages in other economic sectors will limit the leveraging that Atlantic businesses could benefit from the Gateway.
- *Education and training* – While post secondary institutions are increasing the amount and quality of training options in the fields of transportation, logistics, and supply chain management, the numbers of students enrolled continues to lag anticipated demand.

- *Labour productivity and reliability* – An unproductive and unreliable labour force can significantly limit the potential of the Atlantic Gateway. While the labour environment in Atlantic Canada has been relatively stable over the last decade, the region's productivity lags in comparison to competing U.S. East Coast ports.

Some of the strategies that have been proposed to address these issues include:

- *An integrated human resources plan for Gateway operations* – This initiative could also include a marketing and recruitment program to attract younger workers to join the logistics workforce.
- *A centre of excellence in international trade and transportation* – This could act as a focal point for collaboration, a logistics centre of excellence, and a research hub. The federal government would work in close collaboration with provincial and municipal governments, transportation and logistics firms, industry associations, and the academic community to ensure the competitiveness, attractiveness, and growth of the region's transportation, trade, technology, and talent assets. It could provide training for businesses using high level technology, and assistance in the areas of international trade, supply chain management, innovation, human resources, and technology.
- *Skills Training and Education* – Transportation, logistics and supply chain management could be incorporated into the curriculum of several provincial jurisdictions within the Atlantic Gateway. It could encompass community colleges and university level educational institutions and provide scope for technology transfer between academia and industry.
- *Working with management and labour organizations* – This could increase gateway productivity to levels competitive with other ports on the U.S. East Coast. A potential starting point could involve achieving greater flexibility on issues such as call-out periods.
- *Targeted immigration* – This could be evaluated to address current and anticipated chronic labour shortages. This is already happening in the regional trucking industry; it may be necessary to consider immigration strategies to sustain the logistics sector in the region once traffic volumes begin to grow significantly.



Policy Initiatives to Improve Competitiveness

Canada's gateways are not the only option for moving goods and people between markets in Asia and the U.S. In fact, they are not the only alternative for moving goods and people between Asia and Canada, since many U.S. gateways are handling traffic on this trade lane. In order to preserve Canadian jobs and ensure adequate direct transportation service levels to serve Canadian needs, the Atlantic Gateway must be competitive on a global level in all respects.

Federal, provincial, and municipal governments need to create policy and regulatory environments that are consistent with Atlantic Gateway strategies. Through the course of private sector consultations, a number of focus areas were suggested:

- *Policy alignment* – Establishing a pro-competitive policy environment requires the alignment of provincial and federal policies, as well as the alignment of all key departments.[84] As one example, varying weight and dimension restrictions throughout the region and between Canada and the U.S. impede the efficient flow of goods across provincial and international borders. Interstate 95 in Maine is restricted to 80,000 lbs while connecting highways in New Brunswick permit 100,000 lbs. In addition, Route 185 in Québec, the major connector between Atlantic Canada and Central Canada implements spring weight restrictions. Harmonization of these regulations in Atlantic Canada, Québec and Maine would facilitate the viability, scope and reliability of trucking services.

[84]For example - finance, revenue, international trade and export, tourism, industry, customs and duties, public safety and security, inspection services, labour, human resources, immigration, training and education, research and development, environment, competition, public health, and statistics.

- *Fiscal policies* – Atlantic Canada's fiscal environment needs to be reasonably competitive. The challenge is to balance the competitiveness of the Atlantic Gateway while maintaining the service expectations of Canadians. Issues raised through the private sector consultations included:
  - Current port financing stipulations limit the capacity of ports to borrow. A CMA Review Panel recommended a relaxation of these restrictions in 2003.
  - A relaxation of the 25% import duty on new and used marine vessels could stimulate short sea shipping activity in the region, the Great Lakes and the St. Lawrence.[85]
  - Fuel and property taxes, capital cost allowances, and the tax status of certain municipal bond interest payments could be reviewed.
- *Trade policies* - The establishment of a Free Trade Zone would allow businesses to warehouse, manufacture and provide value-added processing to imported goods without being subject to certain customs procedures. The Foreign Trade Zone program of the U.S. has been an effective tool for attracting foreign investment and economic activity. In addition, a Free Trade Agreement with India could support the development of Canada-India trade and bolster the prospects of the Atlantic Gateway.

Risk Factors

There are a number of risk factors which could impact the success of the proposed Atlantic Gateway. These include:

- *Economic slowdown* – Transportation is a derived demand, which is highly dependent upon economic growth and activity. While the long term forecasts for global economic activity are fairly stable, a downturn in global economic conditions would unquestionably have negative implications for the Atlantic Gateway. Presently, the region has a very wide market reach which decreases its vulnerability to economic shocks in any one region of the world. It is recommended that the Atlantic Gateway continue to pursue this diversified strategy in order to better withstand economic slowdowns in key markets.
- *Exchange rates* – As the Canadian dollar has increased in recent years, particularly in relation to the U.S. dollar, some of our competitiveness has been eroded. As a result, it is imperative that the Atlantic Gateway and its stakeholders strengthen the value proposition by pursuing initiatives aimed at maximizing the efficiency and productivity of the Gateway.
- *Gateway competition* – The Atlantic Gateway is not alone in its goal to participate more fully in the global movement of containers. Many other gateway regions in North America are aware of the potential economic benefits associated with these activities and are aggressively trying to improve their competitive position. As a result, the Atlantic Gateway will need to ensure that it regularly monitors developments in other port regions and addresses important infrastructure and capacity needs.
- *Security and border requirements* – The Atlantic Gateway's prosperity will depend to a large extent on the efficient and cost-effective flow of goods and people across the Canada/U.S. border. To mitigate the unintended delays and bottlenecks associated the so-called

[85] Canada announced a free trade agreement with the European Free Trade Association (EFTA), on June 7, 2007. Minister Emerson announced that the agreement provides for a generous phase-out of the tariff over a 15-year period, with a grace period of three years before any cuts begin. This will give the industry a significant period of time to adjust to the new market conditions.

thickening of the border the Gateway will need to adopt leading edge security measures, risk management techniques, process re-engineering, and seek international cooperation where possible.

- *Continued dependence on a single rail service* – Efforts to attract additional shipping lines and shippers may be inhibited by the presence of a rail monopoly, no matter how efficient or customer-friendly it is.
- *Possible capacity issues in the longer term* – While the emphasis going forward will be on realizing the potential of the Atlantic Gateway, a longer term risk also exists that the Gateway could attract more traffic than it is physically capable of efficiently handling (system utilization rates of 90% or greater, for example, are commonly accompanied by negative performance impacts such as increased dwell times, etc.). Such a development could compromise the Gateway's reputation for reliable and cost competitive handling of goods. Therefore, in order to ensure that the Atlantic Gateway has sufficient capacity in the future to meet the needs of its users, plans could be developed well in advance of capacity thresholds. Also, future Gateway development should not only be flexible and scaleable, but also free of obstacles that could inhibit the Gateway's ability to respond to longer term opportunities.

6.0 Economic Assessment

Current Economic Impact

The Atlantic Canadian transportation network is both a key enabler and a major economic generator of Canada's trade and overall economic development. In order to develop and promote the Atlantic Gateway, it is necessary to understand and quantify its current economic significance. A full report documenting the economic impact of current transportation and logistics businesses and infrastructure in Atlantic Canada is included in Part I of Technical Appendix #2.

Methodology

Clearly, all traffic that travels to Atlantic Canada, switches modes and travels out of Atlantic Canada arguably could be considered gateway traffic. For example, goods arriving by ship from China or India, transported from the Port of Halifax by rail to regions outside of Halifax can be considered gateway traffic. Likewise, crude oil from Hibernia and Terra Nova offshore oil fields shipped to Whiffen Head transhipment terminal and then onto markets in Canada and the U.S. in tankers might be considered gateway traffic. Similar movements involving trucking to or from ports or airports can also be considered gateway traffic.

Another consideration might be a manufacturing firm based in Atlantic Canada shipping goods to other parts of Canada. This would not normally be considered a gateway activity. However, an argument can be made that this firm would not have based itself in Atlantic Canada if Atlantic Canada did not have the logistical links to Canada and the rest of the world. So it can be argued that the production activity of this firm should be included in the economic impact of the Atlantic Gateway.

However, in this study, the boundary of the Atlantic Gateway has been defined in order to be consistent with previous economic impact studies and to provide conservative, defendable results.

> *For the purposes of this study, Gateway businesses are all transportation and logistics businesses and organisations associated with the movement of goods and passengers through the key ports and key airports in Atlantic Canada. Anything 'crossing the tarmac' at the key airports or 'crossing the dockface' at the key port is considered Gateway traffic.*
>
> *The economic activity of manufacturing, oil extraction, fishing or other industries which are dependent on Gateway access for their sales and operations are not considered part of the direct economic impact of the Gateway. These are businesses for which the Gateway 'facilitates' operations.*

The economic impact of tourism spending by airport passengers and cruise passengers in Atlantic Canada is *not* included in the *direct* Gateway economic impact figures.[86] However, the Atlantic Gateway is clearly an important facilitator of tourism in Atlantic Canada as many tourists

[86]Some of the economic impact of the tourism spending makes up part of the *indirect* impact, estimated using multipliers from the Statistics Canada Input-Output model (see Section 3.5 of Technical Appendix #2); therefore including it in the direct impacts would result in double counting.

to the region arrive by air or sea. Therefore, the *direct* economic impact of tourism spending by air and cruise passengers has been provided in a separate account.

Current Economic Impact

Atlantic Canada's marine ports, ferries, airports, trucking businesses and rail companies provide 29,500 direct jobs and a total of $1.13 billion in wages. This is equivalent to almost $46,000 per person year of employment which is 34% higher than the average wage in the Atlantic Provinces, indicating that the transportation sector is one of the higher paying industries.

Figure 6-1: Direct Economic Impact Generated by Atlantic transportation businesses

Component	Jobs	Person Years	Wages ($ millions)	GDP ($ millions)	Output ($ millions)
Marine Ports/Ferries	18,400	15,200	733	1,084	2,463
Airports	7,600	6,400	260	472	1,225
Trucking	1,900	1,600	60	95	176
Rail	1,600	1,400	77	119	208
Total Direct Impact	29,500	24,600	1,130	1,770	4,072

Source – InterVISTAS

In addition to the 29,500 direct jobs generated by Atlantic transportation businesses, the impacts extend into many other industries in the region. Indirect employment is created in industries supplying transportation businesses and induced employment is generated by direct and indirect employees spending their wages in the community. The estimated multiplier effects (direct + indirect + induced) of this activity produce 72,300 jobs or 60,300 person years Canada-wide and GDP of $4.1 billion.[87] Between 85% and 90% of these jobs and GDP are in the Atlantic region.

Figure 6-2: Employment and Economic Impacts of the Atlantic Gateway

	Jobs	Person Years	Wages ($ millions)	GDP ($ millions)	Output ($ millions)
Direct	29,500	24,600	1,130	1,770	4,070
Indirect	15,000	12,600	420	800	2,170
Induced	20,400	17,000	640	960	2,130
Total Impact on Atlantic Provinces	64,900	54,200	2,190	3,530	8,370
Rest of Canada	7,400	6,100	380	570	1,070
Total Impact on Canada	72,300	60,300	2,570	4,100	9,440

Source – InterVISTAS

Direct spending by tourists and other non-business travellers in the Atlantic region generates another 8,400 direct and 12,800 indirect and induced jobs, providing wages of $924 million and GDP of almost $1.5 billion.

[87] A full-time position for one year constitutes a person year of employment (also known as a full-time equivalent); as some jobs are part-time or seasonal, these jobs have been converted to person years.

All of this economic activity generates tax revenues for federal, provincial and local governments, as well as other payroll related payments[88] such as Employment Insurance and Canadian Pension Plan.[89] Annual tax contributions to the federal government from businesses, employees, passengers and other payroll related payments total $380.2 million with the Atlantic Canadian provincial governments receiving an additional $126.5 million. In the case of the federal government, roughly half of this revenue is generated by personal and business income tax. For the provincial governments, the figure is closer to 70%.

Figure 6-3: Annual Tax Contribution – Federal Government

Tax Payer	Item	Amount ($ million)
Businesses	Corporate Income Tax[90]	25.1
	Gross Revenue Charge	3.3
	Federal Lease Payment	4.9
	Marine Navigation Service Fee	8.7
Employees/Employers	Personal Income Tax	162.4
	EI	44.3
	CPP	93.6
Air Passengers	HST – Airfares	32.9
	HST – Airport Improvement Fee (AIF)	1.0
	HST – Air Transport Security Charge (ATSC)	0.8
	HST – Ground Transportation	0.7
	HST - Accommodations	0.6
	HST – Airport Concessions[91]	1.9
Total Federal Tax Revenues		380.2

Source – InterVISTAS

Figure 6-4: Atlantic Transportation Network Annual Tax Contributions by Province[92]

	Federal ($ millions)	Provincial ($ millions)	Municipal ($ millions)	Total ($ millions)
Nova Scotia	202.2	62.0	5.1	269.3
New Brunswick	91.2	36.0	1.0	128.2
Newfoundland & Labrador	77.1	24.5	2.7	104.2
PEI	9.8	4.0	0.1	13.9
Total Taxes Revenues	380.2	126.5	8.9	515.6

Source – InterVISTAS

[88] It is common practice to include these payments in economic impact studies as they are compulsory payments to government programs; excluding these payments would understate government revenues relative to similar studies.
[89] All estimates are based on 2006 tax rates, unless otherwise stated.
[90] Corporate income taxes based on 2005 figures.
[91] Based on 2006 airport concession revenues.
[92] Includes other payroll related payments such as Employment Insurance, Canadian Pension Plan and Workers' Compensation Board premiums.

Container Traffic Projections

While the development of detailed long range forecasts for the Atlantic Gateway fell outside the immediate scope of this assignment, less rigorous traffic projections have been developed for all gateway opportunities in the region, including liquid bulk, other marine cargo, air passenger, air cargo and cruise traffic (see Technical Appendix #1).[93] The purpose of the projections was to determine the economic impact flowing from each opportunity. It should be noted that achieving the identified traffic activity levels will be contingent upon a number of conditions being in place, many of which are outside the control of the Atlantic Gateway, and upon the implementation of a recommended set of initiatives.

As noted earlier, the consulting team recommends that the initial focus of the Atlantic Gateway should be to increase container throughput at Atlantic Canadian ports. In November 2006, CPCS Transcom Limited completed a study for the Province of Nova Scotia[94] comparing container throughputs at Northeastern North America ports with a significant presence in the deep sea market.[95] Their report indicated that New York (50.2%) and Norfolk (20.7%) handled the greatest container volume in this market and that Montréal (13.1%) handled far more cargo than its 'port call profile' would suggest because vessels calling there tended to discharge and load the entire capacity of the vessel to service its specialized local market. In this Northeastern North American market, the Port of Halifax captured a market share of 5.7%. CPCS/Drewry projected growth in the region in a range between 4.7% CAGR and 8.5% CAGR, with the caveat that more growth was possible if there was a fundamental shift in routings toward the Suez Canal.

Figure 6-5: Evolution of Throughput at Main North Eastern ECNA Ports

Port	1991	2001	CAGR 91-01	2002	2003	2004	2005	CAGR 01-05	CAGR 91-05
Halifax	357	542	4.3%	524	542	526	550	0.4%	3.1%
Montreal	576	989	5.6%	1,055	1,109	1,126	1,255	6.1%	5.7%
Boston	125	133	0.6%	145	158	176	189	9.2%	3.0%
New York	1,865	3,316	5.9%	3,749	4,068	4,478	4,800	9.7%	7.0%
Philadelphia	56	179	12.3%	215	147	178	187	1.1%	9.0%
Baltimore	465	493	0.6%	508	529	558	590	4.6%	1.7%
Norfolk	827	1,304	4.7%	1,438	1,646	1,809	1,982	11.0%	6.4%
Above Ports	4,271	6,965	5.0%	7,634	8,199	8,951	9,553	8.3%	5.9%

Source – Drewry Shipping

By using Drewry's methodology and forecast scenarios as a starting point, using a base year of 2006, and amending the forecasting analysis to include container throughput activity at the Port

[93] The term forecast represents a prediction of future traffic activity based on detailed econometric modeling and trend analysis. The term projection is used to describe a less rigorous estimate of future traffic activity. For the purposes of this report, traffic projections have been developed by employing methodologies and forecast scenarios developed in previous studies and adjusting assumptions as required (e.g. adjusting the base year, extrapolating traffic activity beyond the intended forecast period (to 2025, etc.).

[94] CPCS Transcom, Gateway Strategy Development Initiative, 2006.

[95] Only Halifax, Montréal, Boston, New York, Philadelphia, Baltimore, and Norfolk included.

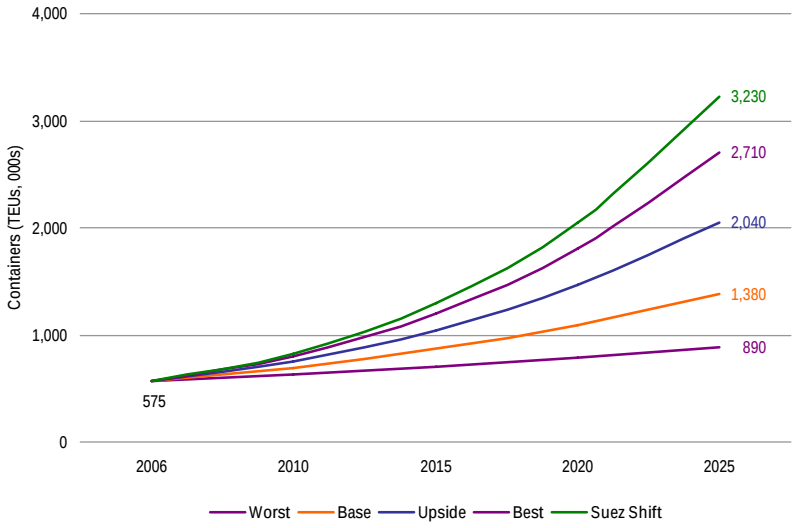
of Saint John[96] and extrapolating traffic activity out to 2025, the consultants developed projections for the Atlantic Gateway using the following four forecast scenarios:

- *Worst case* – assumes that regional market share continues to decline to 4.5% in line with 10-year trend (2.3% CAGR);
- *Base case* – assumes that regional market share achieves the 2005 level of 5.7% (4.7% CAGR);
- *Upside case* – assumes that regional market share achieves the 10-year average of 7.0% (6.9% CAGR); and
- *Best case* – assumes that regional market share achieves the 10-year maximum of 8.1% (8.5% CAGR).

Consistent with the approach taken in the *Nova Scotia Gateway Strategy*, the consultants also developed traffic projections for an additional scenario (9.5% CAGR) that contemplated a more aggressive shift in supply chain activity in favour of Suez Canal routings for Asia-North America cargoes. A 'fundamental shift' would see a significant portion of Asian cargo presently moving via the Panama Canal, shift to Suez routings. One could argue that a similar shift has occurred over the past 2-3 years with the re-emergence of several all-water services direct from north Asia to Savannah, Norfolk and New York. However, further analytical work is necessary to draw any definitive conclusions about the growth in container traffic and the timing of investments to support the container opportunity.

Working from a current traffic base of 575,000 TEUs,[97] the corresponding container traffic forecasts are presented below.

Figure 6-6: Atlantic Gateway Traffic Projections – Drewry Shipping

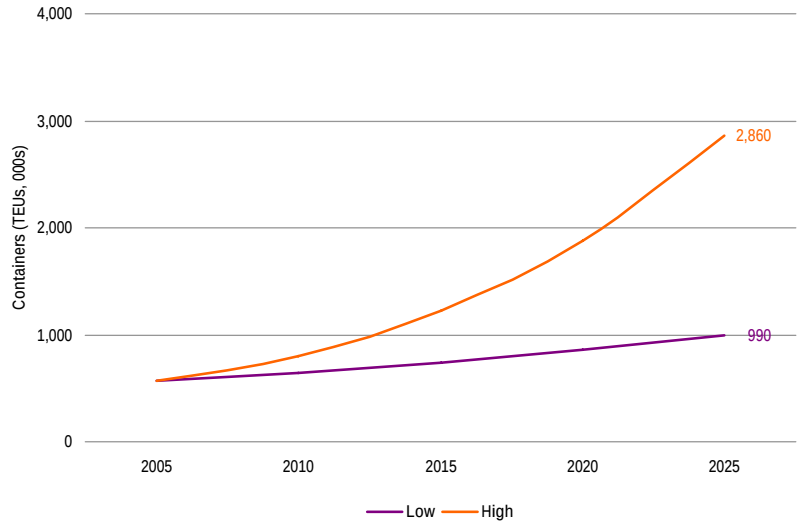


Source – Drewry and InterVISTAS

[96] The Port of Saint John was added because of its relatively high growth potential.
[97] 2006 traffic levels for Port of Halifax (531,000 TEUs) plus the Port of Saint John (45,000 TEUs).

The consultants reviewed these container forecasts against those prepared by Ocean Shipping Consultants [98]. The corresponding container traffic forecast ranges were largely consistent.

Figure 6-7: Atlantic Gateway Traffic Projections – Ocean Shipping



Source – Ocean Shipping and InterVISTAS

In order to determine the economic impact flowing from the container opportunity, the consultants were asked to identify the most probable outcome for container activity in 2025. When selecting the most probable outcome from a range of different forecast scenarios, as is required here, it is common practice to exclude the best and low case scenarios and instead select a mid-range scenario. With three mid-range scenarios to choose from, establishing the most probable scenario for the Atlantic Gateway required the consultants to examine their future outlook of the key factors affecting container activity, and by way of this process, estimate the anticipated course of Gateway activity. As with any forecast or projection, however, there is uncertainty regarding many of these factors, such as the outlook for the local and world economies and the structure of the marine and global supply chain industries. The nature of future Gateway development and capacity and competition on the East and West Coasts will also affect future Atlantic Gateway traffic. As a result, no forecast methodology is able to provide perfectly accurate results in predicting the future.

The consultants estimate that the most probable level of container traffic activity for the entire Atlantic Gateway in 2025 will be approximately 2.04 million TEUs, an increase from 2004 Atlantic-wide traffic levels of 720,000 TEUs. This figure corresponds to Drewry's Upside Case Scenario and would require that the Atlantic Gateway achieve a market share of East Coast North America container traffic in 2025 of 3.9% (the Gateway's current market share is 4.2%).[99] As this figure does not envisage that the Atlantic Gateway will increase its market position on the East Coast of North America, it is more conservative than most other private sector

[98] Ocean Shipping Consultants, Containerport Markets in the Americas to 2020, 2005.

[99] In contrast to the Drewry figures, these market shares are based on a market of all ECNA ports, which includes Charleston and Savannah, but does not include inland ports such as Montréal.

projections. If there is a fundamental shift towards Suez Canal routings for Asian cargoes to North America, potential traffic in 2025 could significantly exceed this figure.

This projection requires a growth rate of 6.9% CAGR over the next 19 years, which equals the growth rate in North American traffic from 2000-2005. It is expected that the Atlantic Gateway will derive this future container traffic activity from three separate market segments:

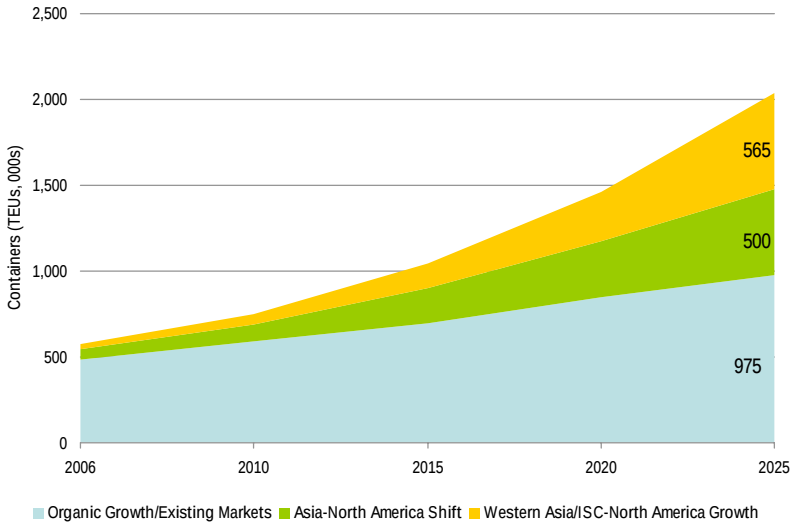
- *Organic growth of existing markets* – As noted earlier in the report, the Atlantic Gateway (via the Port of Halifax) is already an established gateway to North America. Accordingly, it is anticipated that markets presently served by the port will continue to grow and expand thus providing additional traffic opportunities for the Atlantic Gateway. While the Atlantic Gateway has not benefited in recent years from the organic growth experienced in these markets, the consultants strongly believe that aggressive marketing/awareness building, consistent communication of the Gateway's value proposition, and capacity constraints at ports currently handling this traffic will significantly enhance the Atlantic Gateway's ability to more effectively compete and capture traffic in this market segment (especially as the Gateway's services expand and progress is made towards achieving critical mass). Specifically, the consultants anticipate that traffic to/from existing markets will increase from 514,000 TEUs in 2006[100] to approximately 975,000 TEUs in 2025. Traffic growth in this sector is expected to occur on a steady and consistent manner throughout the forecast period at a CAGR of approximately 3.7%, which is slightly higher than the 3.2% growth rate seen in the region since 1995.
- *Asia-North America traffic* – Increasingly, products from countries in East Asia (that historically have moved across the Pacific Ocean) are being shipped via the Suez Canal due to increased congestion and dwell times at West Coast North America ports and congestion through the Panama Canal. Expectations are that this trend will not only increase but grow considerably as more and more post-Panamax and mega-sized container vessels are introduced into the world fleet. With a solid value proposition, it is expected that the Atlantic Gateway will be able to increase its participation in such flows from roughly 20,000 TEUs in 2006 to approximately 500,000 TEUs in 2025. It is anticipated that the majority of the traffic in the first 10 years of the forecast period (2006 to 2015) will be derived primarily from major Canadian retailers. Post 2016, traffic in this sector is expected to accelerate due to increased capacity restrictions at West Coast ports as well as the introduction of increased numbers of new generation large container vessels into the world fleet.
- *Western Asia/Indian Subcontinent traffic* – In recent years, the marketplace has also witnessed the establishment of countless numbers of production centres in Western Asia and the Indian subcontinent. Going forward, it is expected that industrial production will continue to shift west, to countries such as Malaysia, Vietnam, and Indonesia, as well as to India and Pakistan. Moving products from these regions to North American markets is shorter via the Suez Canal than through traditional Pacific or Panama Canal routings. Currently, the Atlantic Gateway handles about 41,000 TEUs of traffic from markets in the Indian Subcontinent and Western Asia. As these production shifts continue to manifest themselves, traffic to/from the region is expected to become an important traffic source for the Atlantic Gateway, reaching over 565,000 TEUs by 2025. Between 2006 and 2015, growth in this sector is expected to be relatively low, reflecting the lesser developed

[100] Only non-Asian and non-Indian subcontinent container traffic at Port of Halifax and Port of Saint John included.

manufacturing base in the region. By 2015, traffic in this segment will begin to accelerate, reflecting the growing manufacturing base in the region as well as infrastructure improvements in countries such as India that will permit more efficient flows of goods from manufacturing centres throughout ISC countries to export ports. By 2020, it is assumed that production in the region will accelerate further as manufacturing infrastructure and activity continues to grow.

The projected traffic in 2025 by market segment is presented below.

Figure 6-8: Projected Atlantic Gateway Container Traffic by Market Segment



Source – InterVISTAS and MariNova

Economic Impact of Achieving the Vision

A complete report on the economic impacts for all gateway opportunities is provided in Technical Appendix #2.

Successful development of the Atlantic Gateway has the potential to generate additional economic benefits for the Atlantic Canada region and Canada as a whole. Gateways are not simply about facilitating the movement of goods and services: they also add value. The Atlantic Gateway can be vital tool in ensuring Canada's success in the 21st century. The following describes some the ways in which a successful Atlantic Gateway can generate economic benefits for Canada:

- *Economic productivity* – Gateways can contribute to economic growth and productivity performance by supporting the business activity of other sectors of the economy. For example, manufacturing businesses depend on the reliable and integrated operations of gateways and corridors to send their products to the final market and to receive production inputs. Most supply chains hold excess inventory to deal with uncertainly of delivery or re-supply. If the reliability of the Atlantic Gateway improves, the amount of this 'safety' stock or inventory can be reduced. This is a real resource saving and is an effective increase in productivity – holding inventory is expensive, and can represent up to 25% of the value of a commodity. In a country where services have become the dominant part of the economy, it is important to consider that the facilitation of the flow of services is another critical way in

which gateways act.[101] The export and import of professional services provided by engineers, lawyers, consultants, researchers, scientists and many others are made possible by well-connected Gateways.

A small body of research has investigated the role of transportation infrastructure in facilitating economic growth. Research by Nadiri and Manuneas (1994) estimated, using data from 1950 to 1991, that each 1% increase in highway infrastructure stock in the U.S. increased national GDP by 0.08%.[102] Another study by Craft and Leunig (2005) estimated that highway investment accounted for one-third of national productivity growth in the 1950s and 1960s in the U.S. (this figure falls to 4% in the 1980s due to lower highways investment).[103] The recent Eddington study (2006) commissioned by the U.K. government concluded that: '*The evidence presented shows that transport, under the right conditions, can deliver GDP and productivity benefits, although the scale of the contribution is difficult to assess*.'[104,] In conclusion, recent research appears to support the argument that transport does indeed facilitate productivity and economic growth. This would suggest that efforts to support the development of a strong and efficient Atlantic Gateway will ultimately benefit the economic development of Canada.

- *Transportation and logistics* – A successful gateway, by virtue of serving a total market much larger than its own 'local' catchment area, is capable of supporting a much higher level of transportation service than its own origin/destination traffic would warrant. Thus, as the Gateway develops, there will be more business opportunities for transportation and logistics in the Atlantic region and those businesses will be able to offer lower costs, more competitive transportation choices, and a wider range of markets enjoying direct service. These firms, in turn, can use their growing service advantages to increase market share in existing markets and to more readily penetrate new markets.

  The growth of the Atlantic Gateway can create a 'virtuous cycle' where increased traffic volumes through the Gateway leads to economies of scale, specialisation, greater employment and greater market awareness with international shippers, all of which help attract even greater volumes of traffic to the Gateway.

- *Business development* – A well-developed Atlantic Gateway can add to the Atlantic Canada advantage, offering a high level of competitive transportation and logistics services to the mix – a key feature for firms looking to locate in North America. These firms would, in turn, support additional international air and marine connections, attracting even further transportation and logistics improvements that support further Gateway development. Another significant opportunity for business development stems from the potential for value-added activity to be undertaken on the goods and services flowing through the Gateway. The Atlantic Gateway has the potential to positively impact on businesses in all regions of Canada. Businesses reliant on exports or imports, or the movement of these goods and services that are located in Québec, Ontario, and the Prairies will benefit from increased

[101] Statistics Canada figures show that in 2006 approximately 70% of Canada's GDP is produced by the 'Service Producing Industries.'

[102] Nadiri, M. I. and Mamuneas, T. P. (1994), The Effects of Public Infrastructure and R&D Capital on the Cost Structure and Performance of U.S. Manufacturing Industries, Review of Economics and Statistics, 76 (1): 22-37.

[103] Craft, N. and Leunig, T. (2005), *The Historical Significance of Transport for Economic Growth and Productivity*, Background Paper for the Eddington Report.

[104] *The Eddington Transport Study - The case for action: Sir Rod Eddington's Advice to Government*, December 2006. One of the difficulties identified in many of these studies is the issue of causality. A number of studies have attempted to analyse causality, and much of the evidence suggests there is a two-way causal relationship – transportation investment leads to economic growth, and economic growth also results in greater transportation investment.

choice, greater competition (and hence lower costs) and increased reliability of their supply chains.

- *Exports and trade* – The increased exports of Canadian-produced goods could potentially create employment opportunities in a wide range of sectors. These could include forestry, mining, software development, biotechnology, alternative fuels, etc. The Government of Canada estimates that each $1 billion of exports generates 11,000 jobs in Canada.[105] In a modern economy, export and trade traffic not only includes goods, but also services as well. Professional services such as accounting, law, finance and consulting all increasingly depend on international transportation linkages through Gateways to conduct their business.
- *Foreign direct investment* - Attracting foreign direct investment would be one of the key benefits of the Atlantic Gateway. Gateway infrastructure would allow goods to move efficiently into and out of North America, making the Atlantic region attractive to new business opportunities. As well, related policies and programs would create the necessary conditions to improve the domestic business environment and encourage free trade and foreign investment: lowering business taxes; reducing regulatory and administrative burdens; enhancing competition; and ensuring our capital markets are globally competitive. Canada and India have held productive negotiations regarding a Foreign Investment Promotion and Protection Agreement which has the potential to support and encourage growing links between the Canadian and Indian business communities. All of these initiatives would strengthen Canada's position in attracting foreign investment.
- *Tourism* – The Canadian tourism industry operates in a highly competitive global environment that absolutely requires Canada to have a world-class and competitive transportation system. New potential tourism markets are developing, particularly in China and India. Development of the Atlantic Gateway will provide Canada with enhanced connections to tourism markets around the world. Competitively priced and convenient air service and high-quality cruise facilities are essential to attract these developing markets. Increased visits from overseas visitors will result in increased tourism spending and increased employment in hotels, restaurants, retail, ground transportation, entertainment, etc.
- *Construction and infrastructure investments* – Investment in Atlantic Gateway infrastructure will support employment in construction, engineering, equipment manufacturing, raw materials, and other sectors.

By 2025, attainment of the container traffic targets will increase total Canadian employment in the industry by 196% over 2006 levels

An initial focus of the Atlantic Gateway initiative will be to generate increased container throughput at Atlantic Canadian container ports. This dramatic increase in container traffic volumes through the Atlantic Gateway will result in a dramatic increase in economic output and an increased demand for employees. The economic impact of achieving the 2025 container traffic projection is estimated to result in an incremental 41,600 total jobs or 35,100 total person years of employment (+196%), at an average incremental wage of $42,165 per person year. This additional container traffic also would add $2.3 billion to the Canadian economy.

[105] Industry Canada, www.ic.gc.ca.

Figure 6-9: Potential Economic Impact of 2025 Atlantic Gateway Container Traffic Targets (in 2006 Dollars)

	Jobs	Person Years	Wages ($m)	GDP ($m)	Output ($m)
Direct	24,800	21,000	979	1,510	3,333
Indirect	14,900	12,600	422	736	1,846
Induced	18,800	15,800	605	866	1,892
Total Impact on Atlantic Canada	58,500	49,400	2,006	3,112	7,071
Rest of Canada	4,300	3,700	233	378	734
Increase from Current Levels	+41,600 (+196%)	+35,100 (+195%)	+ 1,486 (+197%)	+ 2,314 (+197%)	+5,172 (+196%)

Source – InterVISTAS

Development of the Atlantic Gateway will produce 61,100 new jobs and $3.4 billion in new GDP.

Development of all six Atlantic Gateway opportunities would increase trade volumes at the region's ports and airports and increase air and cruise passenger travel. The Atlantic Gateway's traffic projections for 2025, which are discussed in detail in Technical Appendix #2, are summarized below.

Figure 6-10: Atlantic Gateway Traffic Projections

Target	2005	2010	2015	2020	2025
Container Traffic (TEUs)	575,000[106]	751,000	1,048,000	1,463,000	2,040,000
Liquid Bulk (tonnes)	93,000,000[107]	97,000,000	101,000,000	105,000,000	110,000,000
Other Marine Cargo (tonnes)	23,000,000[108]	26,000,000	30,000,000	35,000,000	40,000,000
Cruise Passengers	408,000[109]	495,000	600,000	727,000	882,000
Air Passengers	5,463,000[110]	6,211,000	7,062,000	8,029,000	9,128,000
Air Cargo (tonnes)	53,100[111]	65,200	80,100	98,400	120,900

Source – InterVISTAS and MariNova

The economic impact of achieving these 2025 Atlantic Gateway traffic projections, including indirect and induced impacts, is estimated to reach 133,600 jobs, an increase of 61,100 (85%) over current levels.

[106] Base year includes only traffic handled by Port of Halifax and Port of Saint John in 2006.
[107] Statistics Canada and individual port statistics.
[108] Statistics Canada and individual port statistics.
[109] Base year was calculated using 2005 passenger figures for traffic at Halifax (190,000 passengers), Saint John (90,000 passengers), Sydney (60,000 passengers), Charlottetown (23,000 passengers), and Newfoundland (45,000 passengers).
[110] Statistics Canada, Air Carrier Traffic at Canadian Airports, 2005. Includes traffic at airports in Halifax, St. John's, Moncton, Deer Lake, Charlottetown, Fredericton, Saint John, and Sydney.
[111] Statistics Canada, Air Carrier Traffic at Canadian Airports, 2005. Includes traffic at airports in Halifax, St. John's, Moncton, Deer Lake, Charlottetown, Fredericton, Saint John, and Sydney.

Figure 6-11: Potential Economic Impact of 2025 Atlantic Gateway Traffic Projections in Atlantic Canada (in 2006 Dollars)

	Jobs	Person Years	Wages ($ millions)	GDP ($ millions)	Output ($ millions)
Direct	54,000	45,100	2,073	3,244	7,440
Indirect	28,900	24,200	801	1,498	3,922
Induced	38,300	32,000	1,208	1,794	3,934
Total Impact on Atlantic Canada	121,200	101,300	4,082	6,534	15,296
Rest of Canada	12,400	10,400	602	975	1,841
Increase from Current Levels	+ 61,300[112] (+85%)	+ 51,300 (+85%)	+ 2,118 (+82%)	+ 3,434 (+83%)	+ 7,691 (+82%)

Source – InterVISTAS

Each of the six Atlantic Gateway opportunities would contribute to increases in jobs (61,100), wages ($2.12 billion), GDP ($3.43 billion) and output ($7.69 billion). However, attaining the marine container projections would have the largest impact, representing 68% of the new jobs and GDP.

Figure 6-12: Source of the Atlantic Gateway Economic Impact Growth from Current to 2025 – Total Impact (Direct plus Indirect plus Induced) in Canada

	Jobs	Person Years	Wages ($ millions)	GDP ($ millions)	Output ($ millions)
Overall Increase	+ 61,100	+ 51,300	+ 2,118	+ 3,434	+7,691
Contribution of Gateway Components					
Containers	+ 41,600 (196%)	+ 35,100 (195%)	+ 1,486 (197%)	+ 2,341 (197%)	+ 5,172 (196%)
Liquid Bulk	+ 2,500 (13%)	+ 2,100 (13%)	+110 (13%)	+ 153 (13%)	+ 369 (13%)
Other Marine Cargo	+ 4,500 (50%)	+ 3,700 (50%)	+ 156 (51%)	+ 240 (51%)	+ 536 (51%)
Cruise Passengers	+ 1,700 (59%)	+ 1,300 (61%)	+ 56 (61%)	+ 76 (63%)	+ 180 (63%)
Air Passengers	+ 9,200 (51%)	+ 7,700 (51%)	+ 264 (51%)	+ 532 (51%)	+ 1,225 (51%)
Air Cargo	+ 1,600 (97%)	+ 1,400 (97%)	+46 (98%)	+ 92 (97%)	+ 209 (97%)
Total	+ 61,100 (+85%)	+ 51,300 (+85%)	+ 2,118 (+82%)	+ 3,434 (+83%)	+ 7,691 (+82%)

Source – InterVISTAS

[112] Figure slightly higher due to rounding.

By 2025, development of the Atlantic Gateway will increase tax revenues generated by transportation businesses to $941 million.

Total tax revenues to be generated by the Atlantic Gateway are estimated to reach $941 million by 2025, an increase of 83% over current levels. The greatest tax contributors will be gateway employees and employers through payment of personal income tax and payroll taxes.

Figure 6-13: Estimated 2025 Tax Impact, by Tax Contributor and Level of Government

	Federal ($ millions)	Provincial ($ millions)	Municipal ($ millions)	Total ($ millions)
Gateway Businesses	76.8	103.9	5.2	185.9
Gateway Employees/Employers	548.2	119.4	11.1	678.6
Air Passengers	69.1	7.5	-	76.5
Total Taxes Revenues Generated by the Atlantic Gateway	694.1	230.7	16.2	941.0

Source – InterVISTAS

Gateway development will facilitate tourism visits and increased tourism spending in the region

Atlantic Gateway airports and cruise ports play an important role in facilitating tourism spending in the region. Visitors spend money on food and beverage, accommodation, retail, tours, ground transportation, as well as many other activities. All of this consumption spending contributes towards the total GDP of the region.

In 2006, over 5.5 million air passengers enplaned/deplaned in Atlantic Canada.[113] There were also 408,000 cruise passenger visits to ports in the Atlantic Provinces in 2005. This traffic supported 21,200 person years of employment and generated $1.48 billion in direct GDP.

By 2025, the number of air passengers and cruise passengers utilizing the Atlantic Gateway is expected to increase to 9.1 million and 882,000, respectively. Tourism, as a result of the Atlantic Gateway, would employ up to 39,600 people and generate $6.3 billion in economic output.

[113] Statistics Canada, Air Carrier Traffic at Canadian Airports.

Figure 6-14: Potential Economic Impact of 2025 Tourism Spending Facilitated by the Atlantic Gateway[114,115]

	Person Years	Wages ($ millions)	GDP ($ millions)	Output ($ millions)
Direct	15,700	860	1,060	2,790
Indirect	11,100	410	870	1,850
Induced	12,800	470	820	1,680
Total Impact on Canada	39,600	1,740	2,750	6,320

Source – InterVISTAS

Construction and infrastructure investments in the Atlantic Gateway businesses will yield one-time economic impacts

Development of the Atlantic Gateway may require investment in infrastructure including ports, highways, border crossings, railways, transload facilities, staging areas, etc. Capital investments spent on construction, equipment and raw and finished materials would support employment, GDP, economic output and taxes.

The economic impact of the investment continues for the duration of the construction program, which can be several years, terminating once the construction is finally complete. In this sense, the impact is one-off, unlike the annually recurring economic impact associated with on-going processing and development of the Gateway. Nevertheless, these impacts can be very significant, and go a long way to supporting a robust and technically sophisticated regional construction industry.

The economic impact of three different hypothetical capital investment levels has been analysed. The total (direct plus indirect plus induced) economic impact of this capital investment is presented below.

Figure 6-15: Total Economic Impact of Potential Capital Investments in Atlantic Gateway Infrastructure

Investment	Person Years	Wages ($ millions)	GDP ($ millions)	Output ($ millions)
$100 Million	3,600	76	108	202
$300 Million	10,600	226	324	605
$500 Million	17,600	377	540	1,008

Source – InterVISTAS

[114] Figures reported are for travelers whose purpose of visit is leisure or visiting friends/relatives only; business tourism is omitted in these totals.
[115] Economic figures are shown in 2005 Canadian Dollars.

Other Social Benefits

In addition to the significant economic impacts of the Atlantic Gateway, there are also broader social benefits created by development of the gateway.

- *Increased global profile* – The significant increase in both the magnitude and range of business and tourism activity identified above will increase the global profile of Atlantic Canada. This profile facilitates trade, investment, and cultural and social exchange with other regions.
- *Increase connectivity* – The Atlantic Gateway will offer residents greater connectivity both within Atlantic Canada and to markets in Québec, Ontario, the U.S. Midwest, India and Asia. Increased passenger connectivity will improve on the quality of life for residents of the region by offering a broader range of transportation choices. While outbound tourism can be viewed as reducing the amount of money spent in an economy, it does involve spending in the home economy as well, such as at travel agencies, on taxis, and travel connections within the region. Increased connectivity to/from the Gateway may also enable the region to attract high quality labour to relocate to the region or to facilitate 'weekly commuters' into the region. Likewise the Gateway may enable residents to become 'weekly commuters' outside of the region, allowing them to maintain their residence within the region.
- *Enhance cultural links* – The Atlantic Gateway will enhance cultural linkages in the region. The increased inbound and outbound transportation linkages and resulting tourism activities can both strengthen existing ties and develop new cultural ties for the region. Additionally, the increased profile of the region and the increased transportation linkages may also encourage a greater number of international students to study at universities in Atlantic Canada, further strengthening cultural ties. The economic and social benefits of a culturally diverse business climate will enhance business and investment building opportunities and strengthen ties to foreign markets in China, South East Asia and India.

7.0 Advancing Through a Coordinated Approach

No single entity can unilaterally address all of these interconnected activities. As a result, the Atlantic Gateway must be grounded with clearly defined roles and responsibilities between the public and private sectors and ensure that governments are accountable and investments are transparent. Governments will need to work with private stakeholders and industry and labour associations to promote Atlantic Canada as a strategic gateway and a pivotal link in the global transportation system for the economic benefit of Canada. In this regard, work is already underway by a number of private sector entities and industry associations to support the Atlantic Gateway initiative, amongst others, the Atlantic Provinces Chamber of Commerce, the Atlantic Canada Airports Association, and the Halifax Gateway Council.

The consultants recommend that the action plan for future gateway development contained in this report be considered by the Atlantic Gateway Federal-Provincial Officials Committee, which has been established as the primary forum for collaboration between governments in the development of the Atlantic Gateway. The Atlantic Gateway Federal-Provincial Officials Committee was formed in 2006 with the mandate to develop an Atlantic Gateway strategy that will benefit the Atlantic region and Canada. The Committee has identified a number of issues for further work, including a detailed assessment of the major transportation systems in the region that support international commerce activities and coordinating a marketing approach. Collaboration with the private sector and other stakeholders will further enhance the Committee's efforts.

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