Draft

CANADIAN MARINE INDUSTRY: OVERVIEW

REFERENCE DOCUMENT

PREPARED BY THE NATIONAL MARINE AND INDUSTRIAL COUNCIL SECRETARIAT

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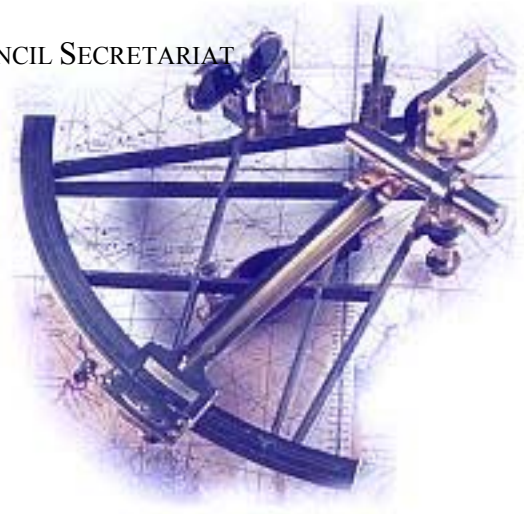

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1. INTRODUCTION

This report has been prepared in order to present an overview of the Canadian marine industry and various activities currently underway that affect the marine sector. It is meant to be a living document, requiring annual updates, that the newly established National Marine and Industrial Council (NMIC) can use to both promote the industry and devise strategies to address challenges facing the marine industry. The document examines the marine industry, first by presenting an overview of the marine industry, then providing a commercial and governmental perspective of the challenges the marine industry faces and finally ending by pointing towards issues that the NMIC should consider for further action.

The overview details the geography of the marine industry in Canada and provides details concerning the current market structure. Included are the challenges the marine industry faces regarding global pressures, public perception, the government's services and regulatory oversight impact on competitiveness, infrastructure needs, emerging trade networks, and finally the need to focus on innovation and technology.

The commercial perspective focuses on economic indicators, a description of the industry, its partners and the sector's impact on the Canadian economy. As most trade in the marine sector is conducted on the international front, there is heavy emphasis on trade market analysis and data.

The government perspective provides a detailed account of the marine structure in Canada and the history behind it. Some data is provided concerning industry performance. This section also provides a description of Canadian Coast Guard (CCG) services and responsibilities, information on government spending on the transportation sector, the existing regulatory framework, marine user fees, safety and security and finally the environment. Key to this section is the description of initiatives, involving government and industry, that are currently underway that affect the marine industry. Several marine policy initiatives of interest in the document include:

The federal government has long recognized that an effective market depends on the responsiveness of its regulatory framework and processes.

- From a regulatory perspective, the Smart Regulation initiative's goal is to reduce the regulatory burden on the industry.
- The Marine Benefits Study: The study will create a fundamental benchmark against future developments and will help to support future Canadian policy direction with respect to infrastructure, regulations and pricing/fee decision-making.
- The Marine Navigation Services (MNS) Study: Explores whether alternative methods of delivering MNS might benefit both the government and the marine industry by contributing to a more efficient and equitable provision of MNS.
- The Great Lakes/St. Lawrence Seaway Study: Assesses the ongoing maintenance and capital requirements of sustaining and optimizing the Seaway and the existing marine infrastructure on which it depends.
- Shortsea Shipping: Explores shortsea shipping opportunities as a means to improve utilization of waterway capacity, strengthen intermodalism, alleviate highway congestion, facilitate trade, and reduce greenhouse gas emissions.
- The *Canada Marine Act* Review: In an effort to appropriately address marine industry challenges, conducte studies to assess the state of the marine industry markets and trends, particularly in respect of recommendations/observations that have significant financial implications.

- Marine Skills and Labour Force Development: Explore ways to gain an understanding of the human resource challenges facing the marine transportation sector, the concerns of marine transportation stakeholders, and ways that the department can assist in skills and labour force development.
- International Marine Policy: International marine policy and legislation relies heavily on a multilateral approach and the harmonization of Canadian law with international maritime conventions and agreements.
- The Cabotage Policy: National and global shipping trade and business environments have changed and it is time to re-evaluate the Canadian cabotage policy.
- Freight Sustainability Demonstration Program (FSDP): Help the freight transportation sector improve its economic performance while reducing its environmental impact, including greenhouse gas emissions that are responsible for climate change.

The document concludes by suggesting a path that could be followed by the NMIC in order to develop strategies that will have the highest beneficial impact on the marine industry.

Key areas where future work for the NMIC will be needed include:

- Promoting public awareness of the importance of the marine industry to the Canadian economy;
- Adopting strategies to take action to enhance competitiveness and trade networks;
- Increasing coordination and support for innovation and technological development; and
- Developing stronger industry/government partnerships.

The NMIC will develop an Action Plan where a Champion will lead activities related to their action item while following a set of guiding principles.

An Action Plan will be developed in order to help focus any future work of the NMIC. Each activity identified in the Action Plan will be assigned to a Champion, who will lead all activities associated with that initiative and report/make recommendations to the NMIC. These Champions will follow the guiding principles listed below:

- Contributes to/promotes national and international marine policy development;
- Supports the review of the benefits of marine transportation and its contribution to the competitiveness of Canadian industry;
- Supports the development of strategic infrastructure investment and help reduce congestion within trade corridors;
- Supports improved service delivery and intermodalism; and
- Promotes a sustainable and environmentally responsible marine transportation system both nationally and internationally.

2. MARINE INDUSTRY OVERVIEW

The marine industry in Canada has played a major role in Canada's history. Early settlement in Canada was almost completely dependent on the marine mode for the movement of people and goods. The location of cities and industry was concentrated on the east and west coasts and along the Great Lakes/St. Lawrence Waterway. While other modes of transport have assumed greater prominence in today's world, the marine mode remains a critical element for key domestic industries and for moving cargoes to and from international markets.

The marine system is an economic engine driving the Canadian economy.

In 2002, Canadian ports handled 407 million tonnes of cargo, an increase of approximately 3.8 per cent from 2001. Passenger traffic is also important for many ports, with a growing cruise industry, requiring substantial investments in both port facilities and vessels. The economic impact of marine activities for port cities and for the nation as a whole is substantial.

The marine industry functions are multi-faceted, and each coast has a unique component of both the domestic and international commercial marine transportation sectors:

- In the Pacific region, tugs and barges serve as the domestic workhorses, while bulk carriers and container ships dominate international operations.
- In the Great Lakes, and to an extent the St. Lawrence region, specialized bulk carriers, self-unloaders and tug/barge units are a major influence in domestic dry cargo movements. A fleet of small tankers handles petroleum product movements.
- Within the St. Lawrence region, a full range of ship sizes and types serves international trade from container ships to crude oil tankers.
- While the Maritimes supports a relatively small domestic trade, international vessels are of considerable importance in the import and export traffic.

The Arctic, as Canada's fourth seacoast, is highly seasonal and served by extensive tug and barge operations as well as a small domestic dry cargo fleet. Oil products and mine movements are handled by international flag vessels. Also, vessels from the international fleet are moving relatively small quantities of grain through Churchill for export.

A fleet of Canadian flag operators provide domestic and transborder shipping services, while foreign flag operators calling at Canada's major ports largely serve international trade. The Canadian domestic fleet is diverse, ranging in size from one-operator logging tugs to large ore carriers. The Great Lakes/St. Lawrence region and eastern Canada are served by a fleet of dry bulk (including self-unloading) vessels, tankers, and general cargo vessels. On the west coast, a substantial fleet of tug and barge vessels services the needs of the forest industry and other shippers. There is also a significant fleet of ferry vessels providing links to coastal and island communities.

Literally thousands of ports dot Canada's coastline. Fishing and recreational ports make up the largest number of these. Canada's major commercial ports, formerly operating under the *Canada Ports Corporation Act* or as Harbour Commissions, are now part of the National Ports Network and are managed by individual Canada Port Authorities (CPA). Local/ regional ports continue to be divested to local interests as laid out in the National Marine Policy.

The Great Lakes/St. Lawrence Seaway system, a bi-national waterway shared with the United States, provides a critical transportation link into the industrial heartland of the continent.

For the domestic commercial marine transportation industry, competition over routes and for alternative sources of supply, comes from different modes – truck and rail. Client industries of marine operations utilize the marine mode only if it is the lowest cost way of handling their business. Canada's resource base, upon which the domestic industry was built, and which defined Canada's role in international trade for many years, has faded in importance. The erosion of value has caused, and continues to cause, significant regional economic dislocations that have impacted the domestic industry. A number of factors have to be taken into account, including the virtual disappearance of grain shipments to Europe as a result of the European Union (EU) Common Agricultural Policy and, similarly, the elimination of the former Soviet Union as an export market for Canadian grain. Parallel changes in the way in which iron ore is handled eliminated the traditional "grain down, ore back" trade that characterized Canadian bulk carrier operations for nearly 30 years following the opening of the Seaway in 1959. More generally, changes in inventory management practices over the years, as well as increases sought by the commercial marine transportation industry to cover increasing costs, have resulted in modal changes. Many companies utilizing domestic marine, as well as other modes, also face competition from US and offshore sources and are sensitive to any cost increases that erode their position.

2.1 Challenges for the Marine Industry

Canada's marine sector includes: domestic shipping, import/export shipping, ferry services, cruise industry, the ports system and the support sector. Sectors like agriculture, manufacturing, retail and resources industries are very dependent on marine transportation. It is also a key part of an interdependent intermodal logistics system with rail and trucking.

More and more, shippers are facing global competitive pressures (commodity prices, energy costs, exchange rates), modal competition, increased security requirements, government fees/regulatory oversight, infrastructure requirements, looming skills shortage and uneven government support for the industry (example: US financial support for marine transportation system (ports and waterways)). Other elements affect the marine industry's ability to compete effectively, namely the public's awareness of the true impact and importance the marine industry has on the country's economy.

Some new initiatives have taken shape to curb the negative public perception of the marine industry and to boost its competitiveness. These include:

- Vision Papers – Great Lakes/St. Lawrence Waterway
- Commercialization – Seaway
- Coalition of Marine Stakeholders
- Marine Industry Economic Impact Study
- *Canada Marine Act* Review
- Marine Days – National and Provincial
- Marine Blueprint
- Communications Programs
- National Marine and Industrial Council

Government/industry partnerships are increasingly important to the success of various initiatives.

Several opportunities are being created for government/industry partnerships. These are required to strengthen the marine transportation sector and increase its competitiveness. This could be accomplished by highlighting the industry's views in order to have an effect on government services and regulations, by increasing knowledge related to infrastructure and trade networks and by having an impact on the future of innovation and technology.

2.2 Competitiveness

Government Services and Regulations

Government is involved in every aspect of Marine Navigation Services, however its delivery and oversight responsibility is spread across several departments, agencies and regions. The industry sees here an opportunity to optimize service delivery and policy and program integration. Strong partnerships are viewed as a solution to this challenge. Some areas where improvements could be made include: co-operative work between departments, service enhancements resulting in seamless service delivery and technology sharing opportunities. Some of the benefits of stronger partnerships include: policy consistency, regulatory harmonization, enforcement efficiency and reduced fees paid by industry.

Infrastructure and Trade Networks

Marine infrastructure capacity is critical to future economic success. Defining trade corridor strategies for Canada is essential to determining infrastructure requirements. Government and industry need to work together to identify long-term marine infrastructure requirements that will lead to effective trade routes with US, EU and Asian countries.

When making strategic investments, the federal government has indicated that it will place a high priority on intermodal transportation, intelligent transportation systems and planning and feasibility studies in support of such investments in the context of an integrated national transportation system.

Other strategies are being implemented include:

- Completion of the port divestiture program;
- Fine tuning governance models and exploring new avenues for commercialization where possible;
- Supporting transportation investment to reduce congestion and bottlenecks in trade corridors; and
- Assisting in meeting climate change and clean air objectives.

Innovation and Technology

Harnessing the potential of innovative technology and investing in human resource training are fundamental elements of competitiveness in today's economy.

Canadian Shipowners Association 2003-2004 Report

The marine industry believes that a key element in enhanced competitiveness is the accelerated introduction of new technologies that boost productivity. Canadian firms are leaders in supplying and developing new marine technologies in: satellite communications, electronic charts/AIS, voyage data recorders, stability and trim software, dynamic stress sensors, computer-based training, environmental sensors and software and self-unloading technology. It is important to find opportunities to improve the coordination of private and public sector research and development (R&D) programs and to leverage technological and funding efforts, as well as existing research venues (both governmental and educational) in order to meet future demands for better, more adaptive technologies. There are several departments involved in marine R&D, namely: Transport Canada, Canadian Coast Guard, Industry Canada, Environment Canada and the National Research Council.

3. COMMERCIAL PERSPECTIVE

The commercial marine transportation industry performs an essential service to Canada's resource, manufacturing and service companies. The marine industry contributes to the health of the Canadian economy both in the high profile world of containerized, intermodal traffic and in the more 'silent' commodities such as petroleum products, grain, iron ore, sulpher, potash, coal and forest products upon which much of Canada's wealth has been built and on which it continues to depend for a large portion of its prosperity. Moving over 400 million tonnes of cargo each year, the marine sector is essential to Canada's trade, both domestic and international.

Table 1: Canada's Marine Traffic Statistic by Sector, 2002

(Millions of tonnes)

Flows			*Total*	*Total*
Domestic	*Transborder*	*Overseas*	*Flows*	*Handled*
62.6	114.3	168.4	345.4	407.9
	Compare with	***Rail***	***290.0***	
		Road	***293.9***	

3.1 Economic Indicators of the Marine Industry

By the end of 2003, Canada's trade surplus with the rest of the world had fallen to its lowest level since 1999, as both exports and imports of merchandise decreased. In 2003, the US was once again Canada's most important trading partner by far, capturing almost 75 per cent of the value of Canada's total trade with the world.

Six trade flows accounted for 75 per cent of Canada's total trade with countries other than the US. Four of these were two-way flows between eastern provinces and Western Europe ($15 billion in exports, $40 billion in imports) and between western provinces and Asian countries ($13 billion in exports, $18 billion in imports). The other two-way flows were import oriented, moving to eastern provinces from Asian countries ($34 billion) and Latin American countries ($17 billion), mainly Mexico.

Canada is a trading nation with one in three Canadian jobs depending on export performance.

Canada is a trading nation with one in three Canadian jobs depending on export performance. With international trade projected to double by 2020 it is critical that the Canadian transportation system prepare for the increased traffic. Success will depend on an integrated multimodal transportation system. The volume of marine traffic generated by Canada increased in 2002, resulting from increases in both domestic and transborder flows.

In 2003, the growth of the Canadian economy slowed down significantly, growing in real terms by 1.7 per cent. Weakened exports outweighed continued strong consumer expenditures and rebounding business investment to contribute to the economic slowdown. The continuing rise of the Canadian dollar prevented exporters from taking advantage of the US economic recovery in the second half of the year. Canada's trade with the US fell from its $589 billion peak in 2000 to $531 billion in 2003. Trucking accounted for 63 % of trade with the US, rail 17 per cent, pipeline 10 per cent, air six percent and marine three per cent.

In 2003, Canada's trade with countries other than the US totaled $185 billion, imports being more significant than exports, and marine and air transportation being the two dominant modes for such trade in

terms of both value and volume. A total of 282.7 million tonnes of international cargo was handled at Canadian ports, compared with 286.9 million tonnes in 2001. Of that total, 114.3 million tonnes were related to Canada's marine traffic to and from the US, up slightly from 2001, while 168.4 million tonnes had to do with Canada's marine trade with overseas countries (excluding the US).

International cruise ship traffic in 2003 decreased for the first time in 21 years, decreasing at the ports of Montreal, Quebec City and Saint John, but increasing in Halifax.

Domestic cargo loaded and unloaded at Canadian ports increased to 62.6 million tonnes in 2002, a 1.4 per cent increase from 2001. The value of Canadian international marine trade in 2002 was $103.2 billion, excluding shipments via US ports.

3.2 Domestic Marine Freight Traffic

Canada's merchant fleet handles most domestic shipments of bulk materials on the Great Lakes/St. Lawrence River and along Canada's coastline. This fleet is made up of self-propelled vessels of at least 1,000 gross tonnes flying the Canadian flag. At 2003 year-end, it included 181 vessels with a capacity of almost 2.3 million gross tones. The following table shows the transport capacity of the Canadian-registered fleet by type of vessel in 1983, 1993 and 2003.

Table 2: Canadian-Registered Fleet by Type: 1983, 1993 and 2003

	Gross Tonnes (000s)			*Number of Vessels*		
Type of Carriers	*1983*	*1993*	*2003*	*1983*	*1993*	*2003*
Dry Bulk	1,967	1,380	1,165	133	79	65
Tankers	285	244	559	41	33	24
General Cargo	81	79	206	21	14	27
Ferries	258	295	365	56	56	61
Other	73	35	35	13	8	6
Total	**2,665**	**2,033**	**2,330**	**263**	**190**	**183**

Although declining, dry bulk carriers remain the backbone of the Canadian merchant fleet, accounting for 47 per cent of tonnage and 33 per cent of vessels in 2003. The dry bulk fleet was made up of 65 vessels in 2003, composed of straight-deck bulkers dedicated mainly to grain transportation and self-unloading vessels carrying various bulk commodities. By comparison, the number of tankers decreased from 39 in 1983 to 23 in 2003, while the capacity share increased from 10 to 24 per cent of total gross tonnage due to the addition of larger units. Over the last 10 years, the capacity of general cargo vessels also increased, from 4 to 12 per cent of total gross tonnage. An extensive fleet of tugs and barges was also in operation at the domestic and international level. In 2003, it was estimated that the Canadian fleet of tugs and barges include 328 tugs and 1,203 barges and scows (with a capacity of almost 1.2 million gross tonnes).

As it is both loaded and unloaded at Canadian ports, domestic cargo is handled twice within the Canadian port system. Domestic cargo rose 16 per cent to 125.2 million tonnes in 2002, the highest level in a decade. Following are the primary commodities handled in the domestic trade across Canada in 2002:

- Crude petroleum (30.7 million tonnes, up 176 per cent from 2001)[1];
- Pulpwood and chips (14.8 million tonnes, up 9.8 per cent);
- Stonne, limestonne, sand and gravel (13.1 million tonnes, down 7.6 per cent);
- Iron ore and concentrates (11.3 million tonnes, down 2.9 per cent);

[1] The increase in domestic cargo in 2002 was driven by increased production in the offshore oil fields in Newfoundland and Labrador as the Terra Nova wells came on-stream in January 2002.

- Logs and other wood (8.3 million tonnes, up 6.5 per cent);
- Fuel oil (7.3 million tonnes, down 17 per cent); and
- Wheat (6.9 million tonnes, down 18.7 per cent).

Together, these commodities represent almost three quarters (74 per cent) of all domestic tonnage handled at Canadian ports in 2002. Most domestic traffic passes through the Great Lakes/St. Lawrence Seaway system. In 2002, the ports serving the Great Lakes/St. Lawrence regions handled 52.7 million tonnes (loadings and unloadings) or 42 per cent of the total domestic tonnage. Atlantic region ports handled 41 million tonnes of domestic cargo in 2002, an 82 per cent increase from 2001[1]. Pacific region ports handled 31.6 million tonnes or 25 per cent of the total.

3.3 International Marine Trade

According to international trade data, the value of Canadian international marine trade in 2002 was $103.2 billion (excluding shipments via US ports). Marine imports were valued at $57 billion, while marine exports were valued at $46 billion. Asia, Pacific Europe and the US are the major areas of exports/imports. In 2002, the value of imports increased by 6 per cent, notably with increased cargoes inbound from Asia (China, Japan, South Korea and Taiwan). The value of exports also increased, by 2 per cent, mainly to the US, Germany and Netherlands.

Table 3: Value of Marine Share of Canadian International Trade, 2002

(Billions of Canadian dollars)			
	Marine	*All Modes*	*Marine (per cent)*
Transborder			
Exports	11.4	345.4	3.3
Imports	3.3	218.3	1.5
Total US	**14.7**	**563.7**	**2.6**
Overseas			
Exports	34.7	51.0	68.1
Imports	53.8	130.4	41.2
Total Other Countries	**88.5**	**181.4**	**48.8**

The principal commodities exported to foreign countries (including US) in 2002 were:

- Forest products ($9.1 billion);
- Gasoline/fuel oils ($5.8 billion); and
- Grains ($4.4 billion).

Imports consisted of:

- Textiles, leathers and end products ($8.5 billion);
- Crude petroleum ($8.4 billion);
- Automobile vehicles ($8.2 billion);
- Machinery ($4.9 billion); and
- Other food products ($3 billion).

3.4 International Marine Freight Traffic

In 2002, Canadian ports handled 282.7 million tonnes of international cargo. Japan, China, South Korea, the United Kingdom and other Pacific European nations accounted for about 60 per cent of Canada's total international marine traffic (exports and imports excluding US).

3.5 Transborder Freight Traffic (Canada/US)

Canada's marine traffic to and from the US totaled 114.3 million tonnes in 2002, up by 5.9 per cent from 2001. In 2002, loadings at Canadian ports destined to the US totaled 72.9 million tonnes. Seven commodities accounted for 80 per cent of this volume:

- crude petroleum (15.2 million tonnes);
- stonne, limestonne, sand and gravel (10.5 million tonnes);
- gasoline (9.5 million tonnes);
- fuel oil (6.6 million tonnes);
- gypsum (6.6 million tonnes);
- iron ore (6.6 million tonnes); and
- salt (3.6 million tonnes).

In 2002, there were two main flow corridors: the Canadian Atlantic to the US Atlantic route; and the Canadian Great Lakes to the US Great Lakes route. The Atlantic route accounted for 40.8 million tonnes, or 56 per cent of total loadings to the US, while the Great Lakes route accounted for 13.1 million tonnes, or 18 per cent of total loadings. Combined, these routes accounted for 74 per cent of Canada's commodities traffic volumes shipped to the US using marine transport services.

Table 4: Canada's Marine Traffic to the United States, 2002

(Millions of tonnes)

	US Region of Destination			
Canadian Region of Origin	*US Atlantic*	*US Great Lakes*	*US Pacific*	*Total*
Atlantic	40.8	0.0	0.2	41.0
St. Lawrence	5.2	3.3	0.0	8.5
Great Lakes	0.2	13.1	0.0	13.2
Pacific	0.6	0.0	9.6	10.2
Total	**46.6**	**16.4**	**9.8**	**72.9**

In 2002, imports of US marine shipments to Canada were 41.4 million tonnes. Seven commodities accounted for more than 87 per cent of this volume:

- coal (19Mt);
- iron ore (5.4 Mt);
- basic chemicals (3.3 Mt);
- stonne, limestonne, sand and gravel (3.1 Mt);
- fuel oil (2.2 Mt);
- other petroleum products (2.2 Mt); and
- other agricultural products (1 Mt).

More than 77 per cent of the total volume of all marine imports from the US originated at ports on the Great Lakes. Ports along the US Atlantic and the Gulf of Mexico accounted for 15.5 per cent, while US Pacific ports made up the remaining 7 per cent.

Table 5: Canada's Marine Traffic from the United States, 2002

(Millions of tonnes)

Canadian Region of Destination	*US Region of Origin*			
	US Atlantic	*US Great Lakes*	*US Pacific*	*Total*
Atlantic	2.8	0.1	0.0	3.0
St. Lawrence	3.4	2.7	0.1	6.2
Great Lakes	0.1	29.4	0.0	29.5
Pacific	0.1	0.0	2.7	2.8
Total	**6.4**	**32.1**	**2.9**	**41.4**

3.6 Overseas Freight Traffic

In 2002, Canada's marine trade with overseas countries (excluding US) totaled 168 million tonnes. Exports made up more of this volume than imports. Canadian ports loaded 101.4 million tonnes of cargo to be shipped to non-US countries in 2002. The major commodities shipped from Canada included:

- Coal (24 million tonnes);
- Iron ore (18.6 million tonnes);
- Containerized freight (13.4 million tonnes);
- Wheat (10.3 million tonnes);
- Sulphur (5.2 million tonnes);
- Woodpulp (5.1 million tonnes); and
- Potash (4.7 million tonnes).

Slightly more than 13 per cent of this traffic was containerized. Three fifths of Canada's total marine exports to overseas destinations were loaded at ports in Pacific Canada. The ports along the St. Lawrence region handled most of the loading for ports in Eastern Canada.

Table 6: Canada's Marine Traffic to Overseas, 2002

(Millions of tonnes)

Foreign Region of Destination	*Canadian Region of Origin*		
	Eastern Ports	*Pacific Ports*	*Total*
Asia and Oceania	5.6	42.8	48.4
Europe	24.6	7.2	31.8
South and Central America	5.5	7.5	13.0
Middle East and Africa	5.5	2.7	8.2
Total	**41.2**	**60.2**	**101.4**

In terms of imports, Canadian ports unloaded 67 million tonnes of marine shipments from overseas origins in 2002. Major commodities unloaded included:

- Crude petroleum, including transshipments of North Sea crude petroleum (28 million tonnes);
- Containerized freight (11.9 million tonnes);
- Other metallic ores and concentrates (3.9 million tonnes);
- Basic chemicals (3.7 million tonnes);
- Gasoline (3.7 million tonnes);
- Iron and steel (3.1 million tonnes); and
- Coal (2.8 million tonnes).

About 18 per cent of this traffic was containerized. More than 87 per cent of overseas shipments were unloaded at ports in Eastern Canada (overseas cargo originated mainly from Europe, the Middle East and Africa).

Table 7: Canada's Marine Traffic from Overseas, 2002

(Millions of tonnes)

Foreign Region of Origin	*Canadian Region of Destination*		
	Eastern Ports	*Pacific Ports*	*Total*
Europe	26.9	0.2	27.1
Middle East and Africa	15.7	0.1	15.8
South and Central America	12.9	1.0	13.9
Asia and Oceania	3.4	6.8	10.2
Total	**58.9**	**8.1**	**67.0**

4. GOVERNMENT PERSPECTIVE

Recognizing that large segments of Canada's transportation system were operating at less than optimum efficiency, in 1994 the Government of Canada set out a comprehensive strategy to modernize Canadian transportation and prepare it for the 21st century. This included a review intended to modernize Canada's marine management and regulatory regime. At the request of the Minister of Transport, the House of Commons Standing Committee on Transport (SCOT) undertook a comprehensive study of the national marine sector in early 1995. The Committee report — *A National Marine Strategy* — contained a number of recommendations to improve the marine system, many of which were subsequently addressed by the National Marine Policy.

In December 1995, the government announced its National Marine Policy and its intention to bring in legislation containing comprehensive changes to the ports, Seaway, ferries and pilotage components of the marine industry. Reflected throughout the National Marine Policy is the principle of commercialization. Specifically, the objectives of the National Marine Policy were to:

- Ensure affordable, effective and safe marine transportation services;
- Encourage fair competition based on transportation rules applied consistently across the marine transport system;
- Shift the financial burden for marine transportation from the Canadian taxpayer to the user;
- Reduce infrastructure and service levels where appropriate, based on user needs; and
- Continue the Government of Canada's commitment to safe transportation, a clean environment, and service to designated remote communities. The government would also maintain its commitment to meet all constitutional obligations.

The CMA established the first single, comprehensive piece of legislation to govern many aspects of Canada's marine sector.

The *Canada Marine Act* (CMA), which received Royal Assent in 1998, is intended to encourage a more efficient marine transportation system, in part, by enabling marine infrastructure to be managed in a more commercial manner and allowing more local input into decision-making objectives. The CMA established the first single, comprehensive piece of legislation to govern many aspects of Canada's marine sector. The CMA streamlined marine legislation and allowed for the establishment of (CPA) along with continued divestiture of certain harbour beds and port facilities. The Act facilitated the commercialization of the St. Lawrence Seaway and contained provisions for the further commercialization of federal ferry services. It also aimed to improve the way Pilotage Authorities operate in Canada.

4.1 Canada Port Authorities

The National Marine Policy of 1995 sought to redefine the management and operations of Canada's major ports. It identified the need for Canada's national ports to operate under clear, consistent criteria, applied equitably from coast to coast, and noted that the federal government must focus on ports that are vital to domestic and international trade, and on preserving access to remote regions. Accountability to users and to the general public was to be transparent and effective.

The CMA has created a National Ports System made up of independently managed CPAs. Generally, the CPAs operate financially self-sufficient ports that are critical to domestic and international trade.

As an agent of the Crown, a CPA possesses the powers to engage in activities related to shipping, navigation, transportation of passengers and goods and the handling and storage of goods. CPAs may also engage in other activities that are deemed in its Letters Patent to be necessary to support port operations, although they may not act as Crown agents for these activities.

CPAs have no recourse to the federal Treasury to pay off debts, but remain eligible to benefit from government programs of general application providing for grants. CPA borrowing to support capital investments must be obtained from private sector lenders, each CPA pays an annual charge to the Crown based on its gross revenues. Surpluses at each port must be re-invested in the port.

With the exception of the Vancouver Port Authority, which has a nine-member board of directors, the boards of directors of CPAs are each composed of seven members. The majority of the members are nominated (for appointment) in consultation with port users. In addition, the federal, provincial and municipal governments each appoint one director. Transparency of operations is maintained through public annual audited financial statements, public land use plans, annual general meetings open to the public, and reporting under the *Access to Information Act*.

Total operating revenues of CPAs reached $279 million in 2002, up $13 million from 2001. Vancouver and Sept-Îles reported the largest increase in revenues. As illustrated in the table below, tonnage handled at CPA ports dropped from 220.4 million tonnes in 2001 to 215.1 million tonnes in 2002. Vancouver, Saint John, Sept-Îles, Montreal and Quebec City combined accounted for 67 per cent of total cargo handled by CPAs. In 2002, CPAs handled 52.7 per cent of total port traffic in Canada.

Table 8: Marine Traffic Handled at Canada Port Authorities, 2002 vs. 2001

(Millions of Tonnes)

CPA	*2001*		*2002*		*% Change in Traffic Handled (2002 vs. 2001)*
	Traffic Handled	*% of Total CPA Traffic Handled*	*Traffic Handled*	*% of Total CPA Traffic Handled*	
Vancouver	72.0	32.7%	63.2	29.4%	-12.3%
Saint John	24.5	11.1%	25.2	11.7%	3.2%
Sept-Iles	20.0	9.1%	20.1	9.3%	0.6%
Montreal	18.9	8.6%	18.3	8.5%	-2.9%
Quebec	15.2	6.9%	17.9	8.3%	17.7%
Halifax	13.9	6.3%	12.9	6.0%	-7.6%
Fraser River	11.5	5.2%	12.5	5.8%	9.3%
Hamilton	10.6	4.8%	11.7	5.4%	10.4%
Thunder Bay	9.1	4.1%	8.2	3.8%	-9.4%
North Fraser	4.7	2.1%	5.2	2.4%	11.3%
Windsor	4.7	2.1%	4.6	2.1%	-2.3%
Prince Rupert	4.7	2.1%	4.4	2.0%	-6.7%
Trois-Rivieres	2.4	1.1%	2.4	1.1%	0.3%
Nanaimo	2.2	1.0%	2.3	1.0%	7.3%
Belledune	2.3	1.0%	2.3	0.7%	-1.1%
Toronto	1.8	0.8%	1.6	0.6%	-12.5%
St. John's	1.3	0.6%	1.4	0.2%	6.0%
Saguenay	0.4	0.2%	0.4	0.2%	5.9%
Port Alberni	0.3	0.1%	0.5	0.2%	43.3%
Total	**220.4**	**100.0%**	**215.1**	**100.0%**	**-2.4%**

4.2 Public Ports

On March 1, 1999, Part 2 of the CMA came into force for existing public ports. Under the National

Marine Policy, the majority of ports under the control and administration of Transport Canada were designated as regional/local. These ports range from operations that support significant local and regional commercial activity to very small facilities with little or no commercial traffic. Whether a port supports an isolated community or several large industries, Transport Canada's operational role is normally limited to enforcing regulations regarding public port and public port facility use, monitoring port operations, and collecting user fees. Services such as cargo handling are supplied by the private sector. These regional/local ports were to be transferred to other federal departments or to provincial governments, municipal authorities, community organizations or private interests. Public ports are also being deproclaimed once Transport Canada has relinquished the last of its ownership interests at such ports to a new owner, including the harbour beds, as appropriate. The objective of the Port Divestiture Program is to position regional/local ports to respond more effectively to local needs and to function in a more commercial and cost-effective manner.

As of July 31, 2004, 452 of the 549 public ports and public port facilities under Transport Canada's control and administration had been transferred (218), deproclaimed (211) or demolished (5), or have had the department's interests terminated (18). Transport Canada is monitoring local port entities for compliance with the terms and conditions of any federal contributions that may have been received by these entities.

The federal government will continue to maintain remote ports that serve the basic transportation needs of isolated communities, unless local interests express a willingness to assume ownership of such port facilities. Thirty-two remote ports have been divested since 1996, leaving 29 remote ports nationwide under the administration of Transport Canada.

While assessing the post-transfer viability of ports was not a requirement of program approval, based on evidence from several divested ports, in general, divested ports are prospering and operating more efficiently than when they were under federal administration.

4.3 St. Lawrence Seaway

The St. Lawrence Seaway (Seaway) is a unique bi-national inland waterway, extending into the industrial heartland of North America and serving 15 major international ports and some 50 regional ports on both sides of the Canada/US border. The Seaway locks (15 in total) overcome the differences in elevation in the system. The Montreal/Lake Ontario (MLO) section has seven locks – five Canadian and two American. The Welland Canal links Lake Ontario and Lake Erie with a series of eight locks – all Canadian.

In 2001, the Canadian Seaway saw its third full year of management by the St. Lawrence Seaway Management Corporation (SLSMC). The SLSMC was constituted as a not-for-profit corporation under Part II of the *Canada Corporations Act* on July 9, 1998, and is governed by a nine-member board of directors. The board reflects all the diversity of the Seaway mosaic.

The SLSMC assumed responsibility for the operations and maintenance of the navigational aspects of the Canadian portion of the Seaway on October 1, 1998, following the successful negotiation of a management contract with the federal government pursuant to Part 3 of the CMA. This agreement is in force until March 31, 2018.

The government continues to own the fixed assets and bears alone the financial risk associated with traffic and revenues. If revenues from operations are not sufficient to cover operating costs and asset renewal costs, the government is responsible for covering the resulting deficits. The government remains

committed to the long-term integrity of the Seaway — terms in the agreement ensure that asset renewal (including capital and major and regular maintenance) is sufficient to safeguard the national interest in the system. In 2003/04, the SLSMC spent $26M in asset renewal (major maintenance and capital).

The two main sections of the Seaway, the MLO section and the Welland Canal section, attracted an estimated 40.9 million tonnes of traffic in the 2003 season, 1.3 per cent less than in 2002.

4.4 Ferries

The National Marine Policy also outlined the federal government's goal to make the marine sector commercially oriented and reduce its involvement in the direct delivery of transportation services. This move was intended to allow the private sector to provide some of these services.

Since that time, Marine Atlantic Inc. (MAI), a federal Crown corporation, commercialized some of its routes and transferred others to the Province of Newfoundland and Labrador. Further, its Borden/Cape Tormentine route was terminated with the opening of the Confederation Bridge in 1997. The corporation will continue to provide constitutionally guaranteed ferry services between Nova Scotia and Newfoundland. Federally supported ferry services in Atlantic Canada are now limited to those provided by Marine Atlantic Inc. and by two private-sector operators: Northumberland Ferries Ltd. and C.T.M.A. Traversier Ltée. In addition, the federal government provides an annual grant ($22.9 million in 2001) to the British Columbia Ferry Corporation (BC Ferries).

As a further example of improved efficiencies and how the National Marine Policy is being successfully implemented in the ferry program, an agreement with Bay Ferries Ltd. for the two Bay of Fundy services has been structured to phase out operating subsidies.

Ferry services carried approximately 39 million passengers and 15.4 million vehicles in 2003.

4.5 Pilotage

Marine Pilotage involves directing and controlling the movement of a vessel through coastal and inland waters and providing navigational and/or ship handling advice to the master of the vessel for this purpose.

The *Pilotage Act* of 1972, as amended in 1998 by the CMA, governs marine pilotage in Canada. Under this Act, four regional pilotage authorities were established as Crown corporations — Atlantic, Laurentian, Great Lakes and Pacific. The four Pilotage Authorities are mandated to provide safe and efficient pilotage services that respond to the particular requirements of local traffic, as well as to the varied geographic and climatic conditions of the waterways concerned. The four Authorities, among other functions, control the supply of pilots and the circumstances under which they must be engaged, negotiate the remuneration of pilots, determine the areas where pilotage is compulsory, and set tariffs for pilotage services.

While maintaining their regional organization, the CMA made several changes to the *Pilotage Act* intended to improve the efficiency and financial stability of the Authorities, including:

- Permitting Chairpersons to serve part-time as well as full-time;
- Removing Pilotage Authorities' access to appropriations from the federal Treasury;
- Modifying the tariff setting mechanism to expedite the process; and
- Instituting a new arbitration mechanism for settling contract disputes between the Authorities and pilots.

The Authorities are governed by seven person boards, appointed by the Governor in Council, consisting of a chairperson, two pilot representatives, two shipping industry representatives, and two community representatives. Pilotage Authorities' clients and key stakeholders on the East Coast are the members of the Canadian Shipowners Association, the Shipping Federation of Canada, and the St. Lawrence Ship Operators Association, while on the West Coast shipping interests are represented by the Chamber of Shipping of British Columbia.

The CMA also mandated a review of major pilotage issues such as compulsory pilotage area designations, the licensing and certification process, and vessel exemptions. In conducting the review, the Minister was assisted by the Canadian Transportation Agency. The review panel released its report containing 21 recommendations in November 1999. Arguably, the most significant recommendation related to using a risk-based assessment process for any changes to pilotage regulations. In 2000, Transport Canada developed a Pilotage Risk Management Methodology (PRMM) as a formal process for evaluating any significant changes to operational pilotage issues. All four Pilotage Authorities have approved and adopted the PRMM and have hired consultants to conduct specific risk assessment studies on outstanding issues highlighted by the CTA panel.

In 2003, of the four pilotage authorities, only the Great Lakes Pilotage Authority generated a net loss. Total revenues generated by all Pilotage Authorities reached approximately $120M in 2003 (preliminary numbers).

4.6 Canadian Coast Guard

The Canadian Coast Guard is a key national institution by which Canada exerts its influence over its water and its coasts and delivers on public expectations of clean, safe, secure, healthy and productive waters and coastlines. A vital symbol of Canada's sovereignty as a maritime nation, the Coast Guard delivers services to Canada and Canadians on four equally important levels:

- delivering Coast Guard programs;
- supporting departmental programs;
- supporting other government departments; and
- serving the broader Canadian interest.

The Canadian Coast Guard is a key national institution by which Canada exerts its influence over its water and its coasts and delivers on public expectations of clean, safe, secure, healthy and productive waters and coastlines

The Canadian Coast Guard plays a vital role in maintaining an accessible and sustainable national maritime transportation system by providing mariners — both commercial and recreational — with national programs and services related to aids to navigation, marine communications and traffic services, marine search and rescue, pollution response, icebreaking and waterways management.

Additionally, the Coast Guard manages and operates the departmental fleets (vessels and helicopters) and provides valuable maritime expertise and services in support of all mandated activities of the Department — particularly Science and Conservation and Protection — as well as the non-military marine activities of other federal departments and agencies, as mandated by the *Oceans Act.* As the only multi-functional and highly adaptable on-the-water platform system in Canada, the Coast Guard fleet — which consists of 107 vessels and 27 helicopters — is instrumental to the federal government in fulfilling its maritime mandate.

The Coast Guard's work also has an international dimension, through various bodies such as the United Nation's International Maritime Organization and the International Association of Marine Aids to Navigation and Lighthouse Authorities. Canada's international obligations in safety, security and environmental protection — such as the International Conventions on Maritime Search and Rescue, Oil Pollution Preparedness, Response and Co-operation, on Prevention of Pollution from Ships, and on Safety of Life at Sea — are fulfilled through Coast Guard programs and activities.

Coast Guard's activities are mandated by a number of legislative acts, including the *Oceans Act* and the *Canada Shipping Act*, as well as more regionally specific acts such as the *Arctic Waters Pollution Prevention Act*. They are also, in part, established in precedent and governed by public expectations.

4.7 Government Spending on Transportation

In 2002/03, governments spent $14 billion on roads and public spending on public transit services totaled $2.6 billion, while federal and provincial governments spent $2 billion on air, marine and rail transportation combined. Public spending related to marine mode, after excluding the transfer of the BC Ferry debt to the provincial government hovered around $1 billion in 2002/03 (see explanation below). The share of the marine mode in public spending on transportation reached five per cent, a level that has not changed significantly since the mid-1990s. Government spending in the air mode reached 3.5 per cent on gross government spending, down 18 per cent. Whereas in the rail mode, public spending has grown by 14.4 per cent per year since 1999/2000, accounting for 1.7 per cent of gross government spending on transportation – 75 to 80 per cent of this total was spent on rail passenger subsidies.

Table 9: Transport Expenditures/Evenues by Mode and Level of Government, 1999/2000 – 2002/03

(millions of dollars)

	1999/2000	2000/01	2001/02	2002/03	2003/04
Federal Operating and Maintenance, Capital and Subsidies					
Air	356	363	473	603	718
Marine	797	801	763	786	853
Rail	222	282	362	310	313
Road	394	328	394	461	451
Transit	-	-	2	66	32
Other/Overhead	224	236	318	292	298
Subtotal	**1,992**	**2,010**	**2,312**	**2,518**	**2,666**
Provincial, Territorial, Local					
Air	66	78	77	70	N/A
Marine	1,246	165	169	193	N/A
Rail	5	21	27	30	N/A
Road	12,044	12,876	12,809	13,580	N/A
Transit	2,618	2,421	2,392	2,553	N/A
Other/Overhead	344	390	452	548	N/A
Subtotal	**16,324**	**15,951**	**16,973**	**15,926**	**N/A**
Total Expenses: All Government Levels					
Air	422	442	549	672	N/A
Marine	2,044	966	933	978	N/A
Rail	227	303	389	340	N/A
Road	12,438	13,205	13,204	14,041	N/A
Transit	2,618	2,425	2,394	2,610	N/A
Other/Overhead	568	626	770	840	N/A
Total	**18,316**	**17,961**	**18,283**	**19491**	**N/A**

Government Revenues From Transport Users					
Road Users	12,820	12,686	12,811	13,499	N/A
Rail, Air and Marine	933	918	902	1,352	N/A
Multimodal	14	8	4	10	N/A
Total	**13,767**	**13,611**	**13,717**	**14,862**	**N/A**

On table 9, in 2002/03 total expenses from all levels of government totaled $978M. The federal portion of spending can be broken down further with the details on table 10 and 11. The total federal operating, maintenance and capital expenditures are split between Coast Guard Operations ($498M), Ports and Harbours ($120M) and Marine Safety and Policy ($59M). In addition to this, a total of $109.2M was spend on direct federal subsidies in the marine modes. When we add to this the provincial, territorial and local government spending of $193M, you have a total of $978M in marine related spending in 2002/03.

Table 10: Federal Operating, Maintenance and Capital Expenditures, 1999/2000 – 2003/04

(Millions of Dollars)

	1999/2000	2000/01	2001/02	2002/03	2003/04[F]
Operations	**907**	**935**	**945**	**938**	**927**
Airports	123	92	75	56	67
Aircraft Services	51	70	59	57	63
Coast Guard	480	496	475	498	521
Ports and Harbours[1]	99	107	117	120	122
Roads and Bridges[2]	141	159	208	195	145
Research and Development	13	11	10	13	12
Safety, Security, Policy	**342**	**354**	**446**	**686**	**809**
Canadian Air Transport Security Authority[3]	-	-	-	260	400
Air Safety and Policy[4]	142	153	161	167	186
Marine Safety and Policy	48	49	56	59	60
Road/Rail Safety and Policy	39	40	46	53	49
Multimodal Safety and Policy[5]	114	112	183	148	160
Total	**1,249**	**1,289**	**1,391**	**1,624**	**1,736**

Notes:

1. *Includes expenses for small fishing ports by Fisheries and Oceans Canada.*
2. *Includes contributions by Transport Canada to the Champlain and Jacques Cartier bridges, and expenses of the National Capital Commission, Public Works and Government Services, Parks Canada, and Indian and Northern Affairs.*
3. *Cash basis.*
4. *Includes expenses of the Civil Aviation Tribunal.*
5. *Includes expenses for the regulation and inspection of the transport of dangerous goods, Security and Emergency Preparedness, the Canadian Transportation Agency, and other multimodal safety, policy and analysis. Large increases in 2001/02 related to the purchase of explosives detection equipment.*

F. *Planned and/or actual.*

Table 11: Direct Federal Subsidies, Grants and Contributions by Mode, 1999/2000 – 2003/04

(Millions of Dollars)

	1999/2000	2000/01	2001/02	2002/03	2003/04[F]
Air Mode					
Airport (Operation/Capital)	38.7	46.8	50.6	35.3	39.7
Airport/Airline Assistance[1]	-	-	123.9	25.4	7.0
Other	1.6	1.8	2.9	2.7	3.3
Total Air	**40.3**	**48.5**	**177.4**	**63.4**	**50.0**
Marine Mode					
Marine Atlantic	114.8	38.6	36.8	46.4	41.6
Transfers to Ports[2]	22.0	45.4	21.6	22.1	69.7
Other ferry and coastal	31.8	30.8	31.7	32.2	32.0
Other[3]	1.8	35.0	24.9	8.5	7.9
Total Marine	**170.4**	**149.8**	**114.9**	**109.2**	**151.2**
Rail Mode					
VIA Rail	170.3	231.6	310.2	255.7	264.2
Hopper Cars	20.0	18.2	16.4	16.0	12.9
Grade Crossings	7.4	7.5	7.5	7.5	7.5
Other	8.3	8.4	8.3	8.6	8.9
Total Rail	**206.0**	**265.7**	**342.5**	**287.8**	**293.5**
Highway Modes					
Transition Programs[4]	57.5	15.3	23.7	37.2	32.2
Highway Agreements[5]	107.2	62.8	69.0	101.4	122.4
Infrastructure Program	-	-	7.4	34.8	57.5
Fixed Link in PEI	46.1	47.2	48.6	49.2	50.6
Other[6]	18.6	20.1	11.1	13.2	14.7
Total Highway Modes	**229.4**	**145.4**	**159.7**	**235.9**	**277.5**
Transit Systems[6,7]	**-**	**-**	**2.4**	**66.3**	**31.9**
Grand Total[8]	**646.3**	**609.8**	**747.8**	**763.3**	**805.4**

Notes:

1. *Includes air carrier assistance of $99 million in 2001/02 and a cabin security enhancement program of $28 million 2002/03 and $6 million in 2003/04.*
2. *Includes contributions to the Port Divestiture Fund, a payment of $36 million to the Government of Quebec for the transfer of ferry wharves in 2000/01 and $64 million for the payment of a loan guarantee to Ridley Terminals in 2003/04.*
3. *Includes a payment of $214 million to the Hamilton Harbour Commission for the settlement of a civil litigation.*
4. *Offset federal programs to the elimination of the Western Grain Transportation Act Program.*
5. *Includes $33 million in 2002/03 and $74 million in 2003/04 under the Strategic Highway Infrastructure Program.*
6. *Includes in 2002/03 and 2003/04 the estimated road and transit portion of the Toronto Waterfront Revitalization Project.*
7. *Spending included previously under Highway Modes.*
8. *Includes small amounts not classified elsewhere.*

F. *Planned and/or actual.*

In 2003/04, total federal direct subsidies, grants and contributions are expected to grow to $805 million.

4.8 Canadian Transportation Regulatory Framework

Below is a list of Marine Acts and Regulations for which the Minister of Transport is responsible and/or for which he shares responsibility:

Act	Regulations	Administration
Arctic Waters Pollution Prevention Act	Click here for complete listing	Minister of Transport; Minister of Indian Affairs and Northern Development; Minister of Natural Resources, Minister of the Environment

Canada Labour Code (Part II)	Sections 1 and 2, Part II Section 122 to 165	Minister of Labour; Minister of Transport
Canada Marine Act	Click here for complete listing	Minister of Transport
Canada Shipping Act, 2001		Minister of Transport, Minister of Fisheries and Oceans, Minister of the Environment
Canada Shipping Act	Click here for complete listing	Minister of Transport, Minister of Fisheries and Oceans, Minister of the Environment
Canada Transportation Act		Minister of Transport
Canada Water Act		Minister of the Environment
Canadian Environment Protection Act	Disposal at Sea	Minister of the Environment
Canadian Transportation Accident Investigation and Safety Board Act	Section 3-6 and 8-10	President of the Queen's Privy Council for Canada
Coasting Trade Act		Minister of Transport
Department of Fisheries and Oceans Act		Minister of Fisheries and Oceans
Department of Transport Act	Canal Historic Canal Transport Control	Minister of Transport
Financial Administration Act		Minister of Finance
Fisheries Act	Click here for complete listing	Minister of Fisheries and Oceans
Fisheries Inspection Act	Fish Inspection Regulations	Minister of Fisheries and Oceans
Fishing Development Act		Minister of Fisheries and Oceans
Fishing and Recreational Harbours Act	Fishing and Recreational Harbours Regulations	Minister of Fisheries and Oceans
Freshwater Fish Marketing Act		Minister of Fisheries and Oceans
Government Property Traffic Act	Government Property Traffic Canada Ports Corporation Operation By-law	Minister of Public Works and Government Services Canada; Minister of Transport
International River Improvement Act		Minister of the Environment
Lac Seul Conservation Act		Minister of the Environment
Marine War Risks Act		Minister of Transport
Marine Atlantic Inc. Acquisition Authorization Act		Minister of Transport
Marine Liability Act	Marine Liability	Minister of Transport
Marine Transportation Security Act	Marine Transportation Security	Minister of Transport
Maritime Code Act		Minister of Transport
Meaford Harbour Act		Minister of Transport
Navigable Waters Protection Act	Ferry Cable Regulations Navigable Waters Bridge Regulations Navigation Waters Works Regulations	Minister of Transport
Northumberland Strait Crossing Act		Minister of Transport
Pilotage Act	Click here for complete listing	Minister of Transport
Oceans Act		Minister of Fisheries and Oceans
Safe Containers Convention Act and Regulations	Safety Containers Convention	Minister of Transport
Shipping Conferences Exemptions Act, 1987	Shipping Conferences Independent Action Order	Minister of Transport

Transportation of Dangerous Goods Act, 1992		Minister of Transport, Minister of the Environment

The federal government has long recognized that an effective market depends on the responsiveness of its regulatory framework and processes. The 2003 Speech from the Throne identified Smart Regulation as a priority. It was recognized in the Speech that the world is changing and in an evolving environment, Canada needs a regulatory system that responds quickly and effectively to the challenges of rapid scientific and technological change, as well as emerging opportunities and risks in global markets. It was also acknowledged that there is a resulting need for integrated and transparent government institutions and public policy. An External Advisory Committee on Smart Regulation (www.smartregulation.gc.ca) has been created to work towards building a national regulatory system that enables Canadians to take advantage of new knowledge and supports Canada's participation in an international economy. It promotes a regulatory system that should adhere to the following principles: effectiveness, flexibility, transparency, accountability, and cooperation.

4.9 Innovation and Technology

> ***Canada is already recognized internationally as a strong niche player in marine industries, especially in some specialized areas such as cold-water technology….Synergies and strong social networks are necessary and will be evident between the private sector, academia and government research labs.***
> *Marine and Ocean Industry Technology Road Map – Industry Canada*

The Technology Roadmap was initiated by the National Research Council (NCR) to identify future technology market needs and scope out the most effective method to achieve them. A Marine and Oceans Industry Technology Roadmap Steering Committee comprised of 30 members including marine industry companies from across the country with support from the NRC, Industry Canada, Department of Fisheries and Oceans, Natural Resources Canada and Environment Canada tabled its special report "Thinking Beyond Our Shoreline" to Industry Canada on December 11, 2002. The Report identifies 1,200 technology ideas, many of which are relevant to such marine operations as security and defence and port development. The NRC has established a Technology Road Map website to keep its information on innovation technologies fresh, it can be found at: http://route.nrc-cnrc.gc.ca/ocean/trm/home_e.cfm. The road map is intended as practical forecasting tool through which marine and ocean industries can identify future needs

4.10 Marine Policy Initiatives

Transport Canada's focus is to consider how legislation and policy can respond to market opportunities and challenges as the marine sector evolves, to ensure that service and infrastructure providers have the necessary tools to contribute positively, not only to enhance the competitiveness of Canada's transportation system, but also more broadly to Canada's economic strength and trading relationships. The department is currently involved in a comprehensive range of marine initiatives to support policy development in order to more effectively position Canada's marine sector within the domestic and international transportation marketplace.

Marine Benefit Study

Transport Canada, in partnership with Canada's major marine industry associations, is conducting a comprehensive study of the significance and value of marine transportation to Canada. The study will examine the marine and marine-related transportation industry as related to the shipment, transhipment, storage and handling of commodities. The study will be national in scope but will provide a regional and sectoral breakdown of economic impacts. The study will create a fundamental benchmark against which

future developments and will help to support future Canadian policy direction with respect to infrastructure, regulations and pricing/fee decision-making.

Marine Navigational Services Study

Transport Canada, in partnership with Fisheries and Oceans Canada and industry stakeholders, is committed to evaluating alternative methods of delivering marine navigational services (MNS). Phase I of the study described the existing MNS system and methods of delivering MNS in selected other countries that may have useful lessons learned for Canada. Transport Canada and Fisheries and Oceans Canada are currently engaging industry and initiating Phase II of the study, which will explore whether alternative methods of delivering MNS might benefit both the government and the marine industry by contributing to a more efficient and equitable provision of MNS.

Great Lakes St. Lawrence Seaway Study

Transport Canada is currently working with the US Department of Transportation, the US Army Corps of Engineers and the Canadian Seaway Corporation on a comprehensive study to assess the ongoing maintenance and capital requirements of sustaining and optimizing the Seaway and the existing marine infrastructure on which it depends. The focus of the study is principally navigational. While the study will assess the infrastructure needs of the Seaway, along with the engineering, economic and environmental implications of those needs, particular emphasis is being placed on the costs of maintaining the existing infrastructure. The future level of these costs has a major impact on the continuing viability of the system and ultimately on the development of government policy. The study, initiated in May 2003 pursuant to a Memorandum of Cooperation signed between the Minister of Transport and the US Secretary of Transportation, is expected to be completed by Fall 2006.

Shortsea Shipping

Transport Canada is exploring shortsea shipping opportunities as a means to improve utilization of waterway capacity, strengthen intermodalism, alleviate highway congestion, facilitate trade, and reduce greenhouse gas emissions. Shortsea shipping – the movement of cargo and passengers by water between points that are in relatively close proximity to one another – includes domestic as well as international maritime transport along coastlines, to and from nearby islands, or within lakes and river systems and may also include crossborder traffic with the US and Mexico. Generally speaking, shortsea shipping is designed to increase the efficiency and environmental sustainability of an overall integrated transportation system in order to meet current and future demands arising from economic expansion, increased trade, population growth and urbanization.

In positioning shortsea shipping among a range of policy initiatives, Transport Canada has taken a multi-faceted approach that has included conducting a series of shortsea shipping workshops, research projects and studies, as well as concluding a Memorandum of Cooperation with the US and Mexico, and developing a website for effective communication. In addition, a national shortsea shipping conference is planned for November 2004 in order to take advantage of the momentum developed within the marine industry. Transport Canada will continue to pursue an action plan involving industry, other government departments and agencies, other levels of government, and other countries, in order to raise awareness and promote shortsea shipping as a component of an integrated transportation system.

Canada Marine Act Review

The CMA required the Minister of Transport to complete a review of the provisions and operation of the Act and report back to both Houses of Parliament during the fifth year following Royal Assent. A review panel undertook consultations with stakeholders and prepared a report with recommendations on the

operation and provisions of the CMA and observations on general marine issues. The Minister of Transport tabled this report in the House of Commons in June 2003. The Review Report made two general recommendations and a number of specific recommendations concerning the implementation issues related to Canada Port Authorities, the St. Lawrence Seaway, public ports, pilotage and ferries. The report also included a number of observations on general marine issues. In an effort to appropriately address these issues, the department is conducting studies to assess the state of the marine industry markets and trends, particularly in respect of recommendations/observations that have significant financial implications.

Marine Skills and Labour Force Development

Transport Canada is committed to working with other departments, other levels of government, and transportation sector stakeholders to ensure the continued availability of a world-class workforce for the transportation sector. An aging workforce in the marine transportation sector has the potential to create a shortfall of available workers over the next decade due to attrition. This places a premium on the sector's ability to attract new and skilled workers in an environment where there is cross-sector competition for workers as other sectors face similar trends. Many jobs in the marine transportation industry require high skill levels with requirements for new skills and continuous training. Marine sector employers express concerns with the availability of training, funding for training, as well as the ability of marine training institutes to recruit youth to marine training programs. Transport Canada is exploring ways to gain an understanding of the human resource challenges facing the marine transportation sector, the concerns of marine transportation stakeholders, and ways that the department can assist in skills and labour force development.

International Marine Policy

Transport Canada participates on a number of multilateral organizations dealing with economic aspects of international shipping – IMO, United Nations Commission on International Trade Law, Organization for Economic Cooperation and Development, International Oil Pollution Compensation Fund, Asia Pacific Economic Cooperation, North Atlantic Treaty Organization and World Trade Organization. International marine policy and legislation relies heavily on a multilateral approach and the harmonization of Canadian law with international maritime conventions and agreements:

- Canada is currently chairing the executive committee of the International Oil Pollution Compensation Fund that deals with pollution claims caused by the prestige incident;
- Work is underway to introduce regulations under the *Marine Liability Act* in order to harmonize differences in liability and insurance regimes between Canada and the US in respect of passengers. In August 2003, the department released a report regarding a proposal for a new compulsory passenger insurance regime under the act; and
- On a broader scale, the department is also examining current trends in international shipping and the extent to which Canada's international shipping policies are appropriate.

Fuel savings translate into fewer emissions and contribute to Canada's climate change efforts, while improving the bottom line for industry.

Transport Canada, Environmental Initiatives

Freight Sustainability Demonstration Program

Transport Canada's Freight Sustainability Demonstration Program (FSDP: www.tc.gc.ca/FSDP <http://www.tc.gc.ca/FSDP>) was created to help freight transportation industries put new and under-utilized technologies, as well as, new operational practices, to the test in real-world situations to demonstrate and evaluate their fuel saving potential. The goal of the FSDP is to help the freight transportation sector improve its economic performance while reducing its environmental impact,

including greenhouse gas emissions that are responsible for climate change. Through demonstrations, it gathers practical information to be shared with the freight community. A total of $4.5M is available to industry through the FSDP for this purpose. The FSDP covers up to 50 percent of eligible expenses of demonstrations in all freight modes (air, marine, rail, truck and intermodal) to a maximum contribution for any single project of $250,000.

Canada's Maritime Cabotage Policy

In relation to marine cabotage, Canada has pursued an unbroken policy of protection. The primary goal has been to provide a protected environment in which Canadian shipping could prosper, without being exposed to the full force of international competition. Canada protects its maritime cabotage activities principally through two legal instruments: the *Coasting Trade Act* and the *Customs Tariff*. The *Coasting Trade Act* allows for the temporary importation of a non-Canadian registered or non duty-paid Canadian registered vessel, when no Canadian registered duty-paid vessel is available or suitable to carry out the activity. The *Customs Tariff* sets the import duty at 25% of the fair market value of the vessel for most types of ships being imported into Canada.

A recent report commissioned by Transport Canada indicates that both national and global shipping trade and business environments have changed and it is time to re-evaluate the Canadian cabotage policy. The report concludes that the current cabotage regime must be modified by gradually introducing a commercial environment that would allow mobility between the domestic and international sectors. This would allow Canadian ship operators to achieve greater efficiency by seeking alternative employment for their ships in the international market when there is low demand in the domestic market (or to adjust to the seasonality of certain trades such as the Great Lakes). A full review of the cabotage and customs tariff regime would entail extensive research, interdepartmental consultation and cooperation and discussions with industry and labour. Transport Canada is currently considering its options.

4.11 Marine User Fees

A variety of user fees are levied against the Canadian marine industry. Fees are levied both by government departments such as Fisheries and Oceans Canada and Transport Canada and by other organizations such as CPAs, the SLSMC and Pilotage Authorities.

Table 12: Marine User Fees in Canada

Organization		*Fee Description* ***(Inception Year When Available)***
Government Departments	*Agriculture Canada*	• Vessel Inspection Fees
	Health Canada	• Cruise Ship Inspection Fee • De-ratting Exemption Certificate
	Transport Canada	• Ship Safety Fees • Public Harbours and Ports Fees
	Fisheries and Oceans	• Marine Navigation Services Fees (from 1996) • Coast Guards Marine Communication and Traffic Fees • Icebreaking Fee (from December 1998) • Canadian Hydrographic Service Nautical Charts Purchase Fees
	Canada Customs and Revenue Agency	• Custom and Immigration Ship Inspection Fee

Government Agencies	*Canadian Port Authorities*	• Fees for Berthage/Dockage, Wharfage and Other Services
	Canadian Pilotage Authorities	• Pilotage Fees
	St. Lawrence Seaway Management Corporation	• Tariffs and Tolls in the St. Lawrence Seaway
	Response Organizations	• Registration Fees • Bulk Oil Cargo Fee

Cumulative Impact of Federal Fees on the Commercial Marine Transportation Industry in Canada Synthesis of Background Information – Final March 2002

In 2000-2001, approximately $481M was collected in fees. The majority of this was collected by CPAs, Pilotage Authorities and the SLSMC.

4.12 Transportation Safety and Security

When it comes to the safety record of the commercial marine industry consider the following. In 2003, there were 18 cargo vessels involved in accidents, which represents a 22% decrease compared to 2002, and a 31% decrease from the five year average of 26.

In 2003, the accident rate for commercial vessels (includes cargo vessels, ferries, tankers, passenger vessels, tugs and barges) was at the all time low of 2.7 per 1000 movements (5.2 in 1994), despite the increase in movements to 38,726 (up from 32,728 in 1994). This represents a decrease of the number of Canadian flagged vessels involved in shipping accidents from 202 in 1994 to 164 in 2003. This compares to 57 foreign flagged vessels or a rate of 1.4 accidents per 1000 movements in 2003 for foreign flagged vessels in the same category – an all time low. This means that foreign flagged vessels have reduced the total number of vessels involved in shipping accidents from 157 in 1994 to a total of 57 in 2003. In 2003, 89% of vessels involved in shipping accidents reported to the Transportation Safety Board were Canadian-flag vessels. Fifty-four percent of these were fishing vessels, 35% were commercial non-fishing vessels and the remaining 11% were non-commercial/pleasure craft or service vessels

4.13 Modal Comparison – Safety Statistics

Now, let's compare this with the rail and road modes of transport.

Marine transport is the safest and cleanest way of moving bulk cargoes. Canadian fleets emit less polluting agents, burn less fuel and make less noise than other transport modes.

Canadian Shipowners Association 2003-2004 Report

In 2003, 1,030 rail accidents were reported to the Transportation Safety Board, a 5% increase from 2002 but a 3% decrease from the 1998-2002 average of 1,062. In the rail industry, freight trains accounted for 80% of trains involved in rail accidents in 2003. A total of 148 main-track derailments were reported in 2003 (157 in 1994), a 28% increase from 2002 (116) and a 25% increase from the five year average of 118. The most significant increase located in the province of Ontario. To date in July 2004, a total of 668 accidents have been reported, resulting in a rate of 12.7 accidents/million train miles, up from 11, 6 at the same time last year and 12,2 for the 1999-2003 average.

On the commercial vehicle safety side, despite the fact that ever-increasing amounts of goods are transported by commercial carriers, the share of serious collisions involving commercial vehicles has held steady over the years. On average, crashes involving commercial vehicles account for approximately 20% of all traffic fatalities (resulting in 519 in 2002) and 10% of all serious injuries each year (resulting in approximately 1,650 injuries in 2002). Canada's federal, provincial and territorial governments are

working together to reduce the maximum driver workday by 12.5%, reduce the number of maximum daily driving hours by 18.8% and increase daily off-duty time by 25% in order to address the issue of driver fatigue, a major factor leading to most accidents on the road.

4.14 Security

During 2003, public confidence in the security of the transportation system continued to increase. Working with government, industry and other stakeholders, Transport Canada introduced new security initiatives in all modes and continued to implement security enhancements announced in 2001. Progress was achieved on the adoption and implementation of the International Ship and Port Facility Security Code with the development of guidelines for ship and port facility security assessments and plans, consultations on the development of the regulatory framework, and the development of an oversight, compliance and enforcement program.

In addition, the CCG is developing an Automatic Identification System that will allow it to improve the surveillance of vessels with 'near real-time' identification and tracking of vessels approaching and operating in Canadian waters.

4.15 Transportation and the Environment

25 per cent of greenhouse gas emissions in Canada is attributable to the transportation sector; 81.6 per cent from road transportation, 9.7 per cent from air, 3.4 per cent from rail and 5.1 per cent from marine. Marine emissions fell by over 27 per cent between 1980 and 2002.

Pipeline and air transportation each increased domestic energy consumption by 5.2 per cent in 2003. Road transportation energy use increased by 2.2 per cent, while rail and marine transportation energy use declined by 9.3 and 10.2 per cent.

Transport Canada has authority for certain environmental issues (e.g. *Canada Shipping Ac*t, *Arctic Waters Pollution Prevention Act*, *Transportation of Dangerous Goods Act*) and works with other federal government departments in this area. The federal government strives to improve the environment management of its operations by mitigating adverse impacts. By reducing its own environmental impacts, Transport Canada seeks to set a positive example for others in the transportation sector. Although the department no longer directly operates many components of the transportation system, it retains the role of landlord and overseer for major components. In this role, Transport Canada is responsible for ensuring appropriate stewardship of its land and facilities.

Transportation-related water pollution remains an important issue. The federal government aims to protect the integrity of aquatic and terrestrial ecosystems, avoid human exposure to hazardous substances and preserve human enjoyment of the environment. In 2003, for example, the federal government continued to prevent, detect and respond to marine pollution incidents through a national marine spill preparedness and response system. It participated in and contributed to the development of new regulations through meetings of the IMO. Amendments to the Dangerous Goods Shipping Regulations have resulted in a greater consistency between Canadian dangerous goods regulations and international marine pollution agreements. These regulations require clear identification of marine pollutants to minimize accidental pollution and proper marking and labeling of packages.

Canada brought into force in 2003 new limits for oil spill incidents from tankers as part of the International Convention on Civil Liability for Bunker Oil Pollution Damage and the International

Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage agreed to by the IMO.

Studies have shown that vessel transport is safer, requires less fuel, and produces fewer emissions per tonne-kilometre of cargo carried than either rail or truck transport. This is an important consideration in meeting greenhouse gas emissions targets.

Table 13: Environmental and Safety Indices by Mode of Transport

Category	Marine Factor	Marine Index	Rail Index	Truck Index
Energy Efficiency	130 kjoule / t-km	1	2.2	9.7
Air Emissions	15.73 g / t-km	1	1.4	7.6
Accidents	0.026/100 M t-km	1	13.7	74.7
Spills	0.008/100 M t-km	1	10.0	37.5
Noise Levels	66 dB	1	1.4	1.3

Étude comparative des impacts environnementaux des modes de transport de marchandises dans l'axe du Saint-Laurent, Annexe 1

5. MOVING FORWARD

Governance systems vary widely around the world. International literature confirms that the marine industry is quickly evolving and that innovative approaches to business and government oversight are required to sustain the marine sector in to the future. There is an international trend for decreasing government involvement in service delivery, especially in more developed countries. Both the federal government and the marine industry recognizes the pressures that are increasingly imposed by global markets and the resulting strain on the ability of the Canadian marine industry to respond effectively to these pressures and set itself up to be in a good competitive position on world markets.

Both parties recognize that they have to work together to define strategies to make the industry stronger. For industry this means improving on its market shares and increased flexibility. For government it means maintaining a safe and secure trade market that benefit the Canadian economy as a whole. The key will be to find the right balance between the needs of both parties.

The key will be to find the right balance between the needs of government and industry.

There are some parallels that can be drawn from both the commercial challenges and government perspectives summarized in this document. Four key themes can be identified as:

- Promoting public awareness of the importance of the marine industry to the Canadian economy;
- Developing strategies to enhance competitiveness and trade networks (regulatory oversight and infrastructure needs);
- Promoting innovation and technology Research and Development; and
- Developing stronger industry/government partnerships.

As part of the NMIC's objective to promote the importance of the marine industry, it will be important for these issues to be further explored and for strategies to be developed in order to position the marine industry as a global front runner in trade markets while benefiting Canadians and the economy. The NMIC is well positioned to bring both industry and government views together to define these strategies and find the best possible way of implementing them through a well defined Action Plan.

A well defined Action Plan will help guide the NMIC in developing strategies that will benefit both the industry and the government's objectives.

ANNEX 1 - CLIENT INDUSTRIES

Many industries in Canada are involved in marine transportation somewhere in their supply or distribution chain. Sometimes companies, such as base metal mines in the Arctic, are wholly marine dependent for all supplies and shipping. Industries can be partially dependent, like much of aluminum smelting in Canada where raw materials come in by water, but production goes out by rail or truck. Some industries, such as iron ore, are heavily involved with both domestic and international marine activity, while others, such as West Coast coal, are dependent on international marine to move production from port to customer. However, as with many activities in Canada, because of the distances involved, industries have a multimodal dependence. The grain industry has a unique dependence on truck from farm to country elevator, rail to port and then, for much of Eastern-shipped grain, domestic marine through the Great Lakes followed by international marine from tidewater to market port. Below is a list of key products for the marine industry.

Agri Products

Products included: oil seeds, peas, beans, lentils
Quantity shipped by water in 1998: 11.3 million tonnes of which a significant portion was containerized. This is primarily an export cargo.
Marine modal dependency: high export marine, internal truck and rail
Marine regional importance: Pacific, Great Lakes
Trends: Volumes increasing as farmers have moved away from traditional cereal into higher value products. Strong growth in oil seeds, evidenced by a three-fold increase in edible oil shipments through Pacific region between 1994 and 1998. Organic food markets are showing particular demand for Canadian products.
Dependent movements: fertilizers

Aluminum

Products included: alumina, bauxite, aluminum ingot, manufactured.
Quantity shipped by water in 1998: 6.6 million tonnes in mainly imported alumina and bauxite. Very little containerized cargo and most aluminum metal is shipped by road or rail.
Marine modal dependency: high import marine, high export truck and rail
Marine regional importance: Great Lakes/St. Lawrence Seaway
Trends: Aluminum production is energy-price driven. Canada tends to have low energy prices and as a result is a substantial aluminum producer, the third largest in the world after US and Russia. A study is ongoing into a new smelter on Vancouver Island, and there is a major smelter expansion being completed in Quebec. Growth will depend on the world economy. There are possible problems with energy supply if climate changes due to global warming reduce rainfall in Canada, and reduce hydro potential.
Dependent movements: petroleum coke, pitch, fluorspar

Base Metals

Products included: lead, zinc, copper, nickel. By-product metals that may be produced are gold, cobalt and silver.
Quantity shipped by water in 1998: 1 million tonnes loaded, also .6 million tonnes unloaded. Very little containerized cargo
Marine modal dependency: high export marine
Marine regional importance: Arctic
Trends: Canadian involvement in local resources is comparatively small and two Arctic mines are likely to close in the near future. A new nickel mine has recently opened in Nunavik and, depending on

agreements relative to infrastructure development, and continued pricing internationally, a new mine may be developed in Nunavut.
Dependent movements: sulphuric acid shipped from smelters as a by-product of the process

Cement

Products included: Clinker and powder cement
Quantity shipped by water in 1998: 4.7 million tonnes. This is primarily an export cargo in the Great Lakes, with a significant domestic component. This is a very water dependent commodity for shipping.
Marine modal dependency: high export marine
Marine regional importance: Great Lakes
Trends: Cement demand is tied to building cycles, and it is unlikely there will be significant changes.
Dependent movements: coal, gypsum and limestonne

Chemicals

Products included: inorganic chemicals such as sodium hydroxide, sulphuric acid, calcium chloride. organic chemicals such as benzene, toluene, xylene.
Quantity shipped by water in 1998: 6.6 tonnes. This is mainly export cargo, largely from the West Coast. There is significant trade in containerized chemicals, particularly through Great Lakes/St. Lawrence Seaway region. A large portion of movements of sulphuric acid is railed from ore processing plants to markets in Canada and the USA.
Marine modal dependency: low.
Marine regional importance: Pacific
Trends: Water movements will be stable. Pacific region exports were at 2.9 million tonnes in 1984, and 3.2 million tonnes in 1998.
Dependent movements: none

Coal and Coke

Products included: metallurgical and thermal coal, coke and petroleum coke
Quantity shipped by water in 1998: 53.9 million tonnes, approximately 62% of which was exported, 36% was imported and 2% was moved domestically. A very high proportion of total production moves by water, but almost all coal exports and domestic coal also move by rail during the shipping process.
Marine modal dependency: high
Marine regional importance: Pacific, Great Lakes/St. Lawrence Seaway, Great Lakes
Trends: Export metallurgical coal will likely decline as mines are closed due to low prices on the international market. Thermal coal imports, particularly on the Great Lakes will increase with growing demand for electrical power in Ontario, and retirement of nuclear power plants. Some increase in coke movements will occur to Great Lakes/St. Lawrence Seaway region on completion of the aluminum smelter expansion.
Dependent movements: none

Fertilizers

Products included: phosphate and nitrogenous fertilizers, both natural and manufactured. Potash is not included.
Quantity shipped by water in 1998: 1 million tonnes. This is mainly exports through the West Coast and imports through Great Lakes/St. Lawrence Seaway region. There is very little domestic movement. Most fertilizer materials are shipped to/from the US by rail. (Included with fertilizer materials in Section 2.)
Marine modal dependency: low
Marine regional importance: Pacific, Great Lakes/St. Lawrence Seaway

Trends: probably downward in terms of water movement
Dependent movements: none

Forest Products

Products included: logs to finished paper
Quantity shipped by water in 1998: 28 million tonnes of which about 36% was in domestic trade, primarily on the West Coast. Small quantities were imported. There is very significant rehandling of waterborne movements. The Great Lakes has very little involvement in waterborne trade. About 12% is containerized.
Marine modal dependency: high in certain regions for export and/or domestic movements
Marine regional importance: Pacific, Great Lakes/St. Lawrence Seaway, Atlantic
Trends: Quantities moved by water have declined considerably over the last 15 years, and may not recover even if the US removes the value-based Harbour Maintenance Fee that caused many marine movements to be terminated. These are high-value products and Just-in-Time inventory systems may well limit the opportunity for marine movements which are typically large and infrequent versus truck or rail which are small and frequent.
Dependent movements: Process chemicals, oil products

General Cargo

Products included: This is a catchall for goods that have not been classified elsewhere.
Quantity shipped by water in 1998: 2.3 million tonnes. However there are significant omissions in data as ferries carry General Cargo in trucks. This data is not captured by Statistics Canada. Maritime data is believed low by at least .5 million tonnes as a consequence. Over 60% is containerized.
Marine modal dependency: low
Marine regional importance: Great Lakes/St. Lawrence Seaway, Atlantic
Trends: The goods covered within this heading will be dependent on economic cycles. However, as the heading is primarily a residual one, definition of cargo will also cause quantities to fluctuate.
Dependent movements: None

Grains

Products included: wheat, barley, corn, oats, rye
Quantity shipped by water in 1998: 21 million tonnes. Note however a significant amount of grain is rehandled from both Canada and US Great Lakes ports and in Great Lakes/St. Lawrence Seaway region. About 21% is handled in domestic trade and a further 8% from US Great Lakes ports. Less than 1% is containerized.
Marine modal dependency: high
Marine regional importance: Pacific, Great Lakes, Great Lakes/St. Lawrence Seaway
Trends: Volumes moved by water have not recovered from the impact of loss of traditional European markets due to the Common Agricultural Policy. There is a trend towards diversification away from wheat, the most heavily impacted crop, but this still constitutes nearly 50% of crop production. Durum, corn and oats have shown strong increases in recent years.
Dependent movements: fertilizers

Gypsum

Products included: Gypsum rock
Quantity shipped by water in 1998: 7.7 million tonnes, predominantly an export cargo from Atlantic region to the US East coast
Marine modal dependency: high

Marine regional importance: Atlantic
Trends: The primary use is in wallboard - 75%, with much of the balance going into powder cement. Synthetic gypsum from flue gas desuphurization is an important competitor and increased recycling of scrap board is tending to cap demand. Use is dependent on the US economy and housing starts. Waterborne shipments will remain stable.
Dependent movements: None

Iron and Steel

Products included: Iron and steel from billets to manufactured
Quantity shipped by water in 1998: 6.5 million tonnes. 42% of all steel shipments were by water. There is a trend for higher quality steels to be containerized and 14% of shipments were handled in this way. Much of waterborne movements - 80% - are imports.
Marine modal dependency: low.
Marine regional importance: Great Lakes, Great Lakes/St. Lawrence Seaway
Trends: Steel is a mature industry and there are unlikely to be major increases in demand. The automobile industry is a big user, and reduction in demand in this industry could lead to falls in production.
Dependent movements: Coal and iron ore

Iron Ore

Products included: iron ore and pellets
Quantity shipped by water in 1998: 45.4 million tonnes. About 15% is shipped domestically to mills in Hamilton. Mills above the Welland Canal use US iron ore. An equivalent amount is shipped to US mills on the Great Lakes, the balance being exported to US East Coast and international destinations. (Covered in Section 2.)
Marine modal dependency: high
Marine regional importance: Great Lakes/St. Lawrence Seaway, Great Lakes
Trends: The three Canadian mines operating in Quebec and Labrador are partially owned by the Canadian and/or US steel industries. Prospects for increased activity are low as the sole use of iron ore is in the production of steel, which is itself, a mature industry. The recently announced reactivation of a pellet plant in Sept Isles may not go ahead following the takeover of the principal shareholder by Rio Tinto.
Dependent movements: none

Petroleum Products

Products included: crude through to gasoline, but excluding petrochemicals
Quantity shipped by water in 1998: 63.7 million tonnes. The bulk of the movements, almost 40%, is crude oil moving to refineries in the Atlantic and Great Lakes/St. Lawrence Seaway regions. 88% of all movements are in international trade.
Marine modal dependency: high for imports, low for shipments
Marine regional importance: Atlantic, Great Lakes/St. Lawrence Seaway
Trends: International movements will probably increase. However domestic movements, particularly from the Great Lakes/St. Lawrence Seaway region could continue to decline.
Dependent movements: None

Retail Goods

Products included: dry goods, produce, beer, wines and spirits
Quantity shipped by water in 1998: 7.1 million tonnes, nearly 80% of which was containerized and very little appeared in domestic trade. Roughly balanced between imports and exports
Marine modal dependency: high

Marine regional importance: Great Lakes/St. Lawrence Seaway, Pacific
Trends: upward with Canadian population growth and economy
Dependent movements: none

Salt

Products included: road and industrial salt
Quantity shipped by water in 1998: 8.4 million tonnes of which 38% was in domestic trade.
Marine modal dependency: high
Marine regional importance: Great Lakes, Great Lakes/St. Lawrence Seaway
Trends: Growth has been strong in recent years because of the loss of a major mine in upper New York State due to uncontrolled flooding. Further significant growth is not expected. Canadian exports from mines on the Great Lakes grew from 2.3 million tonnes in 1984 to 3.8 tonnes in 1998. It should be noted that official statistics are unreliable due to data suppression to protect "commercial interests".
Dependent movements: none

Stonne, Sand and Gravel

Products included: construction aggregates, sand, gravel, dimensional stonne, armourstonne
Quantity shipped by water 1998: 23.8 million tonnes. About 38% moved in domestic trade and a similar amount was imported. Less than 10% of Canadian production is moved by water as most is trucked.
Marine modal dependency: low
Marine regional importance: Great Lakes
Trends: Highly dependent on construction cycles and because of the low inherent value, strong modal pressure. Unlikely to be significant upward trends in marine movements.
Dependent movements: None

Sugar and Molasses

Products included: raw and finished sugars, molasses
Quantity shipped by water 1998: 1.7 million tonnes. About 14% is rehandled through Great Lakes/St. Lawrence Seaway region from ocean vessels to lakes boats for winter storage in Toronto.
Marine modal dependency: high for raws, zero for finished
Marine regional importance: Great Lakes, Great Lakes/St. Lawrence Seaway
Trends: The transshipment from Great Lakes/St. Lawrence Seaway region into Great Lakes region has created additional traffic, but overall trends are flat.
Dependent movements: none

Sulphur and Potash

Products included: sulphur and potash
Quantity shipped by water 1998: 4.8 million tonnes
Marine modal dependency: high for exports
Marine regional importance: Pacific
Trends: Volumes have now stabilized, but potash movements on the Great Lakes were seriously impacted by modal competition with rail. Pacific region movements of potash are also down due to use of a US port for some exports. Little expectation of major change.
Dependent movements: None

ANNEX 2 - REGULATIONS

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Arctic Waters Pollution Prevention
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Shipping Safety Control Zones Order
Steering Appliances and Equipment
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Aids to Navigation Protection
Air Pollution
Anchorage
Board of Steamship Inspection Scale of Fees
Boat and Fire Drill
Boating Restrictions
Burlington Canal
Charts and Nautical Publications
Classed Ships Inspection
Collision
Competency of Operators of Pleasure Craft
Crew Accomodation
Crewing
Dangerous Bulk Materials
Dangerous Chemicals and Noxious Liquid Substances
Dangerous Goods Shipping
Eastern Canada Vessel Traffic Services Zone
Fire Detection and Extinguishing Equipment
Garbage Pollution Prevention
General Load Line Rules
Grain Cargo
Great Lakes Sewage Pollution Prevention
Hull Construction
Hull Inspection
Large Fishing Vessel Inspection
Life Saving Equipment
Load Line Assignment Authorization Order
Load Line Exemption Order
Load Line (Inland)
Load Line (Sea)
Load Line Rules for Lakes and Rivers
Marine Certification
Marine Machinery
Minor Waters Order
Navigating Appliances and Equipment
Non-Canadian Ships Safety Order
Non-Pleasure Craft Sewage Pollution Prevention
Oil Pollution Prevention
Pilot Ladder
Pleasure Craft Sewage Pollution Prevention
Pollutant Discharge Reporting

Pollutant Substances
Port Wardens Tariff
Private Buoy
Publication of Standards
Response Organizations and Oil Handling Facilities
Sable Island
Safe Working Practices
Safety Management
St. Clair and Detroit River Navigation Safety
Ship Fumigation
Ship Radio Inspection Fees
Ship Registration and Tonnage
Ship Station (Radio)
Ship Station (Radio) Technical
Ship's Tonnage Survey and Measurement Fees
Shipping Casualties Reporting
Shipping Inquiries and Investigations Rules
Ships' Crews Food and Catering
Ships' Elevator
Ships Registry and Licensing Fees Tariff
Small Fishing Vessel Inspection
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Atlantic Pilotage
- Atlantic Pilotage Authority
- Atlantic Pilotage Authority Non-compulsory Area
- Atlantic Pilotage Tariff
- Atlantic Pilotage Tariff --Newfoundland and Labrador Non-Compulsory Areas

Great Lakes Pilotage Authority
- Great Lakes Pilotage
- Great Lakes Pilotage Tariff

Laurentian Pilotage Authority
- Laurentian Pilotage Authority District No. 3
- Laurentian Pilotage Authority
- Laurentian Pilotage Tariff

Pacific Pilotage Authority
- Pacific Pilotage
- Pacific Pilotage Tariff

Other Departments that have Environmental Responsibilities – **Back** **to document**

Agriculture Canada – Environment and Sustainability
Canadian International Development Agency
Fisheries and Oceans – CCG Environmental Response, St. Lawrence Observatory
Foreign Affairs and International Trade – Canada's Clean Development Mechanism & Joint Implementation Office (Climate Change), Sustainable Development
Health Canada – Climate Change and Health Office, Health and Air Quality, WHMIS
Industry Canada – Biotechnology Regulatory Assistance Virtual Office, Corporate Social Responsibility, Eco-Efficiency, Environmental Affairs (Strategis), Sustainable Development
National Defence – Environment Division, Office of Critical Infrastructure Protection and Emergency Preparedness
National Research Council of Canada – Biotechnology
Natural Resources – Climate Change, Office of Energy Efficiency, Sustainable Communities Initiative

REFERENCES

Transport Canada, Transportation in Canada 2003 – Annual Report, TP 13198E, Minister of Public Works and Government Services Canada, Canada, 2003

Treasury Board Secretariat, 2003-04 Estimates – A Report on Plans and Priorities, Minister of Public Works and Government Services Canada, Canada, 2003

Transportation Safety Board of Canada, Transportation Safety Board – Annual Report to Parliament 2002-2003, Minister of Public Works and Government Services Canada, ISBN 0-662-67246-1, Canada, 2003

Transportation Safety Board of Canada, Annual Marine Occurrence Statistics for 2003, Minister of Public Works and Government Services Canada, ISBN 0-662-68151-7

Transportation Safety Board of Canada, Annual Rail Occurrence Statistics for 2003, Minister of Public Works and Government Services Canada, ISBN 0-662-68152-5

Canadian Shipowners Association – 2003-2004 Report, Canadian Shipowners Association, Canada, 2004