EXECUTIVE SUMMARY

ECONOMIC IMPACTS OF MARITIME SHIPPING IN THE GREAT LAKES – ST. LAWRENCE REGION

MARTIN ASSOCIATES - LANCASTER, PA

JULY 2023

EXECUTIVE SUMMARY

AT A GLANCE – STUDY HIGHLIGHTS

① GREAT LAKES ST. LAWRENCE SEAWAY

135.7 M
tons moved

241,286
jobs supported

US$26.1 B / Cdn$33.9 B
of cargo value

US$17.8 B / Cdn$23.2 B
wages paid

US$36 B / Cdn$46.8 B
of economic activity

② GREAT LAKES ST. LAWRENCE WATERWAY

252.1 M
tons moved

356,858
jobs supported

US$120.9 B / Cdn$157.2 B
of cargo value

US$23.3 B / Cdn$30.2 B
wages paid

US$50.8 B / Cdn$66.1 B
of economic activity

③ ST. LAWRENCE SEAWAY

36.3 M
tons moved

66,594
jobs supported

US$12.8 B / Cdn$16.7 B
of cargo value

US$4.2 B / Cdn$5.4 B
wages paid

US$9.5 B / Cdn$12.3 B
of economic activity

INTRODUCTION

From the earliest days of European settlement, the Great Lakes and St. Lawrence River have been utilized as a means of transportation. Great Lakes cities were founded as trading posts along a vast marine highway that facilitated commerce in an era pre-dating railroads and highways. This relationship to the water has enabled the region to thrive and today, the Great Lakes- St. Lawrence region is the industrial and agricultural heartland of both the United States and Canada.

Over the last 200 years, navigation improvements in both the United States and Canada have enhanced the waterway. The Welland Canal first connected Lake Ontario and Lake Erie in 1829, enabling vessels to bypass Niagara Falls. The Soo Locks have made the St. Marys River navigable, connecting Lake Superior to the lower four Great Lakes and the St. Lawrence Seaway. The St. Lawrence Seaway has tamed the St. Lawrence River, enabling ships to sail from Lake Ontario to the Atlantic Ocean since 1959.

The resulting deep-draft inland navigation system is the longest in the world, extending 3,700 kilometers (2,300 miles) into the North American heartland. This bi-national trade corridor complements the region's rail and highway network and offers customers a cost-effective, safe, reliable, and environmentally smart means of moving raw materials, agricultural commodities, and manufactured products to and from domestic and global markets. Cargoes include iron ore, coal, steel, aluminum, machinery, stone, cement, grain, sugar, fertilizers, road salt, petroleum products and containerized goods. These cargoes become the staples of everyday life – food and other household items; buildings, factories, roads, and bridges; vehicles and planes; and the energy that powers cities and towns.

Three distinct vessel-operator communities serve the waterway. These include U.S. domestic carriers ("U.S. Lakers") transporting cargo between ports on the Great Lakes, Canadian domestic carriers ("Canadian Lakers") operating between ports on the Great Lakes and the St. Lawrence River and Canadian coastal waters, and ocean-going vessel operators ("Salties"), which operate between the region's ports and overseas destinations. These carriers serve more than 110 system ports located in each of the eight Great Lakes states and the provinces of Ontario and Quebec.

In addition to locks, ships and ports, a host of maritime service providers work to ensure the safe, reliable, and efficient transport of cargo. These include stevedores, warehouse employees, freight forwarders, dockworkers, crane operators, vessel agents, dredging contractors, marine pilots, truck drivers and port rail operators, tugboat operators and shipyard workers.

PURPOSE

This report is designed to provide the navigation community, transportation planners, government policy makers and the public with a realistic assessment of the contributions made by commercial maritime shipping in the Great Lakes and St. Lawrence region to the bi-national, national, state and provincial economies.

To accomplish this goal, a bi-national consortium of public and private sector stakeholders retained Martin Associates of Lancaster, Pennsylvania – a global leader in transportation economic analysis and strategic planning.[1] Martin Associates has completed more than 1500 economic impact, strategic planning, financial feasibility and market studies for major ports and waterway systems throughout the United States and Canada, as well as for ports in Europe, Asia and the Caribbean.

ORGANIZATION OF STUDY RESULTS

The study provides an assessment of the economic impacts of maritime shipping from tree perspectives, as described below:

Chapter II – Great Lakes-St. Lawrence Seaway System

Includes impacts of domestic and international cargo that has travelled at some point through the Great Lakes, its connecting rivers, and the St. Lawrence Seaway (ending in Montreal). This chapter only includes the impacts of tonnage at lower St. Lawrence River Quebec ports if destined to or originating from the Great Lakes-St. Lawrence Seaway System. For example, the economic benefits of container movements to and from the Port of Montreal to overseas markets are not included in this chapter, as this trade does not enter or leave the Great Lakes-St. Lawrence Seaway System. However, grain export shipments leaving the Port of Duluth, Minn., destined for overseas markets that are temporarily off-loaded at the Port of Quebec for re-loading onto a larger ocean-going vessel, are included. This perspective is most relevant to American stakeholders in that it excludes Quebec commerce that moves exclusively between Canadian ports on the lower St. Lawrence River. It also excludes commerce between these Canadian lower St. Lawrence River ports and overseas ports.

Chapter III – Great Lakes-St. Lawrence River Waterway

Includes impacts of all domestic and international cargo moving on the Great Lakes, its connecting rivers, the St. Lawrence Seaway and the Lower St. Lawrence River. This analysis captures the fullest extent of the economic benefits of the entire waterway. For example, it includes the domestic movements of commodities like petroleum products between lower St. Lawrence River ports and container movements to and from Quebec ports to overseas markets. This perspective is particularly relevant to Canadian stakeholders in that all Quebec impacts along the St. Lawrence are included in this chapter.

Chapter IV – St. Lawrence Seaway

Includes impacts of domestic and international cargo that has travelled through the St. Lawrence Seaway, a system of canals and locks, which connects the Great Lakes to the lower St. Lawrence River. The St. Lawrence Seaway extends from St. Lambert Lock in Montreal to Lake Erie and is composed of a series of 15 consecutive locks (seven locks in the Montreal-Lake Ontario section and eight locks in the Welland Canal section). This data is particularly relevant to those stakeholders who move cargo through the waterway and to policy makers who manage and fund waterway infrastructure.

① The Great Lakes St. Lawrence Seaway Development Corporation (GLS), the St. Lawrence Seaway Management Corporation (SLSMC), the American Great Lakes Ports Association (AGLPA), the Chamber of Marine Commerce (CMC), the Lake Carriers Association (LCA), and the Shipping Federation of Canada (SFC).

METHODOLOGY

This analysis estimates the combined U.S. and Canadian economic impacts of all marine cargo moving in the bi-national Great Lakes-St. Lawrence region, including domestic cargo moving between U.S. ports; domestic cargo moving between Canadian ports; cross-lake cargo moving between the U.S. and Canada; and international cargo moving between system ports and overseas ports.

Specifically, the study measures the impacts of 2022 cargo movements at 40 U.S. and Canadian ports. The analysis was developed from a comprehensive telephone interview program of more than 800 individual firms with more than 1,100 operations throughout the region. Models were then developed to expand the 40-port impacts to the state-wide and province-wide levels.

The report estimates tonnage volume (and its dollar value) moved for each of the geographic segments detailed in the Organization of Study Results. This is the recorded tonnage transported by vessels.

For the purpose of determining economic impacts, however, the report uses the tonnage "handled" at the Great Lakes-St. Lawrence region's ports. "Handled" refers to both the shipping (exporting) of the cargo from a system port, and to the receipt (importing) of that cargo in a system port. Because economic activity is created every time cargo is handled, for the purposes of this study, cargo moved between ports within the region has been handled twice. By contrast, cargo moved between system ports and overseas ports has been handled once (in the region). For example, one ton of cargo moved to or from Europe is counted as one ton handled by a port, while one ton of cargo moved from Duluth, Minn., to Cleveland, Ohio, is counted as two tons (one ton exported in Duluth and one ton imported in Cleveland).

Impacts are presented at the regional level, country level, state/provincial level, by commodity, by carrier flag, by employment sector and by waterway segment. Throughout the study, all values are expressed in both U.S. and Canadian dollars (using a 2022 average exchange rate of US$1.00 = Cdn$1.3). Cargo volumes are expressed in both metric tons and short tons (1 metric ton = 1.1023 short tons).

CATEGORIES OF IMPACTS

Economic Activity — Total economic activity consists of the direct business revenue received by the businesses supplying the cargo and vessel handling services, plus the re-spending of direct employees' earnings on goods and services in the province/state.

Employment — Employment is measured in terms of full-time equivalent jobs, as defined by 2,080 hours per year per full-time worker. These impacts consist of three levels:

- → **Direct Employment:** jobs directly generated by maritime and port activity. Direct jobs include those of dockworkers, crane operators, ships' crew, steamship agents, freight forwarders and stevedores, as well as workers with railroad and trucking companies moving the cargo handled at system ports. These jobs also include shippers/consignees that have facilities situated close to ports or marine terminals associated with the production site. These jobs would experience dislocation (likely wouldn't exist) if the activity at ports and marine terminals were to be discontinued.
- → **Induced Employment:** jobs supported when individuals spend their wages locally on goods and services such as food, housing, and clothing.
- → **Indirect Employment:** jobs supported due to purchases of goods and services by businesses. These include jobs with office supply firms, maintenance and repair companies, parts, and equipment suppliers, etc.

Personal Income — These impacts are a measure of the employee wages and salaries (excluding benefits) received by individuals directly employed due to port activity and the respending of those earnings on goods and services in the province/state.

Business Revenue — These impacts represent the revenue generated by firms providing services at each port.

Local Purchases — These impacts include the value of goods and services purchased by the firms providing services at each port. Examples are office supplies, communications, utilities, fuel, maintenance and repair, goods/parts, contracted services, insurance, etc.

Taxes — These impacts include payments to federal, state/provincial, and local governments by companies and individuals whose jobs are directly dependent on port activity, as well as induced jobs and indirect jobs generated by the system..

EXHIBIT I-2

INDIVIDUAL PORTS MODELLED

U.S. PORTS (19)

- Ashtabula
- Burns Harbor
- Calcite
- Chicago
- Cleveland
- Conneaut
- Detroit
- Duluth
- Erie
- Green Bay
- Lorain
- Milwaukee
- Monroe
- Muskegon
- Oswego
- Saginaw River
- Superior
- Toledo
- Two Harbors

CANADIAN PORTS (22)

- Baie-Comeau
- Becancour
- Goderich
- Hamilton
- Havre-Saint-Pierre
- Johnstown
- Meldrum Bay
- Montreal
- Nanticoke
- Oshawa
- Port Alfred
- Port-Cartier
- Quebec
- Saguenay
- Sarnia
- Sept-Iles
- Sorel
- Thunder Bay
- Toronto
- Trois-Rivieres
- Valleyfield
- Windsor

RESULTS

CHAPTER II

GREAT LAKES-ST. LAWRENCE SEAWAY SYSTEM IMPACTS

This chapter presents the study results from the perspective of the Great Lakes-St. Lawrence Seaway System, which includes the five Great Lakes, their connecting rivers, and the St. Lawrence Seaway (ending in Montreal). This analysis only includes the impacts of cargo tonnage at lower St. Lawrence River Quebec ports if that cargo was destined to or originating from the Great Lakes-Seaway system.

In 2022, a total of **135.7 million metric tons (149.5 million short tons) of cargo valued at US$26.1 billion (Cdn$33.9 billion)** moved through the Great Lakes- Seaway system. As noted, a majority of the domestic cargo moving on Canadian and U.S. flag vessels remains in the Great Lakes-Seaway system, creating economic impacts at the loading port as well as the port of discharge. With this accounted for, the actual tons handled at the ports on the Great Lakes-Seaway system is **252.5 million metric tons (278.3 million short tons)**. This cargo generated the following economic impacts:

Economic Activity — The marine cargo and vessel activity in the Great Lakes-Seaway system generated a total of **US$36.0 billion (Cdn$46.8 billion)** in economic activity in the United States and Canada.

Employment — Maritime commerce on the Great Lakes-Seaway system supported **241,286 U.S. and Canadian jobs**, including 81,863 direct jobs. As a result of local and regional purchases made by those 81,863 individuals, an additional 84,089 induced jobs were supported in the regional economy. Finally, 75,335 indirect jobs were supported by US$8.3 billion (Cdn$10.8 billion) in regional purchases by businesses supplying services at the marine terminals and ports.

Personal Income — Maritime activity supported **US$17.8 billion (Cdn$23.2 billion) in total personal wage and salary income and local consumption expenditures** in the regional economies of the U.S. and Canada. The 81,863 direct job holders received US$4.8 billion (Cdn$6.2 billion) in wage income.

Local Purchases — Businesses involved in maritime activity in the Great Lakes-Seaway system spent **US$8.3 billion (Cdn$10.8 billion) on purchases** in their respective local economies.

Taxes — A total of **US$6.3 billion (Cdn$8.3 billion)** in federal, state/provincial, and local tax revenue was generated by maritime activity in the Great Lakes-Seaway system.

GREAT LAKES - ST. LAWRENCE SEAWAY SYSTEM

EXHIBIT II-3

GREAT LAKES-ST. LAWRENCE SEAWAY SYSTEM IMPACTS – COUNTRY LEVEL

	United States		Canada		TOTAL	
Jobs						
Direct jobs	50,335		31,528		81,863	
Induced	46,180		37,908		84,089	
Indirect	50,835		24,500		75,335	
Total	**147,350**		**93,936**		**241,286**	
Economic Activity (1,000)	**US $**	**Cdn $**	**US $**	**Cdn $**	**US $**	**Cdn $**
	$26,351,285	$34,256,670	$9,653,885	$12,550,051	$36,005,170	$46,806,721
Personal income (1,000)	**US $**	**Cdn $**	**US $**	**Cdn $**	**US $**	**Cdn $**
Direct	$3,368,765	$4,379,394	$1,440,290	$1,872,377	$4,809,055	$6,251,772
Re-Spending/Local Purchases	$7,349,393	$9,554,210	$1,681,401	$2,185,821	$9,030,793	$11,740,031
Indirect	$2,835,690	$3,686,397	$1,135,127	$1,475,666	$3,970,817	$5,162,062
Total	**$13,553,847**	**$17,620,001**	**$4,256,819**	**$5,533,864**	**$17,810,666**	**$23,153,866**
Business Revenue (1,000)	$19,001,892	$24,702,460	$7,972,484	$10,364,230	$26,974,377	$35,066,690
Local Purchases (1,000)	$5,446,095	$7,079,924	$2,864,961	$3,724,449	$8,311,056	$10,804,373
Total Taxes	**US $**	**Cdn $**	**US $**	**Cdn $**	**US $**	**Cdn $**
State/Province/Local (1,000)	$1,540,246	$2,002,320	$929,492	$1,208,339	$2,469,738	$3,210,659
Federal (1,000)	$2,600,741	$3,380,964	$1,276,756	$1,659,783	$3,877,497	$5,040,746
Total	**$4,140,988**	**$5,383,284**	**$2,206,248**	**$2,868,122**	**$6,347,235**	**$8,251,406**

EXHIBIT II-10

GREAT LAKES-ST. LAWRENCE SEAWAY SYSTEM IMPACTS – BY STATE

	Indiana		Ohio		Michigan	
1,000 Tons Handled- Metric Tons and Short Tons	18,211	20,074	33,281	36,686	53,683	59,175
Jobs						
Direct jobs	22,896		9,376		7,646	
Induced	23,179		8,856		5,802	
Indirect	29,423		13,200		3,609	
Total	**75,498**		**31,432**		**17,057**	
Economic Activity (1,000)	**US $** $15,123,761	**Cdn $** $19,660,890	**US $** $3,737,879	**Cdn $** $4,859,242	**US $** $3,291,234	**Cdn $** $4,278,605
Personal income (1,000)	**US $**	**Cdn $**	**US $**	**Cdn $**	**US $**	**Cdn $**
Direct	$1,733,664	$2,253,764	$597,698	$777,008	$443,324	$576,321
Re-Spending/Local Consumption	$3,798,285	$4,937,771	$1,401,483	$1,821,928	$898,927	$1,168,606
Indirect	$1,601,114	$2,081,448	$783,548	$1,018,612	$185,791	$241,528
Total	**$7,133,063**	**$9,272,982**	**$2,782,730**	**$3,617,548**	**$1,528,042**	**$1,986,454**
Business Revenue (1,000)	$11,325,476	$14,723,119	$2,336,395	$3,037,314	$2,392,307	$3,109,999
Local Purchases (1,000)	$3,055,341	$3,971,943	$1,416,300	$1,841,191	$402,443	$523,176
Total Taxes	**US $**	**Cdn $**	**US $**	**Cdn $**	**US $**	**Cdn $**
State and Local Taxes	$774,365	$1,006,674	$278,273	$361,755	$160,119	$208,155
Federal Taxes	$1,424,367	$1,851,678	$468,232	$608,701	$303,706	$394,818
Total	**$2,198,732**	**$2,858,352**	**$746,505**	**$970,456**	**$463,826**	**$602,973**

EXHIBIT II-10 (CONTINUED)

GREAT LAKES-ST. LAWRENCE SEAWAY SYSTEM IMPACTS – BY STATE

	Minnesota		Illinois		Wisconsin	
1,000 Tons Handled- Metric Tons and Short Tons	20,781	22,907	3,951	4,355	22,932	25,278
Jobs						
Direct jobs	1,588		1,389		2,882	
Induced	1,335		1,474		2,278	
Indirect	1,655		386		1,632	
Total	**4,579**		**3,249**		**6,792**	
Economic Activity (1,000)	**US $** $1,117,817	**Cdn $** $1,453,162	**US $** $475,266	**Cdn $** $617,846	**US $** $1,428,472	**Cdn $** $1,857,014
Personal income (1,000)	**US $**	**Cdn $**	**US $**	**Cdn $**	**US $**	**Cdn $**
Direct	$83,508	$108,561	$83,645	$108,739	$166,434	$216,364
Re-Spending/Local Consumption	$198,090	$257,517	$258,740	$336,362	$323,197	$420,157
Indirect	$92,260	$119,939	$24,212	$31,476	$84,954	$110,440
Total	**$373,859**	**$486,017**	**$366,598**	**$476,577**	**$574,585**	**$746,961**
Business Revenue (1,000)	$919,727	$1,195,645	$216,526	$281,484	$1,105,275	$1,436,857
Local Purchases (1,000)	$193,555	$251,622	$41,492	$53,939	$187,503	$243,754
Total Taxes	**US $**	**Cdn $**	**US $**	**Cdn $**	**US $**	**Cdn $**
State and Local Taxes	$63,264	$82,243	$51,405	$66,827	$80,093	$104,121
Federal Taxes	$88,352	$114,857	$57,852	$75,207	$122,841	$159,694
Total	**$151,615**	**$197,100**	**$109,257**	**$142,034**	**$202,934**	**$263,815**

EXHIBIT II-10 (CONTINUED)

GREAT LAKES-ST. LAWRENCE SEAWAY SYSTEM IMPACTS – BY STATE

	New York		Pennsylvania		TOTAL US	
1,000 Tons Handled- Metric Tons and Short Tons	4,489	4,948	676	745	158,005	174,169
Jobs						
Direct jobs	4,224		334		50,335	
Induced	2,966		290		46,180	
Indirect	700		229		50,835	
Total	**7,891**		**853**		**147,350**	
Economic Activity (1,000)	**US $** $1,057,659	**Cdn,$** $1 374 957	**US $** $119 196	**Cdn,$** $154 955	**US $** $26,351,285	**Cdn $** $34,256,670
Personal income (1,000)	**US $**	**Cdn,$**	**US $**	**Cdn,$**	**US $**	**Cdn $**
Direct	$240,052	$312 068	$20 439	$26 570	$3,368,765	$4,379,394
Re-Spending/Local Consumption	$423,885	$551 050	$46 784	$60 819	$7,349,393	$9,554,210
Indirect	$52,464	$68 204	$11 347	$14 751	$2,835,690	$3,686,397
Total	**$716,401**	**$931 322**	**$78 569**	**$102 140**	**$13,553,847**	**$17,620,001**
Business Revenue (1,000)	$633,775	$823 907	$72 412	$94 136	$19,001,892	$24,702,460
Local Purchases (1,000)	$116,112	$150 945	$33 349	$43 354	$5,446,095	$7,079,924
Total Taxes	**US $**	**Cdn,$**	**US $**	**Cdn,$**	**US $**	**Cdn $**
State and Local Taxes	$123,098	$160 027	$9 630	$12 519	$1,540,246	$2,002,320
Federal Taxes	$121,900	$158 470	$13 491	$17 538	$2,600,741	$3,380,964
Total	**$244,997**	**$318 497**	**$23 121**	**$30 058**	**$4,140,988**	**$5,383,284**

EXHIBIT II-11

GREAT LAKES-ST. LAWRENCE SEAWAY SYSTEM IMPACTS – BY PROVINCE

	Ontario		Quebec		TOTAL	
1,000 Tons Handled- Metric Tons and Short Tons	63,307	69,783	31,136	34,321	94,443	104,105
Jobs						
Direct jobs	22,471		9,057		31,528	
Induced	25,139		12,769		37,908	
Indirect	19,544		4,956		24,500	
Total	**67,154**		**26,782**		**93,936**	
Economic Activity (1,000)	**US $** $7,374,017	**Cdn $** $9,586,222	**US $** $2,279,868	**Cdn $** $2,963,829	**US $** $9,653,885	**Cdn $** $12,550,051
Personal income (1,000)	**US $**	**Cdn $**	**US $**	**Cdn $**	**US $**	**Cdn $**
Direct	$1,024,482	$1,331,827	$415,808	$540,550	$1,440,290	$1,872,377
Re-Spending/Local Consumption	$1,099,270	$1,429,050	$582,131	$756,771	$1,681,401	$2,185,821
Indirect	$915,543	$1,190,206	$219,585	$285,460	$1,135,127	$1,475,666
Total	**$3,039,295**	**$3,951,083**	**$1,217,524**	**$1,582,781**	**$4,256,819**	**$5,533,864**
Business Revenue (1,000)	$6,274,747	$8,157,171	$1,697,737	$2,207,058	$7,972,484	$10,364,230
Local Purchases (1,000)	$2,297,964	$2,987,353	$566,997	$737,096	$2,864,961	$3,724,449
Total Taxes	**US $**	**Cdn $**	**US $**	**Cdn $**	**US $**	**Cdn $**
Province/Local (1,000)	$566,781	$736,816	$362,710	$471,524	$929,492	$1,208,339
Federal (1,000)	$930,223	$930,223	$930,223	$930,223	$930,223	$930,223
Total	**$1,497,004**	**$1,667,038**	**$1,292,933**	**$1,401,746**	**$1,859,714**	**$2,138,562**

EXHIBIT II-12

GREAT LAKES-ST. LAWRENCE SEAWAY SYSTEM IMPACTS BY FLAG OF CARRIAGE – REGIONAL LEVEL

	Canadian Flag		U.S. Flag	
Jobs				
Direct jobs	34,346		38,517	
Induced	37,673		36,370	
Indirect	26,228		41,559	
Total	**98,247**		**116,447**	
Economic Activity (1,000)	**US $** $12,977,956	**Cdn $** $16,871,342	**US $** $20,048,195	**Cdn $** $26,062,653
Personal income (1,000)	**US $**	**Cdn $**	**US $**	**Cdn $**
Direct	$1,716,669	$2,231,669	$2,570,759	$3,341,987
Re-Spending/Local Consumption	$2,612,475	$3,396,217	$5,516,140	$7,170,982
Indirect	$1,301,082	$1,691,407	$2,276,274	$2,959,157
Total	**$5,630,226**	**$7,319,293**	**$10,363,174**	**$13,472,126**
Business Revenue (1,000)	$10,365,481	$13,475,125	$14,532,054	$18,891,671
Local Purchases (1,000)	$3,031,563	$3,941,031	$4,453,746	$5,789,870
Total Taxes	**US $**	**Cdn $**	**US $**	**Cdn $**
Stade/Provincial/Local Taxes	$1,047,441	$1,361,673	$1,164,347	$1,513,651
Federal Taxes	$1,468,145	$1,908,589	$2,019,181	$2,624,936
Total	**$2,515,586**	**$3,270,262**	**$3,183,528**	**$4,138,587**

EXHIBIT II-12 (CONTINUED)

GREAT LAKES-ST. LAWRENCE SEAWAY SYSTEM IMPACTS BY FLAG OF CARRIAGE – REGIONAL LEVEL

	Foreign Flag		TOTAL	
Jobs				
Direct jobs	8,999		81,863	
Induced	10,046		84,089	
Indirect	7,548		75,335	
Total	**26,592**		**241,286**	
Economic Activity (1,000)	**US $** $2,979,020	**Cdn $** $3,872,726	**US $** $36,005,170	**Cdn $** $46,806,721
Personal income (1,000)	**US $**	**Cdn $**	**US $**	**Cdn $**
Direct	$521,627	$678,116	$4,809,055	$6,251,772
Re-Spending/Local Consumption	$902,178	$1,172,832	$9,030,793	$11,740,031
Indirect	$393,461	$511,499	$3,970,817	$5,162,062
Total	**$1,817,266**	**$2,362,446**	**$17,810,666**	**$23,153,866**
Business Revenue (1,000)	$2,076,842	$2,699,894	$26,974,377	$35,066,690
Local Purchases (1,000)	$825,748	$1,073,472	$8,311,056	$10,804,373
Total Taxes	**US $**	**Cdn $**	**US $**	**Cdn $**
Stade/Provincial/Local Taxes	$257,950	$335,335	$2,469,738	$3,210,659
Federal Taxes	$390,171	$507,222	$3,877,497	$5,040,746
Total	**$648,121**	**$842,557**	**$6,347,235**	**$8,251,406**

CHAPTER III

GREAT LAKES-ST. LAWRENCE RIVER WATERWAY IMPACTS

This chapter measures the impacts of maritime shipping on the Great Lakes-St. Lawrence River Waterway. All domestic and international cargo moving on the waterway is included in the analysis, including Great Lakes, St. Lawrence Seaway, and lower St. Lawrence River cargo.

In 2022, a total of **252.1 million metric tons (277.9 million short tons) of cargo valued at $120.9 billion U.S. (Cdn$157.2 billion)** moved through the Great Lakes-St. Lawrence River Waterway. As noted, a majority of the domestic cargo moving on Canadian and U.S. flag vessels remains in the waterway, creating economic impacts at the loading port as well as the port of discharge. With this accounted for, the actual tons handled at the ports on the Great Lakes-St. Lawrence River waterway is **368.9 million metric tons (377.4 million short tons).** This cargo generated the following economic impacts:

Economic Activity — The marine cargo and vessel activity generated a total of **US$50.9 billion (Cdn$66.1 billion)** in economic activity in the United States and Canada.

Employment — Maritime commerce supported **356,858 U.S. and Canadian jobs**, including 113,823 direct jobs. As a result of local and regional purchases made by those 113,823 individuals, an additional 131,359 induced jobs were supported in the regional economy. Finally, 111,676 indirect jobs were supported by US$13.2 billion (Cdn $17.2 billion) in regional purchases by businesses supplying services at the marine terminals and ports.

Personal Income — Maritime activity supported **U.S.$23.3 billion (Cdn$30.2 billion) in total personal wage and salary income and local consumption expenditures** in the regional economies of the U.S. and Canada. The 113,823 direct job holders received US$6.4 billion (Cdn$8.3 billion) in wage income.

Local Purchases — Businesses involved in maritime activity spent **US$13.2 billion (Cdn$17.2 billion) on purchases** in their respective local economies.

Taxes — A total of **US$9.8 billion (Cdn$12.8 billion) in federal, state/ provincial, and local tax revenue** was generated by maritime activity.

EXHIBIT III-3

GREAT LAKES-ST. LAWRENCE RIVER WATERWAY IMPACTS – COUNTRY LEVEL

	United States		Canada		TOTAL	
Jobs						
Direct jobs	50,335		63,488		113,823	
Induced	46,180		85,179		131,359	
Indirect	50,835		60,841		111,676	
Total	**147,350**		**209,508**		**356,858**	
Economic Activity (1,000)	**US $**	**Cdn $**	**US $**	**Cdn $**	**US $**	**Cdn $**
	$26,351,285	$34,256,670	$24,519,709	$31,875,621	$50,870,994	$66,132,292
Personal income (1,000)	**US $**	**Cdn $**	**US $**	**Cdn $**	**US $**	**Cdn $**
Direct	$3,368,765	$4,379,394	$2,997,374	$3,896,586	$6,366,139	$8,275,981
Re-Spending/Local Purchases	$7,349,393	$9,554,210	$3,861,318	$5,019,713	$11,210,710	$14,573,923
Indirect	$2,835,690	$3,686,397	$2,850,304	$3,705,395	$5,685,994	$7,391,792
Total	**$13,553,847**	**$17,620,001**	**$9,708,996**	**$12,621,694**	**$23,262,843**	**$30,241,696**
Business Revenue (1,000)	$19,001,892	$24,702,460	$20,658,391	$26,855,908	$39,660,283	$51,558,368
Local Purchases (1,000)	$5,446,095	$7,079,924	$7,764,202	$10,093,463	$13,210,297	$17,173,387
Total Taxes	**US $**	**Cdn $**	**US $**	**Cdn $**	**US $**	**Cdn $**
State/Province/Local (1,000)	$1,540,246	$2,002,320	$2,673,706	$3,475,818	$4,213,952	$5,478,138
Federal (1,000)	$2,600,741	$3,380,964	$2,991,227	$3,888,596	$5,591,969	$7,269,559
Total	**$4,140,988**	**$5,383,284**	**$5,664,933**	**$7,364,413**	**$9,805,921**	**$12,747,697**

EXHIBIT III-10

GREAT LAKES-ST. LAWRENCE RIVER WATERWAY IMPACTS – BY STATE

	Indiana		Ohio		Michigan	
1,000 Tons Handled- Metric Tons and Short Tons	18,211	20,074	33,281	36,686	53,683	59,175
Jobs						
Direct jobs	22,896		9,376		7,646	
Induced	23,179		8,856		5,802	
Indirect	29,423		13,200		3,609	
Total	**75,498**		**31,432**		**17,057**	
Economic Activity (1,000)	**US $** $15,123,761	**Cdn $** $19,660,890	**US $** $3,737,879	**Cdn $** $4,859,242	**US $** $3,291,234	**Cdn $** $4,278,605
Personal income (1,000)	**US $**	**Cdn $**	**US $**	**Cdn $**	**US $**	**Cdn $**
Direct	$1,733,664	$2,253,764	$597,698	$777,008	$443,324	$576,321
Re-Spending/Local Consumption	$3,798,285	$4,937,771	$1,401,483	$1,821,928	$898,927	$1,168,606
Indirect	$1,601,114	$2,081,448	$783,548	$1,018,612	$185,791	$241,528
Total	**$7,133,063**	**$9,272,982**	**$2,782,730**	**$3,617,548**	**$1,528,042**	**$1,986,454**
Business Revenue (1,000)	$11,325,476	$14,723,119	$2,336,395	$3,037,314	$2,392,307	$3,109,999
Local Purchases (1,000)	$3,055,341	$3,971,943	$1,416,300	$1,841,191	$402,443	$523,176
Total Taxes	**US $**	**Cdn $**	**US $**	**Cdn $**	**US $**	**Cdn $**
State and Local Taxes	$774,365	$1,006,674	$278,273	$361,755	$160,119	$208,155
Federal Taxes	$1,424,367	$1,851,678	$468,232	$608,701	$303,706	$394,818
Total	**$2,198,732**	**$2,858,352**	**$746,505**	**$970,456**	**$463,826**	**$602,973**

EXHIBIT III-10 (CONTINUED)

GREAT LAKES-ST. LAWRENCE RIVER WATERWAY IMPACTS – BY STATE

	Minnesota		Illinois		Wisconsin	
1,000 Tons Handled- Metric Tons and Short Tons	20,781	22,907	3,951	4,355	22,932	25,278
Jobs						
Direct jobs	1,588		1,389		2,882	
Induced	1,335		1,474		2,278	
Indirect	1,655		386		1,632	
Total	**4,579**		**3,249**		**6,792**	
Economic Activity (1,000)	**US $** $1,117,817	**Cdn $** $1,453,162	**US $** $475,266	**Cdn $** $617,846	**US $** $1,428,472	**Cdn $** $1,857,014
Personal income (1,000)	**US $**	**Cdn $**	**US $**	**Cdn $**	**US $**	**Cdn $**
Direct	$83,508	$108,561	$83,645	$108,739	$166,434	$216,364
Re-Spending/Local Consumption	$198,090	$257,517	$258,740	$336,362	$323,197	$420,157
Indirect	$92,260	$119,939	$24,212	$31,476	$84,954	$110,440
Total	**$373,859**	**$486,017**	**$366,598**	**$476,577**	**$574,585**	**$746,961**
Business Revenue (1,000)	$919,727	$1,195,645	$216,526	$281,484	$1,105,275	$1,436,857
Local Purchases (1,000)	$193,555	$251,622	$41,492	$53,939	$187,503	$243,754
Total Taxes	**US $**	**Cdn $**	**US $**	**Cdn $**	**US $**	**Cdn $**
State and Local Taxes	$63,264	$82,243	$51,405	$66,827	$80,093	$104,121
Federal Taxes	$88,352	$114,857	$57,852	$75,207	$122,841	$159,694
Total	**$151,615**	**$197,100**	**$109,257**	**$142,034**	**$202,934**	**$263,815**

EXHIBIT III-10 (CONTINUED)

GREAT LAKES-ST. LAWRENCE RIVER WATERWAY IMPACTS – BY STATE

	New York		Pennsylvania		TOTAL US	
1,000 Tons Handled- Metric Tons and Short Tons	4,489	4,948	676	745	158,005	174,169
Jobs						
Direct jobs	4,224		334		50,335	
Induced	2,966		290		46,180	
Indirect	700		229		50,835	
Total	**7,891**		**853**		**147,350**	
Economic Activity (1,000)	**US $** $1,057,659	**Cdn,$** $1 374 957	**US $** $119 196	**Cdn,$** $154 955	**US $** $26,351,285	**Cdn $** $34,256,670
Personal income (1,000)	**US $**	**Cdn,$**	**US $**	**Cdn,$**	**US $**	**Cdn $**
Direct	$240,052	$312 068	$20 439	$26 570	$3,368,765	$4,379,394
Re-Spending/Local Consumption	$423,885	$551 050	$46 784	$60 819	$7,349,393	$9,554,210
Indirect	$52,464	$68 204	$11 347	$14 751	$2,835,690	$3,686,397
Total	**$716,401**	**$931 322**	**$78 569**	**$102 140**	**$13,553,847**	**$17,620,001**
Business Revenue (1,000)	$633,775	$823 907	$72 412	$94 136	$19,001,892	$24,702,460
Local Purchases (1,000)	$116,112	$150 945	$33 349	$43 354	$5,446,095	$7,079,924
Total Taxes	**US $**	**Cdn,$**	**US $**	**Cdn,$**	**US $**	**Cdn $**
State and Local Taxes	$123,098	$160 027	$9 630	$12 519	$1,540,246	$2,002,320
Federal Taxes	$121,900	$158 470	$13 491	$17 538	$2,600,741	$3,380,964
Total	**$244,997**	**$318 497**	**$23 121**	**$30 058**	**$4,140,988**	**$5,383,284**

EXHIBIT III-11

GREAT LAKES-ST. LAWRENCE RIVER WATERWAY IMPACTS – BY PROVINCE

	Ontario		Quebec		TOTAL	
1,000 Tons Handled- Metric Tons and Short Tons	63,308	69,784	147,564	162,660	210,872	232,444
Jobs						
Direct jobs	22,471		41,018		63,488	
Induced	25,139		60,039		85,179	
Indirect	19,544		41,297		60,841	
Total	**67,154**		**142,354**		**209,508**	
Economic Activity (1,000)	**US $**	**Cdn $**	**US $**	**Cdn $**	**US $**	**Cdn $**
	$7,374,017	$9,586,222	$17,145,692	$22,289,399	$24,519,709	$31,875,621
Personal income (1,000)	**US $**	**Cdn $**	**US $**	**Cdn $**	**US $**	**Cdn $**
Direct	$1,024,482	$1,331,827	$1,972,892	$2,564,759	$2,997,374	$3,896,586
Re-Spending/Local Consumption	$1,099,270	$1,429,050	$2,762,048	$3,590,663	$3,861,318	$5,019,713
Indirect	$915,543	$1,190,206	$1,934,761	$2,515,189	$2,850,304	$3,705,395
Total	**$3,039,295**	**$3,951,083**	**$6,669,701**	**$8,670,611**	**$9,708,996**	**$12,621,694**
Business Revenue (1,000)	$6,274,747	$8,157,171	$14,383,644	$18,698,737	$20,658,391	$26,855,908
Local Purchases (1,000)	$2,297,964	$2,987,353	$5,466,238	$7,106,110	$7,764,202	$10,093,463
Total Taxes	**US $**	**Cdn $**	**US $**	**Cdn $**	**US $**	**Cdn $**
Province/Local (1,000)	$566,781	$736,816	$2,106,925	$2,739,002	$2,673,706	$3,475,818
Federal (1,000)	$930,223	$930,223	$930,223	$930,223	$930,223	$930,223
Total	**$1,497,004**	**$1,667,038**	**$3,037,147**	**$3,669,225**	**$3,603,929**	**$4,406,040**

EXHIBIT III-12

GREAT LAKES-ST. LAWRENCE RIVER WATERWAY IMPACTS BY FLAG OF CARRIAGE – REGIONAL LEVEL

	Canadian Flag		U.S. Flag	
Jobs				
Direct jobs	38,831		38,517	
Induced	43,588		36,370	
Indirect	28,758		41,559	
Total	**111,176**		**116,447**	
Economic Activity (1,000)	**US $** $14,215,475	**Cdn $** $18,480,118	**US $** $20,048,195	**Cdn $** $26,062,653
Personal income (1,000)	**US $**	**Cdn $**	**US $**	**Cdn $**
Direct	$1,915,045	$2,489,559	$2,570,759	$3,341,987
Re-Spending/Local Consumption	$2,878,479	$3,742,022	$5,516,140	$7,170,982
Indirect	$1,415,034	$1,839,544	$2,276,274	$2,959,157
Total	**$6,208,558**	**$8,071,125**	**$10,363,174**	**$13,472,126**
Business Revenue (1,000)	$11,336,997	$14,738,096	$14,532,054	$18,891,671
Local Purchases (1,000)	$3,306,842	$4,298,894	$4,453,746	$5,789,870
Total Taxes	**US $**	**Cdn $**	**US $**	**Cdn $**
Stade/Provincial/Local Taxes	$1,212,175	$1,575,827	$1,164,347	$1,513,651
Federal Taxes	$1,638,033	$2,129,443	$2,019,181	$2,624,936
Total	**$2,850,208**	**$3,705,270**	**$3,183,528**	**$4,138,587**

EXHIBIT III-12 (CONTINUED)

GREAT LAKES-ST. LAWRENCE RIVER WATERWAY IMPACTS BY FLAG OF CARRIAGE – REGIONAL LEVEL

	Foreign Flag		TOTAL	
Jobs				
Direct jobs	36,475		113,823	
Induced	51,401		131,359	
Indirect	41,359		111,676	
Total	**129,235**		**356,858**	
Economic Activity (1,000)	**US $** $16,607,323	**Cdn $** $21,589,520	**US $** $50,870,994	**Cdn $** $66,132,292
Personal income (1,000)	**US $**	**Cdn $**	**US $**	**Cdn $**
Direct	$1,880,334	$2,444,435	$6,366,139	$8,275,981
Re-Spending/Local Consumption	$2,816,091	$3,660,919	$11,210,710	$14,573,923
Indirect	$1,994,686	$2,593,091	$5,685,994	$7,391,792
Total	**$6,691,111**	**$8,698,445**	**$23,262,843**	**$30,241,696**
Business Revenue (1,000)	$13,791,232	$17,928,602	$39,660,283	$51,558,368
Local Purchases (1,000)	$5,449,710	$7,084,623	$13,210,297	$17,173,387
Total Taxes	**US $**	**Cdn $**	**US $**	**Cdn $**
Stade/Provincial/Local Taxes	$1,837,431	$2,388,660	$4,213,952	$5,478,138
Federal Taxes	$1,934,754	$2,515,180	$5,591,969	$7,269,559
Total	**$3,772,185**	**$4,903,840**	**$9,805,921**	**$12,747,697**

CHAPTER IV

ST. LAWRENCE SEAWAY IMPACTS

This chapter presents the economic impacts of cargo that specifically transits the St. Lawrence Seaway. The Seaway extends from Montreal to Lake Erie and is composed of a series of 15 consecutive locks that connect the Great Lakes to the lower St. Lawrence River and the Atlantic Ocean. The Welland Canal section consists of eight Canadian locks that enable ships to pass between Lakes Erie and Ontario, bypassing the Niagara Falls. The Montreal-Lake Ontario (MLO) section of the Seaway consists of seven locks – five located in Canada and two in the United States. These locks enable ships to pass between Lake Ontario and the lower St. Lawrence River. This chapter describes the economic impacts of all domestic and international traffic moving through the lock system. The tonnage data base used in this section is from the St, Lawrence Seaway Management Corporation.

During 2022, about **36.3 million metric tons (40.0 million short tons)** of cargo valued at US$12.8 billion (Cdn$16.7 billion) passed through the St. Lawrence Seaway's infrastructure. A total of **48.2 million metric tons (53.2 million short tons)** of cargo transiting the St. Lawrence Seaway was handled at the region's ports generating the following economic impacts:

Economic Activity – Marine cargo and vessel activity generated a total of **US$9.5 billion (Cdn$12.3 billion)** economic activity in the United States and Canada.

Employment – Maritime commerce supported **66,594 U.S. and Canadian jobs,** including 22,755 direct jobs. As a result of local and regional purchases made by those 22,755 individuals, an additional 24,906 induced jobs were supported in the regional economy. Finally, 18,932 indirect jobs were supported by US$2.1 billion (Cdn$2.8 billion) in regional purchases by businesses supplying services at the marine terminals and ports.

Personal Income – Maritime commerce supported **US$4.2 billion (Cdn$5.4 billion) in total personal wages and local consumption expenditures.** The 22,755 direct job holders received U.S.$1.2 billion (Cdn$1.6 billion) in wage income.

Local Purchases – Businesses involved in maritime activity on the St. Lawrence Seaway spent **US$2.1 billion (Cdn$2.8 billion) on purchases** in their respective local economies.

Taxes – St. Lawrence Seaway commercial maritime activity generated **US$ 1.7 billion (Cdn$2.2 billion) in local, state/provincial, and federal tax revenues.**

EXHIBIT IV-3

ST. LAWRENCE SEAWAY IMPACTS – COUNTRY LEVEL

	United States		Canada		TOTAL	
Jobs						
Direct jobs	8,164		14,591		22,755	
Induced	7,513		17,393		24,906	
Indirect	8,598		10,335		18,932	
Total	**24,275**		**42,319**		**66,594**	
Economic Activity (1,000)	**US $**	**Cdn $**	**US $**	**Cdn $**	**US $**	**Cdn $**
	$4,907,475	$6,379,717	$4,578,798	$5,952,437	$9,486,273	$12,332,154
Personal income (1,000)	**US $**	**Cdn $**	**US $**	**Cdn $**	**US $**	**Cdn $**
Direct	$549,173	$713,924	$673,661	$875,759	$1,222,833	$1,589,683
Re-Spending/Local Purchases	$1,193,518	$1,551,573	$770,922	$1,002,198	$1,964,439	$2,553,771
Indirect	$490,158	$637,206	$479,833	$623,783	$969,991	$1,260,989
Total	**$2,232,849**	**$2,902,704**	**$1,924,415**	**$2,501,740**	**$4,157,264**	**$5,404,443**
Business Revenue (1,000)	$3,713,957	$4,828,144	$3,807,876	$4,950,239	$7,521,833	$9,778,383
Local Purchases (1,000)	$928,881	$1,207,546	$1,202,238	$1,562,909	$2,131,119	$2,770,455
Total Taxes	**US $**	**Cdn $**	**US $**	**Cdn $**	**US $**	**Cdn $**
State/Province/Local (1,000)	$270,099	$351,128	$410,097	$533,127	$680,196	$884,255
Federal (1,000)	$452,955	$588,842	$583,712	$758,825	$1,036,667	$1,347,667
Total	**$723,054**	**$939,970**	**$993,809**	**$1,291,952**	**$1,716,863**	**$2,231,921**

EXHIBIT IV-10

ST. LAWRENCE SEAWAY IMPACTS – BY STATE

	Indiana		Ohio		Michigan	
1,000 Tons Handled- Metric Tons and Short Tons	656	723	6,294	6,937	2,081	2,294
Jobs						
Direct jobs	3,402		2,068		431	
Induced	3,411		1,988		340	
Indirect	4,371		3,071		253	
Total	**11,184**		**7,127**		**1,024**	
Economic Activity (1,000)	**US $** $3,092,159	**Cdn $** $4,019,806	**US $** $774,625	**Cdn $** $1,007,013	**US $** $117,018	**Cdn $** $152,123
Personal income (1,000)	**US $**	**Cdn $**	**US $**	**Cdn $**	**US $**	**Cdn $**
Direct	$254,461	$330,800	$134,848	$175,303	$26,405	$34,327
Re-Spending/Local Consumption	$557,499	$724,749	$316,192	$411,049	$53,542	$69,605
Indirect	$237,880	$309,244	$183,051	$237,967	$12,724	$16,542
Total	**$1,049,840**	**$1,364,792**	**$634,091**	**$824,319**	**$92,672**	**$120,473**
Business Revenue (1,000)	$2,534,660	$3,295,058	$458,433	$595,964	$63,476	$82,519
Local Purchases (1,000)	$453,936	$590,117	$325,229	$422,798	$28,759	$37,386
Total Taxes	**US $**	**Cdn $**	**US $**	**Cdn $**	**US $**	**Cdn $**
State and Local Taxes	$122,475	$159,217	$63,409	$82,432	$8,731	$11,351
Federal Taxes	$246,084	$319,910	$103,588	$134,665	$14,991	$19,489
Total	**$368,559**	**$479,127**	**$166,997**	**$217,097**	**$23,723**	**$30,840**

EXHIBIT IV-10 (CONTINUED)

ST. LAWRENCE SEAWAY IMPACTS – BY STATE

	Minnesota		Illinois		Wisconsin	
1,000 Tons Handled- Metric Tons and Short Tons	2,389	2,633	337	371	2,163	2,384
Jobs						
Direct jobs	289		230		275	
Induced	253		238		217	
Indirect	351		64		148	
Total	**893**		**532**		**640**	
Economic Activity (1,000)	**US $** $140,389	**Cdn $** $182,505	**US $** $71,102	**Cdn $** $92,432	**US $** $137,220	**Cdn $** $178,386
Personal income (1,000)	**US $**	**Cdn $**	**US $**	**Cdn $**	**US $**	**Cdn $**
Direct	$16,015	$20,819	$13,445	$17,478	$15,851	$20,607
Re-Spending/Local Consumption	$37,989	$49,385	$41,588	$54,064	$30,781	$40,016
Indirect	$19,521	$25,377	$4,011	$5,214	$7,687	$9,993
Total	**$73,524**	**$95,581**	**$59,043**	**$76,756**	**$54,319**	**$70,615**
Business Revenue (1,000)	$102,400	$133,120	$29,514	$38,368	$106,439	$138,370
Local Purchases (1,000)	$40,851	$53,106	$6,873	$8,935	$17,053	$22,169
Total Taxes	**US $**	**Cdn $**	**US $**	**Cdn $**	**US $**	**Cdn $**
State and Local Taxes	$10,903	$14,175	$8,177	$10,631	$7,603	$9,883
Federal Taxes	$14,080	$18,303	$9,092	$11,820	$11,695	$15,203
Total	**$24,983**	**$32,478**	**$17,270**	**$22,451**	**$19,297**	**$25,087**

EXHIBIT IV-10 (CONTINUED)

ST. LAWRENCE SEAWAY IMPACTS – BY STATE

	New York		Pennsylvania		TOTAL US	
1,000 Tons Handled- Metric Tons and Short Tons	395	436	9	10	14,323	
Jobs						
Direct jobs	1,460		9		8,164	
Induced	1,059		8		7,513	
Indirect	334		6		8,598	
Total	**2,852**		**23**		**24,275**	
Economic Activity (1,000)	**US $**	**Cdn,$**	**US $**	**Cdn,$**	**US $**	**Cdn $**
	$572,691	$744,498	$2,272	$2,953	$4,907,475	$6,379,717
Personal income (1,000)	**US $**	**Cdn,$**	**US $**	**Cdn,$**	**US $**	**Cdn $**
Direct	$87,620	$113,906	$527	$686	$549,173	$713,924
Re-Spending/Local Consumption	$154,720	$201,135	$1,207	$1,569	$1,193,518	$1,551,573
Indirect	$24,981	$32,475	$304	$395	$490,158	$637,206
Total	**$267,321**	**$347,517**	**$2,039**	**$2,650**	**$2,232,849**	**$2,902,704**
Business Revenue (1,000)	$417,971	$543,362	$1,064	$1,384	$3,713,957	$4,828,144
Local Purchases (1,000)	$55,287	$71,873	$893	$1,161	$928,881	$1,207,546
Total Taxes	**US $**	**Cdn,$**	**US $**	**Cdn,$**	**US $**	**Cdn $**
State and Local Taxes	$48,565	$63,134	$235	$306	$270,099	$351,128
Federal Taxes	$53,108	$69,041	$316	$411	$452,955	$588,842
Total	**$101,673**	**$132,175**	**$551**	**$716**	**$723,054**	**$939,970**

EXHIBIT IV-11

ST. LAWRENCE SEAWAY IMPACTS – BY PROVINCE

	Ontario		Quebec		TOTAL	
1,000 Tons Handled- Metric Tons and Short Tons	21,676	23,893	12,192	13,439	33,868	37,332
Jobs						
Direct jobs	11,551		3,040		14,591	
Induced	12,923		4,470		17,393	
Indirect	8,527		1,807		10,335	
Total	**33,001**		**9,318**		**42,319**	
Economic Activity (1,000)	**US $** $3,783,169	**Cdn $** $4,918,120	**US $** $795,629	**Cdn $** $1,034,318	**US $** $4,578,798	**Cdn $** $5,952,437
Personal income (1,000)	**US $**	**Cdn $**	**US $**	**Cdn $**	**US $**	**Cdn $**
Direct	$526,616	$684,601	$147,045	$191,158	$673,661	$875,759
Re-Spending/Local Consumption	$565,059	$734,577	$205,862	$267,621	$770,922	$1,002,198
Indirect	$398,862	$518,520	$80,971	$105,263	$479,833	$623,783
Total	**$1,490,537**	**$1,937,698**	**$433,878**	**$564,042**	**$1,924,415**	**$2,501,740**
Business Revenue (1,000)	$3,218,110	$4,183,543	$589,766	$766,696	$3,807,876	$4,950,239
Local Purchases (1,000)	$1,006,435	$1,308,366	$195,803	$254,543	$1,202,238	$1,562,909
Total Taxes	**US $**	**Cdn $**	**US $**	**Cdn $**	**US $**	**Cdn $**
Province/Local (1,000)	$281,201	$365,562	$128,896	$167,565	$410,097	$533,127
Federal (1,000)	$460,708	$460,708	$460,708	$460,708	$460,708	$460,708
Total	**$741,910**	**$826,270**	**$589,605**	**$628,273**	**$870,806**	**$993,835**

EXHIBIT IV-12

ST. LAWRENCE SEAWAY IMPACTS BY FLAG OF CARRIAGE – REGIONAL LEVEL

	Canadian Flag		U.S. Flag	
Jobs				
Direct jobs	13,896		26	
Induced	14,955		32	
Indirect	11,179		14	
Total	**40,029**		**72**	
Economic Activity (1,000)	**US $** $6,519,209	**Cdn $** $8,474,972	**US $** $10,089	**Cdn $** $13,115
Personal income (1,000)	**US $**	**Cdn $**	**US $**	**Cdn $**
Direct	$703,507	$914,559	$1,259	$1,637
Re-Spending/Local Consumption	$1,049,696	$1,364,604	$2,102	$2,733
Indirect	$568,864	$739,523	$695	$904
Total	**$2,322,066**	**$3,018,686**	**$4,057**	**$5,274**
Business Revenue (1,000)	$5,469,513	$7,110,367	$7,986	$10,382
Local Purchases (1,000)	$1,275,292	$1,657,880	$1,613	$2,097
Total Taxes (1,000)	**US $**	**Cdn $**	**US $**	**Cdn $**
Stade/Provincial/Local Taxes	$416,175	$541,027	$950	$1,235
Federal Taxes	$646,118	$839,953	$1,074	$1,396
Total	**$1,062,293**	**$1,380,980**	**$2,024**	**$2,631**

EXHIBIT IV-12 (CONTINUED)

ST. LAWRENCE SEAWAY IMPACTS BY FLAG OF CARRIAGE – REGIONAL LEVEL

	Foreign Flag		TOTAL	
Jobs				
Direct jobs	8,833		22,755	
Induced	9,920		24,906	
Indirect	7,739		18,932	
Total	**26,492**		**66,594**	
Economic Activity (1,000)	**US $** $2,956,975	**Cdn $** $3,844,067	**US $** $9,486,273	**Cdn $** $12,332,154
Personal income (1,000)	**US $**	**Cdn $**	**US $**	**Cdn $**
Direct	$518,068	$673,488	$1,222,833	$1,589,683
Re-Spending/Local Consumption	$912,641	$1,186,434	$1,964,439	$2,553,771
Indirect	$400,432	$520,561	$969,991	$1,260,989
Total	**$1,831,141**	**$2,380,483**	**$4,157,264**	**$5,404,443**
Business Revenue (1,000)	$2,044,334	$2,657,634	$7,521,833	$9,778,383
Local Purchases (1,000)	$854,214	$1,110,478	$2,131,119	$2,770,455
Total Taxes	**US $**	**Cdn $**	**US $**	**Cdn $**
Stade/Provincial/Local Taxes	$263,071	$341,993	$680,196	$884,255
Federal Taxes	$389,475	$506,317	$1,036,667	$1,347,667
Total	**$652,546**	**$848,310**	**$1,716,863**	**$2,231,921**

Note: The impacts generated by foreign flag vessels transiting the St. Lawrence Seaway differ slightly from the impacts of foreign flag vessels estimated for the Great Lakes-St. Lawrence Seaway System in total due to the use of multiple tonnage data bases from the LCA, CMC and individual ports and terminal operators to estimate the foreign flag impacts at the System and Waterway levels, while tonnage data by laker vs. foreign flag vessels supplied by the St. Lawrence Seaway Management Corp. is used to estimate the impacts of the St. Lawrence Seaway. Overall, the use of the various data bases results in a less than 1 percent difference in impacts generated by foreign flag vessels for the Great Lakes-St. Lawrence Seaway System vs. the impacts of foreign flag vessels for St. Lawrence Seaway segment.

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