

THE ECONOMIC IMPACTS OF GREAT LAKES/ SAINT LAWRENCE SEAWAY SYSTEM 2022



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July 28, 2023

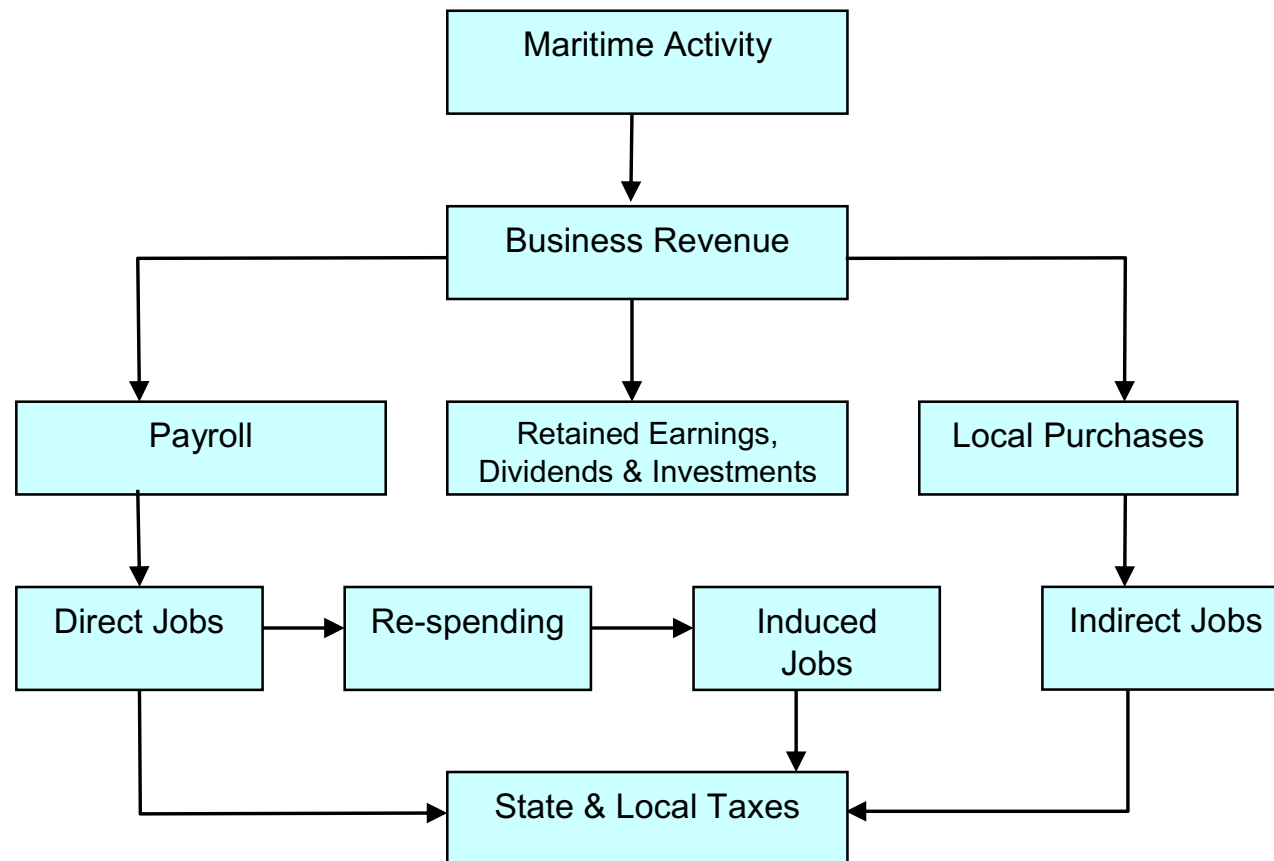
Study Purpose



Study Definition

- **Economic impacts of each segment estimated for 2022**
 - System Level
 - Bi-National
 - State/Province
- **Impacts estimated by:**
 - Total Operations (Domestic and International)
 - By Flag
 - Impacts by Saint Lawrence Seaway
 - Special analysis of Quebec port operations
- **Tonnage data provided by:**
 - Canadian Flag tonnage provided by the Chamber of Marine Commerce by commodity and port
 - International tonnage provided by Saint Lawrence Management Corp by commodity and port
 - U.S. Flag tonnage provided by the Lake Carriers Association by commodity and port
 - Port Authorities
 - Private Terminal Operators

Flow of Economic Impacts



Impact Methodology

- **Over 800 firms, interviewed to develop direct impacts:**
 - Jobs
 - Income
 - Revenue
 - Local purchases
 - Terminal operational specifics
 - Terminal operations by commodity
 - Modal splits
 - Hinterland distribution patterns
 - Rail and truck rates
 - Laker, tug and barge models

Impact Methodology

- **Induced Models**

- US Induced Models

- Developed at the state level

- Consumer Expenditure Survey - Purchases by direct employees
 - Bureau of Economic Analysis, RIMS II , Personal income multipliers
 - State-Wide U.S. Census data - jobs to sales ratios

- Canadian Induced Models

- Developed at the provincial levels

- Expenditures by Province, Statistics Canada
 - Provincial Input-Output Models from Statistics Canada Industry Accounts Division - personal income multipliers
 - Provincial Input–Output Models used to develop jobs to sales ratios

Impact Methodology

- **Indirect Models**

- Purchases developed from the interviews
 - Communications
 - Goods and services
 - Utilities
 - Maintenance and repair
 - Transportation
 - Office Supplies
 - Fuel
 - Insurance
 - Business contract services
- Purchases combined with jobs and income coefficients for relevant supplying industries
- Converted to impacts using US Bureau of Economic Analysis Rims II and Statistics Canada, Provincial Input-Output Models

- **Taxes**

- US taxes - Tax Foundation and US Census State and Local Government Finances, by state and federal level
- Canadian Taxes - Revenue Canada, by province and federal level

Impact Methodology - Commodities

- **Commodity specific**

- Containers
- General cargo
- Steel products
- Iron ore
- Grain
- Stone/aggregates
- Cement
- Salt
- Other dry bulk
- Other liquid bulk
- Coal
- Petroleum products

Impact Methodology - Categories

- **Surface Transportation**
 - Rail
 - Truck
- **Maritime Services**
 - Terminal operators
 - Dockworkers/ILA
 - Tug Assists
 - Pilots
 - Agents
 - Freight Forwarders
 - Marine construction/shipbuilding and repair
 - Miscellaneous maritime services - surveyors, chandlers
 - Government
 - Ferries
- **Port Authority**
- **Dependent shippers/consignees (port tenants)**

Impact Methodology

- 40 port specific port models

US Ports (19)	Canadian Ports (21)
Ashtabula	Baie Comeau
Burns Harbor	Becancour
Calcite	Goderich
Chicago	Hamilton
Cleveland	Havre-Sainte-Pierre
Conneaut	Johnstown
Detroit	Meldrum Bay
Duluth	Montreal/Contrecoeur
Erie	Nanticoke
Green Bay	Oshawa
Lorain	Port Alfred
Milwaukee	Port Cartier
Monroe	Quebec/Levis
Muskegon	Sarnia
Oswego	Sept Iles/Pointe-Noire
Saginaw	Sorel
Superior	Thunder Bay
Toledo	Toronto
Two Harbors	Trois Rivières
	Valleyfield
	Windsor

- Other state and provincial models developed to capture balance of cargo tonnage

Major Macro Changes Since 2017

- Income multipliers in both countries have increased, reflecting increased re-spending and less savings
- Jobs to sales ratios for indirect jobs measurement from Statistics Canada and US Bureau of Economic Analysis have declined – less jobs per dollar spending
- US Federal tax impacts declined reflecting reduction in corporate and individual tax burdens
- Iron ore and coal shipments have declined
- Value per ton of cargo has increased significantly since 2017
- Inflation
- COVID / Supply Chains
- Tariffs

Tonnage Great Lakes/St. Lawrence Seaway System

Commodity	Tonnage Moved (Millions Metric Tons)	Value Millions of US\$	Value Millions of Cdn\$
Steel	3.2	\$4,288.8	\$5,575.39
General Cargo	1.1	\$2,624.4	\$3,411.69
Iron Ore/Bulk	39.8	\$3,528.1	\$4,586.56
Grain	16.5	\$6,233.1	\$8,103.00
Stone/Aggregate	31.7	\$833.8	\$1,083.98
Cement	6.4	\$600.5	\$780.59
Salt	9.7	\$335.1	\$435.57
Other Dry Bulk	5.4	\$598.6	\$778.23
Liquid Bulk	10.2	\$6,074.9	\$7,897.36
Coal	<u>11.7</u>	\$938.1	<u>\$1,219.55</u>
Total	135.7	\$26,055.3	\$33,871.9

Impacts Supported by 135.7 Million Tons

241,286 jobs are supported by marine activity on GL/SLS System

- 81,863 direct jobs
- 84,089 induced jobs
- 75,335 indirect jobs

\$36.0 Billion of total economic value supported in the region

- \$27.0 billion of direct business revenue
- \$9.0 billion of re-spending of direct income and local consumption

\$17.8 billion total personal income/local consumption

- \$4.8 billion: direct personal income, average salary = **\$58,745**
- \$9.0 billion: re-spending/local consumption
- \$4.0 billion: indirect income

\$6.4 billion federal, state and local taxes

- \$2.5 billion: state/provincial and local level
- \$3.9 billion: federal

Great Lakes – Saint Lawrence Seaway System

Impacts

	United States		Canada		Total	
JOBS						
Direct Jobs	50,335		31,528		81,863	
Induced	46,180		37,908		84,089	
Indirect	<u>50,835</u>		<u>24,500</u>		<u>75,335</u>	
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	<u>\$2,835,690</u>	<u>\$3,686,397</u>	<u>\$1,135,127</u>	<u>\$1,475,666</u>	<u>\$3,970,817</u>	<u>\$5,162,062</u>
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						
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)	<u>\$2,600,741</u>	<u>\$3,380,964</u>	<u>\$1,276,756</u>	<u>\$1,659,783</u>	<u>\$3,877,497</u>	<u>\$5,040,746</u>
Total	\$4,140,988	\$5,383,284	\$2,206,248	\$2,868,122	\$6,347,235	\$8,251,406

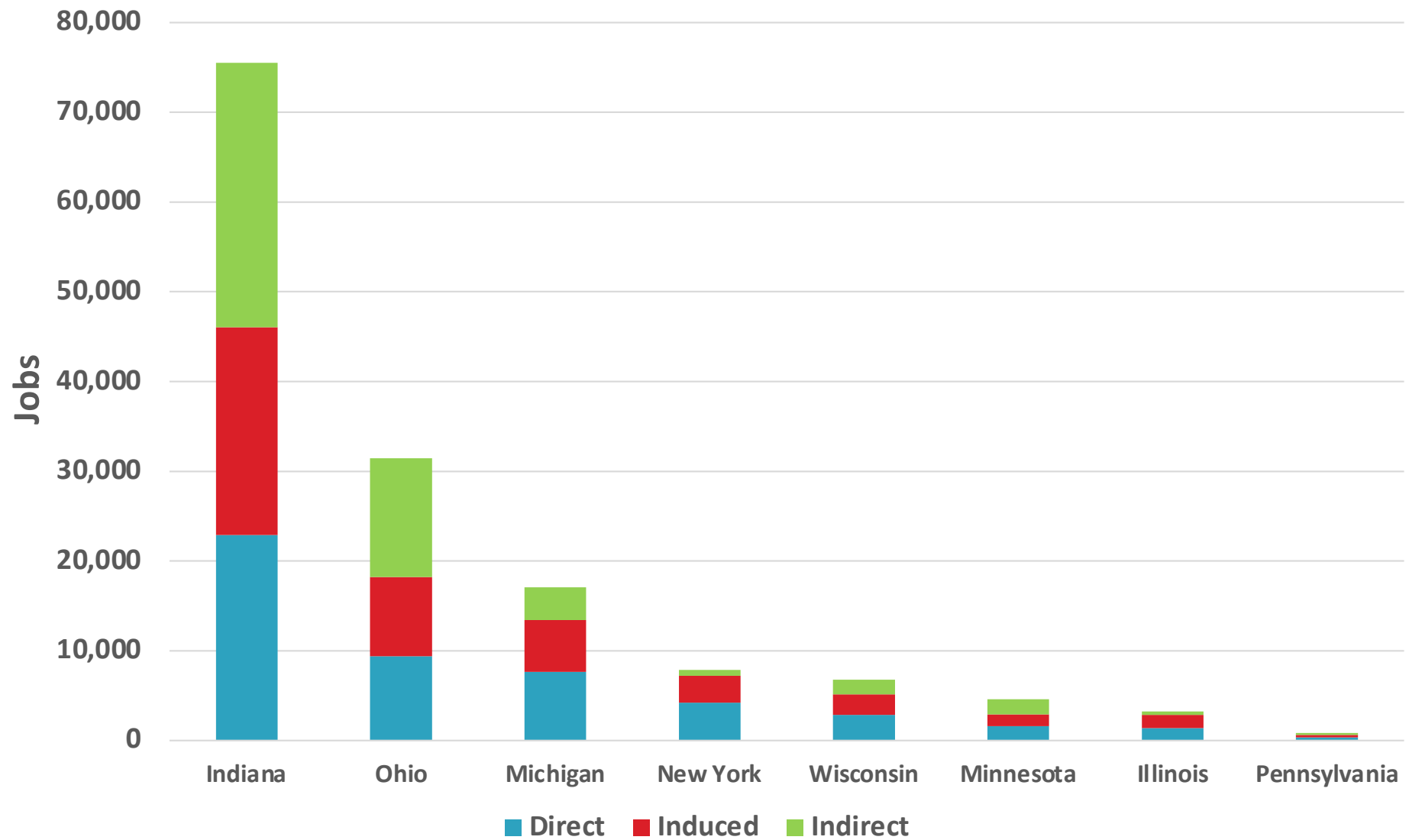
Great Lakes – Saint Lawrence Seaway System Impacts

	1,000 Metric Tons	Total Direct Jobs
Containers	97	30
Steel	4,118	14,970
General Cargo	1,644	1,627
Iron Ore	79,570	22,905
Grain	24,224	3,798
Stone/Aggregate	61,541	7,038
Cement	12,330	2,905
Salt	17,512	4,192
Other Dry Bulk	9,241	3,862
Liquid Bulk	18,717	6,330
Coal	23,453	2,219
Not Allocated	<u>NA</u>	<u>11,986</u>
Total	252,448	81,863

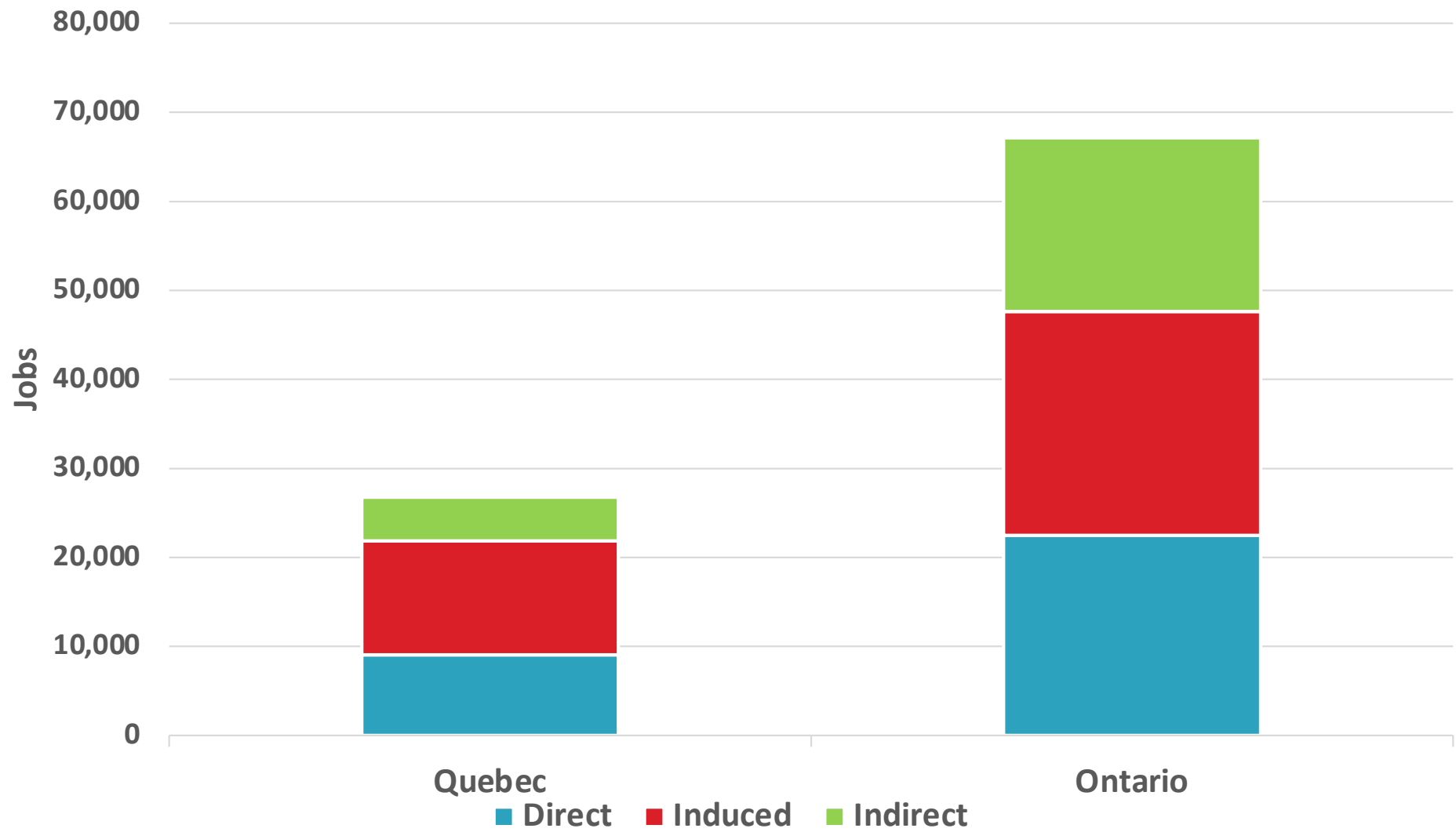
Great Lakes – Saint Lawrence Seaway System Impacts

DIRECT JOBS	
SURFACE TRANSPORTATION	
RAIL	2,101
TRUCK	15,133
MARITIME SERVICE	
TERMINAL EMPLOYEES	9,541
DOCKWORKERS	1,328
TUG ASSISTS	789
PILOTS	139
AGENTS	227
MARITIME SERVICES	1,298
FORWARDERS	2,643
GOVERNMENT	2,223
MARINE EQUIPMENT/SHIP REPAIR	5,508
LAKER/BARGE	5,839
DEPENDENT SHIPPERS/CONSIGNEES	34,256
PORT AUTHORITY	<u>838</u>
TOTAL	81,863

Distribution of 147,350 Direct, Induced and Indirect Jobs by State

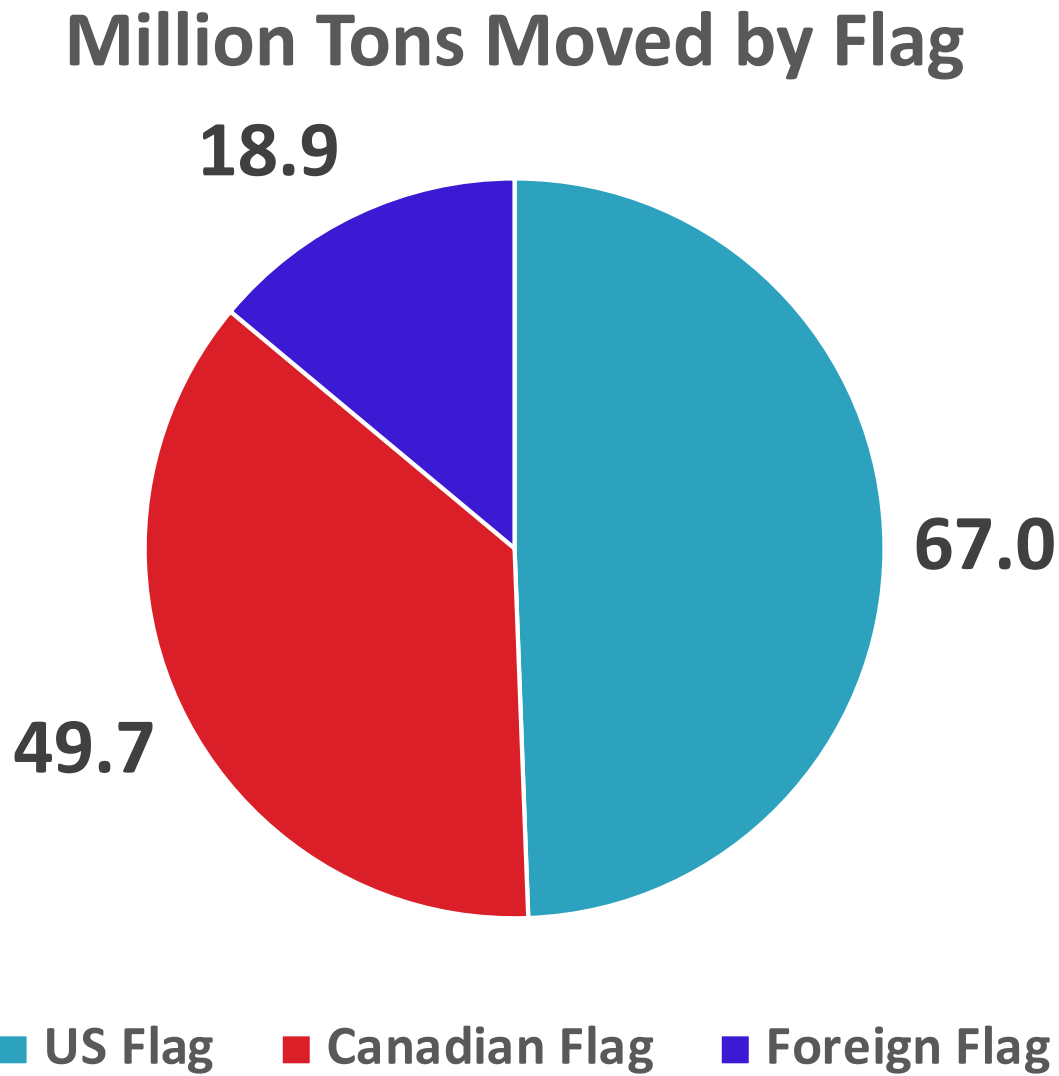


Distribution of 93,936 Direct, Induced and Indirect Jobs By Province



IMPACTS BY FLAG

Tons by Flag on the Great Lakes/St. Lawrence Seaway System



Great Lakes – Saint Lawrence Seaway System Impacts

	Canadian Flag		U.S. Flag		Foreign Flag		Total	
JOBS								
Direct Jobs	34,346		38,517		8,999		81,863	
Induced	37,673		36,370		10,046		84,089	
Indirect	<u>26,228</u>		<u>41,559</u>		<u>7,548</u>		<u>75,335</u>	
Total	98,247		116,447		26,592		241,286	
ECONOMIC ACTIVITY (1,000)	US \$	Cdn \$	US \$	Cdn \$	US \$	CDN \$	US \$	Cdn \$
	\$12,977,956	\$16,871,342	\$20,048,195	\$26,062,653	\$2,979,020	\$3,872,726	\$36,005,170	\$46,806,721
PERSONAL INCOME (1,000)	US \$	Cdn \$	US \$	Cdn \$	US \$	CDN \$	US \$	Cdn \$
Direct	\$1,716,669	\$2,231,669	\$2,570,759	\$3,341,987	\$521,627	\$678,116	\$4,809,055	\$6,251,772
Re-Spending/Local Consumption	\$2,612,475	\$3,396,217	\$5,516,140	\$7,170,982	\$902,178	\$1,172,832	\$9,030,793	\$11,740,031
Indirect	<u>\$1,301,082</u>	<u>\$1,691,407</u>	<u>\$2,276,274</u>	<u>\$2,959,157</u>	<u>\$393,461</u>	<u>\$511,499</u>	<u>\$3,970,817</u>	<u>\$5,162,062</u>
Total	\$5,630,226	\$7,319,293	\$10,363,174	\$13,472,126	\$1,817,266	\$2,362,446	\$17,810,666	\$23,153,866
BUSINESS REVENUE (1,000)	\$10,365,481	\$13,475,125	\$14,532,054	\$18,891,671	\$2,076,842	\$2,699,894	\$26,974,377	\$35,066,690
LOCAL PURCHASES (1,000)	\$3,031,563	\$3,941,031	\$4,453,746	\$5,789,870	\$825,748	\$1,073,472	\$8,311,056	\$10,804,373
TOTAL TAXES (1,000)								
State/Provincial/Local Taxes	\$1,047,441	\$1,361,673	\$1,164,347	\$1,513,651	\$257,950	\$335,335	\$2,469,738	\$3,210,659
Federal Taxes	<u>\$1,468,145</u>	<u>\$1,908,589</u>	<u>\$2,019,181</u>	<u>\$2,624,936</u>	<u>\$390,171</u>	<u>\$507,222</u>	<u>\$3,877,497</u>	<u>\$5,040,746</u>
Total	\$2,515,586	\$3,270,262	\$3,183,528	\$4,138,587	\$648,121	\$842,557	\$6,347,235	\$8,251,406

Observations

- **General cargo growth**
 - Wind energy
 - Land & offshore
- **Growth in grain exports**
- **Lakes did not participate in container diversion from West Coast during 2021-2022 COVID period**
- **Growth in stone/aggregates and cement to support construction and infrastructure projects**
- **Tariffs on iron and steel had a negative impact in steel imports, but stimulated domestic steel production**

THANK YOU