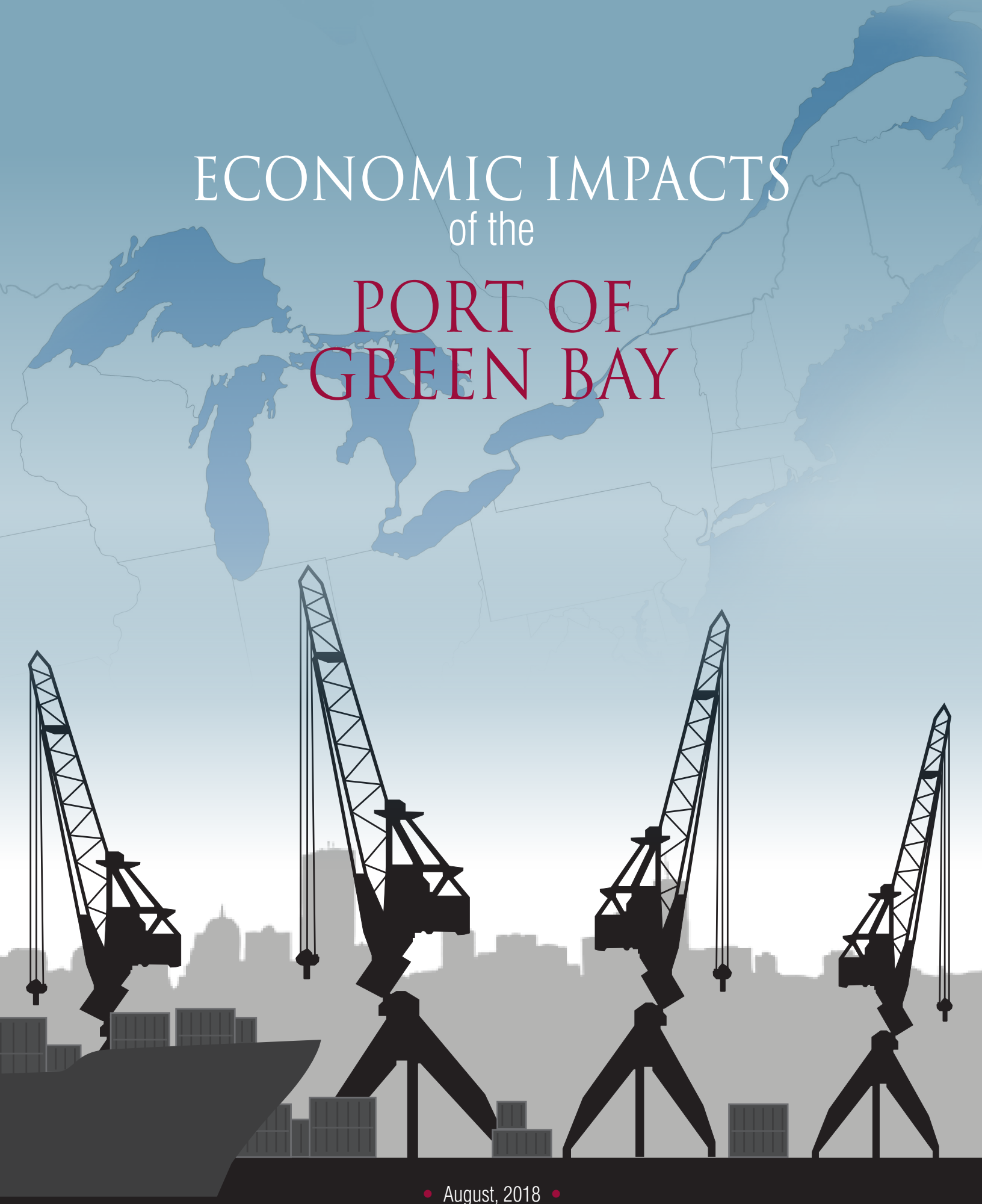
ECONOMIC IMPACTS of the PORT OF GREEN BAY



• August, 2018 •

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ABOUT THIS REPORT

A report entitled **Economic Impacts of Maritime Shipping in the Great Lakes-St. Lawrence Region** was published on July 18, 2018. (The report is available at www.greatlakesseaway.org). Martin Associates of Lancaster, Pennsylvania, was retained to prepare this study by a consortium of U.S. and Canadian Great Lakes-St. Lawrence Seaway System stakeholders. Study sponsors include: the Saint Lawrence Seaway Development Corporation, the St. Lawrence Seaway Management Corporation, the American Great Lakes Ports Association, the Chamber of Marine Commerce, the Lake Carriers' Association, and the Shipping Federation of Canada.

The analysis includes the economic impacts generated by marine cargo activity on the Great Lakes-St. Lawrence Seaway system, including U.S. domestic commerce, Canadian domestic commerce, bi-national commerce between the two countries, and international traffic moving between the Great Lakes-Seaway region and overseas destinations. The impacts are measured for the year 2017 and are presented in terms of total economic impacts at the bi-national regional level, the country level, and the state/provincial level.

This report, **Economic Impacts of the Port of Green Bay**, isolates the economic impacts created by all cargo and vessel activity at the Port of Green Bay.

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 — with a combined GDP of more than $6 trillion U.S. dollars. This output would represent the third-largest economy in the world — behind the U.S. and China — if it were a country.

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.

This report is designed to provide the navigation community, transportation planners, government policy makers and the general public with a realistic assessment of the contributions made by commercial maritime shipping at the Port of Green Bay.

Chapter I
METHODOLOGY

This section describes the methodology utilized to produce the report entitled Economic Impacts of Maritime Shipping in the Great Lakes-St. Lawrence Region, which was published on July 18, 2018. The economic impacts related specifically to the Port of Green Bay are included in that broader Great Lakes-St. Lawrence study, and have been isolated and reported separately in this document. The impacts are measured for the year 2017.

The Great Lakes, their connecting channels and the St. Lawrence River extends from the western-most point in Duluth, Minnesota, to eastern Quebec. This analysis examines the economic impacts created by cargo and vessel activity at all marine terminals located along this transportation corridor — in the states of Minnesota, Wisconsin, Illinois, Indiana, Michigan, Ohio, Pennsylvania and New York, and the provinces of Ontario and Quebec. Included are terminals owned by public port authorities such as municipalities, counties and independent port agencies, as well as those owned and operated by private companies.

The study methodology is based on analysis of a core group of 40 Canadian and U.S. Great Lakes-St. Lawrence River ports. The 40 individual ports are listed in **Exhibit I-1**.

The study team conducted detailed interviews with marine terminal operators, service providers, railroads, port tenants and other stakeholders at each port. The firms included in the interview process were identified from the following sources:

- Greenwood's Guide to Great Lakes Shipping
- Port directories
- Interviews with port authorities associated with the 40 individual ports
- Supplemental lists provided by stakeholders

EXHIBIT I-1
Individual Ports Included in the Study

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

In total, 770 firms with 1,105 operations throughout the region were identified. All firms were contacted by telephone to collect the data required to assess direct impacts and develop the individual port models. These firms provided data in the following categories:

- Jobs
- Income
- Revenue
- Local purchases
- Terminal operational specifics:
  - Modal splits
  - Hinterland distribution patterns
  - Rail and truck rates
  - Rail yard specifics

To measure the impacts of marine cargo moving via individual ports and private terminals not included in the core group of 40 ports, Martin Associates developed prototype economic impact models.

These models were used to expand the individual port impacts to a state/provincial level, thus incorporating the cargo tonnage at all marine terminals located within a specific state or province.

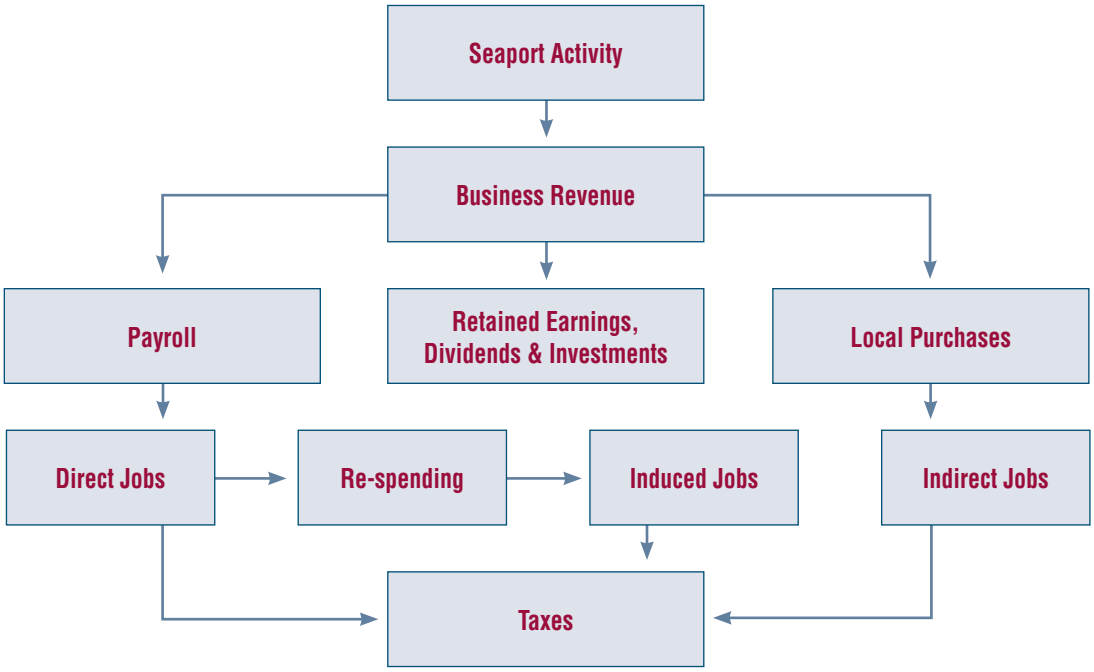
For the purpose of determining economic impacts, the report uses a tonnage handled figure. "Handled" refers to both the shipping (exporting) of the cargo from a system port, and to the receipt (importing) of that cargo in a system port. Because economic activity is created every time cargo is handled, for the purposes of this study, cargo moved between ports within the region has been handled twice. By contrast, cargo moved between the region's ports and overseas ports has been handled once (in the region).

1. FLOW OF IMPACTS

Waterborne cargo activity at a marine terminal contributes to the local, regional, state/provincial and national economies by generating business revenue for firms that provide vessel and cargo-handling services at the terminal.

These companies, in turn, provide employment and income to individuals, and pay taxes to federal, state/provincial and local governments. **Exhibit I-2** shows how activity at marine terminals generates impacts throughout the local, regional, state/provincial and national economies. As this exhibit illustrates, the

EXHIBIT I-2
Flow of Economic Impacts Generated by Marine Activity



economic impact of a port cannot be reduced to a single number, as the port activity creates several impacts — the **revenue impact**, **employment impact**, **personal income impact**, and **tax impact**.

These impacts are non-additive. For example, the income impact is part of the revenue impact, and adding together these impacts would result in double-counting.

The report also provides a total economic activity value, which is explained later in this chapter.

1.1 Business Revenue Impact

At the outset, activity at a port generates business revenue for firms that provide services. This business revenue impact is dispersed throughout the economy in several ways; it is used to hire people, purchase goods and services, and pay federal, state and local taxes. The remainder may be used to pay stockholders, retire debt or make investments, or may be held as retained earnings. Note that the only components of the revenue impact that can definitely be identified as remaining in the local economy are those portions dispersed in the following ways: salaries to local employees; local purchases by individuals and businesses directly dependent on the seaport; contributions to federal, state/provincial and local taxes; tenant lease payments to the port authorities; and wharfage and dockage fees paid by the steamship lines to the individual port authorities.

1.2 Employment Impact

Employment is measured in terms of full-time equivalent jobs, as defined by 2,080 hours per year per full-time worker. The employment impact of the port activity consists of three levels of job impacts:

- **Direct employment impact** — jobs directly generated by seaport activity. Direct jobs generated by marine cargo include jobs with railroads and trucking companies moving cargo between inland origins and destinations, and the marine terminals, as well as the jobs of longshoremen and dockworkers, steamship agents, freight forwarders, stevedores, and others. It should be noted that jobs classified as "directly generated" are those that would experience near-term dislocation if the activity at the marine terminals was discontinued.
- **Induced employment impact** — jobs created throughout the local, regional and national economies because individuals directly employed due to port activity spend their wages locally on goods and services such as food, housing and clothing. These jobs are held by residents located throughout the region, since they are estimated based on local and regional purchases.
- **Indirect employment impact** — jobs created within the region due to purchases of goods and services by firms, not individuals. These jobs are estimated directly from local purchases data supplied by the 770 companies interviewed as part of this study. They include jobs with office supply firms, maintenance and repair firms, parts and equipment suppliers, and others.

1.3 Personal Earnings Impact

The personal earnings impact is the measure of employee wages and salaries (excluding benefits) received by individuals directly employed due to port activity. Re-spending of these earnings on goods and services throughout the regional economy is also estimated using a state or provincial personal-earnings multiplier, which reflects the percentage of purchases by individuals that are made within the state/province in which the port is located. This re-spending generates additional jobs or the "induced" employment impact. The re-spending effect varies by region — a larger effect occurs in regions that produce a relatively large proportion of the goods and services consumed by residents, while lower re-spending effects are associated with regions that import a relatively large share of consumer goods and services (since personal earnings "leak out" of the region for these out-of-region purchases). The direct earnings are a measure of the local impact since they are received by those directly employed by port activity.

1.4 Tax Impact

Tax impacts are tax payments to federal, state/provincial and local governments by firms and by individuals whose jobs are directly dependent upon and supported (induced and indirect jobs) by activity at the marine terminals.

1.5 Total Economic Activity

The total economic activity value calculated in this report consists of the direct business revenue received by the businesses supplying the cargo and vessel handling services, and the re-spending of direct income and consumption expenditures. These two monetary measures of economic impact are additive, since the re-spending impact is in addition to the direct income impact and the business revenue is independent of

other dollar value impacts. The direct personal income, business purchases and taxes are paid from business revenue, and to include these in the total economic impact measure would result in double counting.

2. IMPACT STRUCTURE

The four types of economic impacts are created throughout various business sectors of the local, regional, state/provincial and national economies. Four distinct sectors are impacted as a result of activity at the marine terminals. These are:

- Surface transportation sector
- Maritime services sector
- Shippers/consignees using the port
- Port authorities/Seaway authorities

Within each business sector, various participants are involved. This study estimates separate impacts for each of the participants. Below is a discussion of the four sectors analyzed for economic impacts — including a description of the major participants in each.

2.1 Surface Transportation Sector

The surface transportation sector consists of both the railroad and trucking industries. The trucking firms and railroads are responsible for moving the various cargoes between the marine terminals, and the inland origins and destinations.

2.2 Maritime Services Sector

Waterborne cargoes handled by each port/marine terminal generate economic activity in various business sectors of the local economy. Specifically, these impacts occur in the following categories:

Terminal Operations — includes those companies that hire labor to load/off-load ships, transfer cargo to truck or rail, sort cargo, stage cargo, and provide short- and long-term storage of cargo

Dockworkers — includes members of the International Longshoremen's Association, International Union of Operating Engineers, International Brotherhood of Teamsters and the United Steelworkers, as well as those dockworkers with no union affiliation that are involved in the loading/unloading of cargo

Tug Assist — includes those companies that provide tug boats to assist vessels with docking and undocking

Pilots — includes those companies and organizations that provide navigation-assistance services to vessels as required under U.S. and Canadian law

Agents — includes those companies that provide vessel and crew-related services, including documentation required to enter and clear the ship, arrangement of pay for crews, and provision of food and supplies

Marine Services — includes a variety of service providers such as chandlers that supply ships with food, supplies and equipment; marine surveyors that inspect vessels and cargo, and provide valuations for insurance purposes; launch operators that provide ferry services for crew to move from ship to shore; and fuel-supply companies that provide vessels with bunker fuel

Freight Forwarders — includes those companies that provide transportation logistics and management services, and that coordinate both marine and land transportation for cargo

Government — includes those federal and local government agencies that perform services related to cargo handling and vessel operations, such as the U.S. Army Corps of Engineers, Department of Homeland Security, U.S. Customs and Border Protection, the Canadian and U.S. Coast Guards, and the Canada Border Services Agency

Ship Repair — includes those companies that provide ship construction and repair services on both a scheduled and emergency basis

Laker Operators — includes the crew and headquarters-based management employees of U.S. and Canadian domestic Great Lakes vessel operators that transport cargo

Barge Operators — includes the crew and headquarters-based management employees of U.S. and Canadian domestic Great Lakes barge operators that transport cargo

2.3 Shippers/Consignees Sector

This sector includes cargo owners that ship or receive cargo via a specific port. These companies are dependent upon the port and usually located within the port's immediate vicinity.

2.4 Port Authorities/Seaway Authorities

This sector includes the various port authorities operating in the Great Lakes-Seaway and St. Lawrence River. Also included in this category are the employees of the U.S. Saint Lawrence Seaway Development Corporation (SLSDC) and the Canadian St. Lawrence Seaway Management Corporation (SLSMC), as well as the lock operators at each of the lock systems on the Great Lakes-Seaway system — including the Soo Locks, which connect Lake Superior and Lake Huron.

3. SUMMARY OF METHODOLOGY

This section provides a summary of the methodological approach used to analyze the economic impacts of the vessel and cargo activity on the Great Lakes and St. Lawrence River.

3.1 Data Collection

The cornerstone of Martin Associates' approach is the collection of detailed baseline impact data from firms providing services at the ports and terminals. To ensure accuracy and defensibility, the baseline impact data were collected from interviews with 770 firms that provide services on the Great Lakes and St. Lawrence River. In most cases, multiple interviews were conducted with several persons in each firm.

The baseline survey data collected from the 770 firms was used to develop operational impact models for each of the 40 ports. This data was also used to develop models to expand the impact calculations beyond the 40 ports and therefore, to estimate state-wide/province-wide impacts.

3.2 Direct Jobs, Income, Revenue and Tax Impacts

The results of these interviews were then used to develop the baseline direct job, revenue and income impacts for the business sectors and job categories associated with the cargo activity at the marine terminals in the 40 individual port districts for which specific impact models were developed.

Total state and local tax impacts generated by the cargo activity on the St. Lawrence were estimated from several sources. The U.S. tax impacts were estimated from income indices developed by the Tax Foundation and the US Bureau of Census, "State and Local Government Finances," while the Canadian tax impacts were estimated based on data provided to Martin Associates by Revenue Canada. In addition, adjustments were made to reflect the different tax relationships in Quebec at the federal level.

3.3 Induced Impacts

Induced impacts are those generated by the purchases of individuals directly employed as a result of port and terminal activity. For example, a portion of the personal earnings received by those directly employed due to activity at the marine terminals is used for purchases of goods and services, both regionally, as well as out-of-region. These purchases, in turn, create additional jobs in the region; these jobs are classified as "induced".

To estimate these induced jobs for the 19 U.S. Great Lakes ports, the study team developed a state personal-earnings multiplier (for each state in which a port was located) from data provided by the U.S. Bureau of Economic Analysis, Regional Income Division. This personal-earnings multiplier was used to estimate the total personal earnings generated in the state as a result of the activity at the specific Great Lakes port within that state. A portion of this total personal-earnings impact was next allocated to specific local purchases (as determined from consumption data for the relevant state residents), as developed from the U.S. Bureau of Labor Statistics, Consumer Expenditure Survey, 2015. These purchases were next converted into retail and wholesale induced jobs in the state economy — by combining the purchases with the jobs-to-sales ratios in the supplying industries. A portion of the retail purchases was allocated to wholesale purchases, based on industry-specific data developed from the U.S. Bureau of Census, 2012 Economic Census. These wholesale purchases were combined with the relevant jobs-to-sales ratios for the wholesale industries associated with the local purchases. These ratios were developed at the state level in which the specific port was located.

To estimate the induced impacts associated with the cargo moving via the 21 Canadian ports, personal-income multipliers for the waterborne transportation sector in Ontario and Quebec were developed by Statistics Canada, Industry Accounts Division and provided to Martin Associates. Martin Associates developed the distribution of purchases by type of purchase (food at home, food in restaurants, housing, apparel, home furnishings, transportation, medical care, etc.) for each province — using data provided by Statistics Canada (2015 base data). The associated supplying industry jobs-to-sales ratios on a provincial level were also supplied to Martin Associates by Statistics Canada (Provincial Input-Output Models).

These ratios included the retail and wholesale re-spending impacts. The personal consumption expenditures from the port activity were then combined with these job multipliers to estimate the "consumption" induced impacts by the province in which each of the 21 Canadian ports are located.

To estimate the "non-consumption" induced impacts with such sectors as state/provincial governments, education, and other social services, a ratio of state/provincial employment in these key service industries to total state/provincial employment was developed. This ratio was then multiplied by the direct and consumption induced jobs to estimate the total direct and induced job impact.

The re-spending impact includes not only the wage and salary income received by people employed to provide goods and services to the direct job holders, but also the value of the purchases. Therefore, the re-spending/local consumption impact cannot be divided by the induced jobs to estimate the induced income — as this would overestimate the induced personal wage/salary impact per induced job.

A separate induced impacts model was developed for each of the 40 ports.

3.4 Indirect Jobs

Indirect jobs are generated in the local economy as the result of purchases by companies that are directly dependent upon cargo and vessel activity at ports and marine terminals, including shippers/consignees. These purchases are for goods such as office supplies and equipment, as well as for services including maintenance and repair, communications and utilities, transportation and professional services. To estimate the indirect economic impact, data on local purchases — by type of purchase — were collected from each of the firms interviewed. These local purchases were then combined with employment-to-sales ratios in local supplying industries, developed from the U.S. Bureau of Economic Analysis, Regional Input-Output Modeling System (RIMS II) for the U.S. ports and from Statistics Canada, Industry Accounts Division, for Canadian ports. The indirect job ratios also account for the in-state/in-province spin-off effects from multiple rounds of supply chains that are required to provide the purchased goods and services. Indirect income, local purchases and taxes are also estimated.

A separate indirect impacts model was developed for each of the 40 ports, as well as for the province-wide and state-wide models.

4. COMMODITIES INCLUDED IN THE ANALYSIS

Economic impacts were estimated for the following commodities handled at the marine terminals on the Great Lakes-Seaway and St. Lawrence River.

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

Impacts that are related to cargo or activity outside of the listed commodity groups are categorized as Not Allocated. This category includes employees such as the St. Lawrence Seaway Management Corp. and the St. Lawrence Seaway Development Corporation, Customs and Border Protection, Canadian and U.S. Coast Guard, U.S. Army Corps of Engineers assigned to the Great Lakes Districts, shiprepair and boatbuilding, portions of marine construction activity, to name a few.

Impacts of cruise passenger activity were not included in the analysis, but the impacts generated by passenger ferry operations were included.

5. ESTIMATE OF TONNAGE

Currently, there is no single data source for the marine cargo moving on the Great Lakes and St. Lawrence River. In order to accurately capture the tonnage moving on the Great Lakes-St. Lawrence waterway an extensive data collection effort was undertaken. The Chamber of Marine Commerce provided detailed port to port cargo movements by commodity carried on Canadian-flag vessels. International tonnage by commodity and port was provided by The St. Lawrence Seaway Management Corporation and the Maritime Information Bureau of the St. Lawrence Economic Development Council. The Lake Carriers' Association provided port to port movements by commodity for tonnage moved on U.S.-flag carriers.

This proprietary data base of tonnage represents the only comprehensive data base describing port to port cargo flows, by commodity and by flag, for cargo operations on the waterway.

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.

Tonnage value was calculated for 2017 by using the US Bureau of Census, USA Trade On-Line, which publishes the value per ton of waterborne cargo at a 7 digit commodity code classification, for both containerized and non-containerized commodities. This value per ton at the commodity level excludes the ocean or laker shipping rates as well as the terminal charges and inland transportation costs. The value per ton by commodity was then multiplied by the specific commodities moving on the Great Lakes and St. Lawrence River. The dollar value of the cargo was then expressed in both U.S. as well as Canadian dollars.

For the purpose of determining economic impacts, the report uses a *tonnage handled* figure. "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 the region's 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).

The tonnage *handled* at each of the 40 ports was then used as inputs into the port-specific models, which consist of the direct, induced, indirect sub-modules. Impacts were then estimated for each of the 40 ports.

6. EXPANSION OF THE 40-PORT IMPACT MODELS TO MEASURE SYSTEM-WIDE IMPACTS

A prototype model was developed for each state and province to measure the cargo that moves through private terminals and ports not located in one of the 40 port districts for which the individual models were developed. These prototype models also consist of direct, induced and indirect sub-modules, and were developed based on revenue-per-ton ratios and jobs-per-ton ratios by commodity and category, estimated from the port-specific models for the ports located in each relevant state or province.

The tonnage handled at ports that was not among the 40 ports was grouped by state and province and used in the other state and province models to develop a comprehensive measure of the economic impact on the bi-national economies.

Using the 40 port-specific models, and the state and provincial models, the economic impacts at the level of the 40 port districts and the "other state and provincial ports" were then combined to estimate total impacts in the following categories:

- Bi-national System-wide
- By country
- By state and province
- By commodity
- By carrier flag
- By employment sector

Note: Total figures on all tables and charts may not add up due to rounding.

Chapter II

ECONOMIC IMPACTS of the PORT OF GREEN BAY

This report isolates the economic impacts created by all cargo and vessel activity at the Port of Green Bay in 2017.

1. JOB IMPACTS

1,289 jobs in Wisconsin were supported by cargo moving via the marine terminals located at the Port of Green Bay.

- Of the 1,289 jobs, **564 jobs** were directly generated by the marine cargo and vessel activity at the marine terminals.
- As a result of the local and regional purchases by those 564 individuals holding the direct jobs, an additional **404 induced jobs** were supported in the regional economy.
- **321 indirect jobs** were supported by $34.7 million of regional purchases by businesses supplying services at the marine terminals at the Port of Green Bay.

2. REVENUE IMPACTS

In 2017, the direct business revenue received by the firms directly dependent upon the cargo handled at the marine terminals located at the Port of Green Bay was $105.1 million. These firms provide maritime services and inland transportation services for the cargo handled at the marine terminals and the vessels calling at the terminals.

3. PERSONAL INCOME AND LOCAL CONSUMPTION IMPACTS

The 564 individuals directly employed as a result of the cargo handled at the marine terminals at the Port of Green Bay received $25.6 million in wages and salaries. These individuals, in turn, used these earnings to purchase good and services, to pay taxes, and for savings.

EXHIBIT II-1
Economic Impacts of the Port of Green Bay

Jobs	
Direct Jobs	564
Induced	404
Indirect	321
Total	1,289
Personal Income (1,000)	
Direct	$25,577
Re-Spending/Local Purchases	$42,593
Indirect	$14,392
Total	$82,562
Business Revenue (1,000)	$105,133
Local Purchases (1,000)	$34,663
Taxes (1,000)	
Federal	$23,436
State	$9,082

Note: Totals may not add due to rounding

The purchase of goods and services from regional sources creates a re-spending effect known as the personal earnings multiplier effect. Using the local personal earnings multipliers, an additional $42.6 million in income and consumption were created by the Port of Green Bay. In developing the personal-income multiplier impacts, Martin Associates relied on government agencies to provide the income multipliers.

In addition, the 321 indirectly employed workers received indirect wages and salaries totaling $14.4 million. Combining the direct, induced and indirect income impacts, the cargo handled at the Port of Green Bay generated $82.6 million in wages and salaries, and local consumption expenditures in the regional economy.

4. FEDERAL, STATE AND LOCAL TAX IMPACTS

A total of $32.5 million in state and federal taxes were generated by cargo and vessel activity at the Port of Green Bay, with $9.1 million generated at the state level and $23.4 million generated at the federal level.

ABOUT MARTIN ASSOCIATES

Martin Associates of Lancaster, Pennsylvania, is a leading provider of economic analysis and consulting services to the maritime industry. Since 1986, the company has developed more than 1,000 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. Martin Associates' clients include port authorities, marine terminal operators, private investment groups, ocean carriers and federal, provincial and state governments, as well as maritime trade organizations.

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