

The Local and Regional Economic Impacts of Port Panama City



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I. INTRODUCTION AND OVERVIEW

The Port of Panama City consists of 138 acres of terminal and industrial space handling containers, break bulk steel, copper bundles, linerboard, stone, wood pellets, and molasses. The Port's terminals are located in Saint Andrew Bay, approximately nine miles from the Intracoastal Waterway. In total, these terminals handled more than 2 million tons of cargo in 2015. This tonnage moved on more than 280 vessels and barges calling the Port's marine terminals. Copper and steel products account for more than 785,000 tons of the 2 million tons handled at the Port's terminals, followed by nearly 783,000 tons of wood pellets. Steel products are used primarily by local industry to manufacture pipes for use by the offshore oil and gas industry. The copper is trucked out of state and is ultimately drawn into wire for use in residential, commercial, and industrial electricity transmission. The wood pellets are produced at a local plant using softwood trees harvested by regional logging operations and supplemented with residues from local sawmills. The pellets are then exported to Northern Europe for generation of heat and power. Roughly 150,000 tons of linerboard, produced by regional paper mills, are exported to the Caribbean and South America.

The 80,000 tons of stone imported by Panama City is primarily used by the local construction industry. Finally, the 200,000 tons of containerized cargo shipped to and from Progreso, Mexico are composed predominantly of fabric exports from regional textile mills and apparel imports that are ultimately sold by retailers throughout Florida and neighboring states. There are also imports of containerized copper.

The cargo moving via the Port's marine terminals has a far reaching impact into the local and regional economies, and is not just limited to activity at the marine terminals. The imported cargo is used by local and regional steel, wire, and construction industries while the export cargo is produced regionally, trucked and railed to the port to serve international destinations.

The purpose of this economic impact analysis is to quantify the impact of Port Panama City. As demonstrated, the impact is not just limited to the loading and off-loading of the vessels. The local production of exports and consumption of imports creates jobs, income, revenue and taxes at every stage of the logistics supply chain. To measure the economic impacts of Port Panama City cargo operations, the study employs methodology and definitions that have been used by Martin Associates to measure the economic impacts of seaport activity at more than 500 ports in the United States and Canada. It is to be emphasized that only measurable impacts are included in this study. In order to ensure defensibility, the Martin Associates approach to economic impact analysis is based on data developed through an extensive interview and telephone survey program of Port Panama City terminals and the firms providing cargo services. Specific re-spending models have been developed for the Panama City area to reflect the unique economic and consumer profiles of the regional economy.

This study focuses on impacts generated during fiscal year 2015, which uses the latest data

available from Port Panama City. Impacts are estimated in terms of jobs, personal earnings, business revenue, and state and local taxes. In addition to the baseline impact estimates, computer models specific to each terminal operation have been prepared that can be used in evaluating the sensitivity of impacts to changes in tonnage, labor productivity, labor work rules, commodity mix, inland origins/destinations of commodities and vessel size.

1. IMPACT DEFINITIONS

The impacts are measured in terms of:

- Jobs [direct, induced, indirect and related users];
- Personal income;
- Business revenue; and
- State and local taxes.

Each impact measurement is described below:

- **Direct, Induced and Indirect jobs - *Direct jobs*** are those that would not exist if activity at the Port's cargo facilities were to cease. Direct jobs created by maritime cargo activity at the Port's terminals are those jobs with the firms directly providing cargo handling and vessel services, including trucking companies, terminal operators and stevedores, tenants on port property, members of the American Longshoremen's Association (ALA), non-union dockworkers, freight forwarders and customhouse brokers, vessel agents, barge crewmembers, pilots and tug assist companies.

It is to be emphasized that these are classified as directly generated in the sense that these jobs would experience near term dislocation if the Port facilities were closed. These jobs are, for the most part, local jobs and are held by residents of Bay County.

- ***Induced jobs*** are jobs created in the Panama City region by the purchases of goods and services by those *individuals* directly employed by each of the directly dependent lines of business. These jobs are based on the local purchase patterns of Florida residents. The induced jobs are jobs with grocery stores, restaurants, health care providers, retail stores, local housing/construction industry, and transportation services, as well as with wholesalers providing the goods to the retailers.
- ***Indirect jobs*** are created throughout the region as the result of purchases for goods and services by the *firms* directly impacted by Port Panama City activity, including the tenants, terminal operators and the firms providing services to cargo operations. The indirect jobs are

measured based on actual local purchase patterns of the directly dependent firms, and occur with such industries as utilities, office supplies, contract service providers, maintenance and repair, and construction.

- ***Related shipper/consignee (related user) jobs*** with firms using the cargo terminals to ship and receive cargo. These jobs are not entirely dependent upon the Port activity, but reflect the importance of the Port to local firms. While the facilities and services provided in the seaport are a crucial part of the infrastructure allowing these jobs to exist, they would not necessarily be immediately displaced if marine cargo activities were to cease. These jobs include jobs associated with containerized cargo, logging operations, paperboard and pellet production, and the local construction industry.
- **Personal income impact** consists of wages and salaries received by those directly employed by Port activity, and includes a respending impact which measures the personal consumption activity within the state of Florida by those directly employed as the result of Port Panama City cargo activity. Indirect personal income measures the wages and salaries received by those indirectly employed.
- **Business revenue** consists of total business receipts by firms providing services in support of the Port's cargo. **Local purchases for goods and services** made by the directly impacted firms are also measured. These local purchases by the dependent firms create the indirect impacts.
- **State and local taxes** include taxes paid by individuals as well as firms dependent upon Port Panama City cargo.

2. METHODOLOGY

2.1. Data Collection

The impacts Port Panama City presented in this report were estimated based on telephone and personal interviews with 32 firms in the local area. This represents the universe of the cargo businesses (with the exception of trucking firms) operating on the Port's property in Saint Andrew Bay. It is to be emphasized that a 97% response rate was achieved from these firms. The direct impacts are measured at the firm level of detail, and aggregated to develop the impacts for Port Panama City. Each firm surveyed provided Martin Associates with detailed employment levels (both full time and part time), annual payroll, local purchases and the residence of the employees. Data was collected from the Port Authority, terminal operators and service providers to estimate the 2015 impacts.

2.2. Direct Impacts

The results of these interviews were then used to develop the baseline direct job, revenue, and income impacts for the cargo activity and for the economic sectors and job categories associated with each activity.

This baseline survey data was also used to develop operational models that can be used to update the impacts of the marine cargo activity on an annual basis and to evaluate the impacts of changes in:

- Marine cargo tonnage, by commodity;
- Seaport labor productivity, and work rules;
- Modal distribution of cargo (what percent of the inland transportation of a commodity is truck versus rail), as well as the geographical distribution of each commodity; and
- Vessel/barge calls.

Also, the operational models can be used to evaluate alternative facilities, expansion projects and new construction, such as a new or expanded marine cargo or cruise terminal.

2.3. Induced Impacts

Induced impacts are those generated by the purchases of the individuals employed as a result of cargo activity. For example, a portion of the personal earnings received by those directly employed due to activity at the seaport is used for purchases of goods and services, both in-state, as well as out-of-state. These purchases, in turn, create additional jobs in the state of Florida, which are classified as induced. To estimate these induced jobs, a personal earnings multiplier for the state of Florida was developed from data provided by the Bureau of Economic Analysis, Regional Input-Output Modeling System. This income multiplier is used to estimate the total personal earnings generated in the state. A portion of this total personal earnings impact is next allocated to specific local purchases (as determined from regional consumption data for the south, as developed from the U.S. Bureau of Labor Statistics, Consumer Expenditure Survey, 2014). These purchases are next converted into retail and wholesale induced jobs in the regional economy.

2.4. Indirect Impacts

Indirect jobs are generated in the local economy as the result of purchases by firms that are directly dependent upon activity at Port Panama City's marine cargo terminals in Saint Andrew Bay. These purchases are for goods such as office supplies and equipment, maintenance and repair services, raw

materials, communications and utilities, transportation services and other professional services. To estimate the indirect economic impact, local purchases, by type of purchase, were collected from each of the 32 firms interviewed. These local purchases were then combined with employment to sales ratios in local supplying industries, developed from U.S. Bureau of Economic Analysis, Regional Input-Output Modeling System for the state of Florida. These jobs to sales ratios capture the numerous spending rounds associated with the supply of goods and services. Special care has been exercised to avoid double counting the indirect impacts, and to specifically include only the expenditures by the directly dependent firms that are, in fact, local.

2.5. Related Impacts

Related impacts measure the jobs with shippers and consignees moving cargo through the marine terminals. ***Related jobs are not dependent upon the port marine terminals to the same extent as are the direct, induced, and indirect jobs. It is the demand for the final products which creates the demand for the employment with these shippers/consignees, not the use of Port Panama City's terminals, and therefore these firms can and do use other ports.*** For example, when hurricane devastation renders a port's terminals inoperable, essentially suspending operations at the port, the direct, induced, and indirect jobholders are immediately affected with similar consequence. However, the jobs held with related users, such as manufacturing as well as wholesale and retail distribution, throughout the unaffected areas of the state will continue to operate. Related impacts for the Port facilities were estimated by multiplying the value of the cargo moving via the marine terminals with jobs to sales ratios specific to the exporters and importers.¹

2.6. Tax Impacts

The tax impacts include state and local taxes collected from all sources, both personal and business taxes. The state and local per capita income and corporate tax burdens (developed by the Tax Foundation for the state of Florida) are applied to the total direct, induced and indirect income and business revenue impacts to estimate total state and local taxes created by Port activity.

¹ The value of cargo moving via the marine terminals was determined from U.S. Census of Foreign Trade Statistics, while the ratios of jobs to sales data for related Florida exporters and importers were developed from data supplied to Martin Associates by the Bureau of Economic Analysis, Regional Input-Output Modeling System.

3. SUMMARY OF RESULTS

Exhibit I-1 provides a summary of the economic impact analysis of Port Panama City.

Exhibit I-1 2015 Economic Impacts of Port Panama City*

PORT PANAMA CITY	
JOBS	
Direct	1,256
Induced	1,017
Indirect	571
User Jobs	<u>5,994</u>
Total Jobs	8,839
PERSONAL INCOME (\$1,000)	
Direct	\$58,901
Re-Spending/Consumption	\$115,812
Indirect	\$24,008
User Income	<u>\$202,836</u>
Total Income and Consumption	\$401,558
VALUE OF ECONOMIC ACTIVITY (\$1,000)	
Business Services Revenue	\$465,233
User Output	<u>\$772,075</u>
Total Value of Economic Activity	\$1,237,309
Local Purchases (\$1,000)	\$41,967
STATE & LOCAL TAXES (\$1,000)	
Direct, Induced, and Indirect	\$22,250
User Taxes	<u>\$25,980</u>
Total State and Local Taxes	\$48,231

*Totals may not add due to rounding

In 2015, Port Panama City supported 8,839 jobs in the state of Florida. Of these jobs, 1,256 jobs are directly created by port activities, while another 1,017 induced jobs are generated within the state as the result of local purchases made by those directly employed due to Port activity. In addition, there are 571 indirect jobs supported in the Florida area as the result of \$42.0 million of local purchases

by directly dependent firms. In addition, the cargo moving via port terminals supports 5,994 related jobs throughout Florida. The majority of these jobs are associated with containerized cargo and forest product manufacturing.

The 1,256 direct jobs received \$58.9 million of direct wage and salary income, for average earnings of \$46,892 per direct employee. This compares to an average wage throughout the state of Florida of \$42,860 in 2015.² As a result of local purchases with this \$58.9 million of direct wages and salaries, an additional \$115.8 million of income and local consumption expenditures were created in the state of Florida. It is this re-spending impact that supported the 1,017 induced jobs.³ The indirect job holders received \$24.0 million in personal income. In total, \$401.6 million of personal income was supported by Port Panama City operations, including the \$202.8 million received by those employed with the related users of the Port.

Local businesses received \$465.2 million of sales revenue from providing services to the ocean cargo activity. This does not include the value of the cargo moving via the Port. The cargo activity in Panama City created an additional \$772.1 million of related economic output in the state. It is to be emphasized that only the economic activity associated with the raw materials and finished products that move via the public and private marine terminals at Port Panama City is included.

As a result of the cargo activity at the Port, a total of \$48.2 million of state and local tax revenue was generated. Of this, \$22.3 million of state and local taxes are generated by dependent employees and businesses while \$26.0 million of taxes are generated by related firms and employees.

The total economic value of the marine cargo and vessel activity at Port Panama City, including the revenue and value added at each stage of moving an export to the Port or an import from the marine terminals, is estimated at nearly \$1.4 billion. The total economic value consists of monetary measures that are independent of each other and combining these measures does not result in double counting of the impacts. This includes the \$465.2 million of direct business revenue received from businesses providing cargo and vessel services at the port and moving the cargo to and from inland destinations and origins; the \$115.8 million of re-spending and local personal consumption impact; and the \$772.1 million of output supported by the related users. This \$772.1 million includes the revenue and value added at each stage of production, including support firms providing goods and services during the production of the export. The total economic value with users of import cargo includes the economic value of the imported cargo moving through the seaport to final consumption

² U.S. Bureau of Labor Statistics, May 2015 State Occupational Employment and Wage Estimates, Florida.

³ The induced income impact also includes local consumption expenditures and should not be divided by induced jobs to estimate the average salary per induced job. This re-spending throughout the region is estimated using a regional personal earnings multiplier, which reflects the percentage of purchases by directly employed individuals that are made within the state. Hence, the average salary would be overestimated as only a percentage of purchases are used to pay wages.

either by individuals or industry. It is to be emphasized that the \$772.1 million of output with related users would not disappear from the national economy should the cargo move through another port, as it is the demand for the export and import cargo that drives the value of the cargo and generates the user economic value. If the cargo were to move to another port, the logistics cost of moving the imports and exports would increase, but the value would still be generated in other regions and/or other states due to the demand for the export and import products; however, the \$465.2 million of direct business revenue and the \$115.8 million of re-spending and local consumption expenditures would be lost from the local economy. The related economic value demonstrates at a given point of time, the magnitude of the influence of Port Panama City marine terminals and tenant activity.

The last economic impact study of Port Panama City was conducted in 2012. This study was conducted by Martin Associates and uses the same methodology as the current study. Therefore, direct comparisons can be made. Between 2012 and 2015, cargo activity at the Port's public and private marine terminals increased by more than 600,000 tons. As a result, the overall economic impact of the port operations increased. Direct, induced and indirect jobs grew by 230 jobs. However, due to changes in the composition of the cargo handled, notably a higher share of consumer goods in containerized imports, total economic activity fell by \$211.5 million.

In summary, there are 1,256 jobs in the Panama City area that are directly dependent on the cargo activity occurring in the Port. If all of these employees worked for a single company it would be the fifth largest employer in Bay County behind Bay Medical Center (2,174 full-time equivalent employees,) and ahead of Wal-Mart (1,240 full-time equivalent employees.)⁴

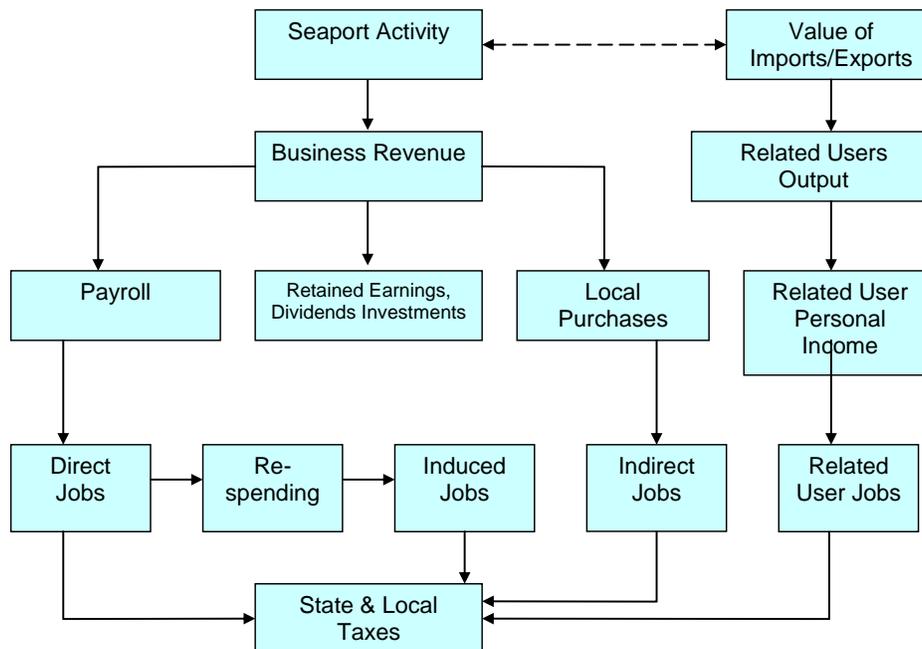
The balance of the report describes in detail the impacts created by maritime cargo operations of the Port Panama City.

⁴ Livability, "*Bay County Top Employers*," April 28, 2011, < <http://www.livability.com/fl/panama-city/business/bay-county-top-employers>>

II. ECONOMIC IMPACTS OF MARITIME CARGO ACTIVITY

Waterborne cargo activity at a seaport contributes to the local and regional economy by generating business revenue to local and national firms providing vessel and cargo handling services at the marine terminals. These firms, in turn, provide employment and income to individuals, and pay taxes to state and local governments. Exhibit II-1 shows how activity at marine terminals generates impacts throughout the local, state and national economies. As this exhibit indicates, the impact of a seaport on a local, state or national economy cannot be reduced to a single number, but instead, the seaport activity creates several impacts. These are the revenue impact, employment impact, personal income impact and tax impact. These impacts are non-additive. For example, the income impact is a part of the revenue impact, and adding these impacts together would result in double counting. Exhibit II-1 shows graphically how activity at Port Panama City’s marine terminals generate the four impacts.

Exhibit II-1
Flow of Economic Impacts Generated by Marine Activity



At the outset, activity at the port generates business revenue for firms which provide services. This business revenue impact is dispersed throughout the economy in several ways. It is used to hire

people to provide the services, to purchase goods and services, and to make federal, state and local tax payments. The remainder is used to pay stock-holders, retire debt, make investments, or is held as retained earnings. It is to be emphasized that the only portions of the revenue impact that can be definitely identified as remaining in the local economy are those portions paid out in salaries to local employees, for local purchases by individuals and businesses directly dependent on the seaport, in contributions to state and local taxes, in lease payments to Port Panama City by tenants, and wharfage and dockage fees paid to the Port.

The employment impact of seaport activity consists of four 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, longshoremen and dockworkers, steamship agents, freight forwarders, stevedores, etc. It is to be emphasized that these are classified as directly generated in the sense that these jobs would experience near term dislocation if the activity at Port Panama City marine terminals were to be discontinued.
- ***Induced employment impact*** -- jobs created throughout the local economy because individuals directly employed due to seaport 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 jobs*** -- are jobs created locally due to purchases of goods and services by firms, not individuals. These jobs are estimated directly from local purchases data supplied to Martin Associates by the companies interviewed as part of this study, and include jobs with local office supply firms, maintenance and repair firms, parts and equipment suppliers, etc. It is to be emphasized that special care was taken to avoid double counting, since the current study counts certain jobs as direct (i.e., trucking jobs, jobs with railroads, jobs with insurance companies and admiralty law firms, etc.) which are often classified as indirect by other approaches, notably the input/output model approach.
- ***Related shipper/consignee (related user) jobs*** with firms using the cargo terminals to ship and receive cargo. These jobs are not entirely dependent upon Port activity, but reflect the importance of the terminals to local firms. While the facilities and services provided in the seaport are a crucial part of the infrastructure allowing these jobs to exist, they would not necessarily be immediately displaced if marine cargo were to cease. These jobs include jobs associated with containerized cargo, forest product manufacturing, and textile mills. It is important to note that these shippers/consignees also use other ports and are not

completely dependent upon Port Panama City. The level of employment with these firms is driven by the demand for the firms' products, not because the Port is used. Therefore, these related jobs are not dependent upon port activity, and their degree of dependence on the Port is much less than the other components of the job impact.⁵

The personal earnings impact is the measure of employee wages and salaries (excluding benefits) received by individuals directly employed due to seaport activity. Re-spending of these earnings throughout the regional economy for purchases of goods and services is also estimated. This, in turn, generates additional jobs -- the induced employment impact. This re-spending throughout the region is estimated using a regional personal earnings multiplier, which reflects the percentage of purchases by individuals that are made within the state of Florida. The re-spending effect varies by region -- a larger re-spending 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-regional purchases). The direct earnings are a measure of the local impact since they are received by those directly employed by seaport activity.

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

1. ECONOMIC IMPACT STRUCTURE

Economic impacts are created throughout various business sectors of the state and local economies. Specifically, four distinct economic sectors are impacted as a result of activity at the seaport terminals. These are the:

- Surface Transportation Sector;
- Maritime Services Sector;
- Related Shippers/Consignees Sector; and
- Port Panama City Port Authority.

Within each sector, various participants are involved. Separate impacts are estimated for each of the participants. A discussion of each of the economic impact sectors is provided below, including a description of the major participants in each sector.

⁵ The related jobs, income, value of output and taxes should not be used when evaluating the incremental economic impacts of specific port projects or the impacts of changes in cargo volume. These related impacts are net of the direct, induced and indirect impacts generated by port activity.

1.1. The 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 seaport terminals and the inland origins and destinations.

1.2. The Maritime Services Sector

This sector consists of numerous firms and participants performing functions related to the following maritime services:

- Maritime Cargo Transportation;
- Vessel Operations;
- Cargo Handling; and
- Federal, State and Local Government Agencies.

A brief description of the major participants in each of these four categories is provided below:

- Maritime Cargo Transportation

Participants in this category are involved in arranging for inland and water transportation for export or import freight. The freight forwarder/customs broker is the major participant in this category. The freight forwarder/customs broker arranges for the freight to be delivered between the terminals and inland destinations, as well as the ocean transportation. This function performed by freight forwarders and customhouse brokers is most prevalent for containerized and general cargo commodities.

- Vessel Operations

This category consists of several participants. The steamship agents provide a number of services for the vessel as soon as it enters the port. The agents arrange for medical and dental care of the crew, for ship supplies as well as payment of various expenses including port charges (where applicable). The agents are also responsible for vessel documentation. In addition to the steamship agents arranging for vessel services, those providing the services include:

- Chandlers - supply the vessels with ship supplies (food, clothing, nautical equipment, etc.);

- Towing firms - provide the tug service to guide the vessel to and from port;
- Vessel and barge crewmembers – those individuals aboard the vessels and barges to and from port;
- Pilots - assist in navigating the vessels through Saint Andrew Bay;
- Bunkering firms - provide fuel to the vessels;
- Marine surveyors - inspect the vessels and the cargo; and
- Shipyards/marine construction firms - provide repairs (either emergency or scheduled) and seasonal lay-ups as well as marine pier construction and dredging.

- Cargo Handling

This category involves the physical handling of the cargo at the terminals between the land and the vessel. Included in this category are the following participants:

- Longshoremen & dockworkers - include members of the American Longshoremen's Association (ILA), as well as those dockworkers with no union affiliation that are involved in the loading/unloading of cargo from the vessels and barges, as well as handling the cargo prior to loading and after unloading;
 - Stevedoring firms - manage the longshoremen and cargo-handling activities;
 - Cargo terminal operators - provide services to operate the maritime terminals, track cargo movement and provide security where cargo is loaded and off-loaded; and
 - Warehouse operators - store cargo after discharge or prior to loading and consolidate cargo units into shipment lots. In many cases the freight forwarders and consolidators are also involved in warehousing activity.
- Government Agencies

This service sector involves federal, state and local government agencies that perform services related to cargo handling and vessel operations at the Port. Department of Homeland Security (DHS), which includes (but is not limited to) Customs and Border Protection (CBP), US Immigration and Customs Enforcement (ICE) and U.S. Coast Guard, U.S. Department of Labor, U.S. Department of Agriculture and the U.S. Army Corps of

Engineers, are involved.

1.3. Related Shipper/Consignees

Related jobs consist of jobs with related shippers/consignees shipping and receiving cargo through the Port's terminals. Only the user industry activity that can be linked to the movement of cargo (either raw materials or finished products) through Port Panama City is considered in this related user impact.

1.4. Port Panama City Port Authority

The Port Panama City Port Authority includes those individuals whose purpose is to oversee port activity at the public terminals.

2. COMMODITIES INCLUDED IN THE ANALYSIS

A major use of an economic impact analysis is to provide a tool for port development planning. As a port grows, available land and other resources for port facilities become scarce, and decisions must be made as to how to develop the land and utilize the resources in the most efficient manner. Various types of facility configurations are associated with different commodities. For example, containers, automobiles and roll-on/roll-off cargo require a large amount of paved, open storage space, while certain types of break bulk cargoes such as steel coil, lumber and plywood may require covered storage. Perishable commodities require temperature controlled warehouses and some dry bulk cargo requires covered storage and special dust removing equipment, while tank farms are needed to store liquid bulk cargo.

An understanding of the commodity's relative economic value in terms of employment and income to the local community, the cost of providing the facilities, and the relative demand for the different commodities is essential in making future port development plans. Because of this need for understanding relative commodity impacts, economic impacts are estimated for the following commodities handled at the public and private cargo terminals:

- Containers
- Copper
- Flex Pipe
- Linerboard
- Project Cargo
- Reels
- Steel Coil
- Steel Pipe
- Steel Plate
- Other Breakbulk

- Stone
- Wood Pellets
- Molasses

It should be emphasized that commodity-specific impacts are not estimated for each of the economic sectors described in Section II.1. Specific impacts could not be allocated by individual commodities with any degree of accuracy for maritime construction, ship repair, or the state and federal government due to the fact that it is difficult to estimate the percentage of resources that are dedicated to one commodity over another. For example, maritime construction may occur at a terminal that is multi-use and cannot be attributed to a specific commodity.

3. MARITIME CARGO EMPLOYMENT IMPACTS

The employment generated by maritime cargo activity at Port Panama City is estimated.

- First, the total employment that is in some way related to the activities at cargo terminals is estimated from the interview process of 32 terminals, tenants and service providers and 2015 data obtained by the Port Panama City Port Authority as described in the methodology;
- Second, the subset of total employment that is judged to be totally dependent (i.e., direct jobs) on port activity is analyzed as follows:
 - The direct job impact is estimated by detailed job category, i.e., trucking, ALA/dockworkers, steamship lines, steamship agents, chandlers, surveyors, etc;
 - The direct job impact is estimated for each of the key commodities/commodity groups;
 - The direct job impact is estimated based on the residency of those directly employed;
- Induced and indirect jobs are estimated;
- Finally, jobs related to the maritime activity at the cargo terminals are described.

It is estimated that 8,839 jobs are directly supported by, or related to, port activities at the Port Panama City cargo terminals. Of the 8,839 jobs:

- 1,256 jobs are directly generated by activities at the cargo terminals and if such activities should cease, these jobs would be discontinued over the short term.
- 1,017 jobs (induced jobs) are supported by the local purchases of the 1,256 individuals directly

generated by port activity at the cargo terminals. An additional 571 indirect jobs were supported by \$42.0 million of purchases in the local and regional economy by firms providing direct cargo handling and vessel and barge services.

- 5,994 jobs are related to cargo loaded and discharged over the docks in Panama City. These jobs are supported in the state's manufacturing, retail, wholesale, and distribution industries and the in-state industries supporting the movement, processing, and distribution of all commodities, primarily containerized cargo and forest product manufacturing within the state.

3.1. Direct Maritime Cargo Job Impacts

In 2015, about 2.0 million tons of waterborne cargo moved via Port Panama City's terminals. As a result of this activity, 1,256 full-time jobs were directly created.⁶ In this section the jobs are analyzed in terms of:

- Distribution by job category;
- Distribution by commodity group; and
- Distribution by county and state of residency.

These distributions are developed in more detail below.

3.1.1. Job Impacts by Category

Exhibit II-2 presents the distribution of the 1,256 direct jobs by type of job. The exhibit indicates that nearly half of direct jobs (590) are with terminals and dependent shippers located on Port property followed by trucking jobs (198) moving cargo to and from the terminals, Longshoremen (134) and other tenants (102.)

⁶ Jobs are measured in terms of full-time worker equivalents. If a worker is employed only 50 percent of the time by activity at a Port cargo terminal, then this worker is counted as .5 jobs.

Exhibit II-2 Cargo Employment Impacts by Sector and Job Category*

SECTOR	DIRECT JOBS
SURFACE TRANSPORTATION	
Rail	35
Truck	198
MARITIME SERVICES	
Terminal/Shipper	590
ALA Longshoremen	134
Towing/Barge	19
Pilots	5
Agents	4
Maritime Services/Freight Forwarders/Consolidators	23
Warehousing/Container Repair	0
Government	49
Marine Construction/Dredging	37
Other Tenants	102
PORT AUTHORITY	<u>62</u>
TOTAL	1,256

*Totals may not add due to rounding

3.1.2. Direct Job Impacts by Commodity

Most of the 1,256 jobs considered to be generated by port activity can be associated with the handling of specific commodities or commodity groups. Certain employment categories such as government employees cannot be identified with a specific commodity. As a result, employment in these groups (which totaled 268) was not allocated to commodity groups. Exhibit II-3 presents the relative employment impacts in terms of commodity groups.

Exhibit II-3 Distribution of Direct Cargo Job Impact by Commodity*

COMMODITY	DIRECT JOBS
CONTAINER	140
COPPER	205
FLEX PIPE	50
KLB	43
PROJECT CARGO	6
REELS	47
STEEL COIL	12
STEEL PIPE	23
STEEL PLATE	294
O BREAKBULK	2
STONE	13
WOOD PELLETS	151
MOLASSES	3
NOT ALLOCATED	268
TOTAL	1,256

*Totals may not add due to rounding

The movement of steel plate supports the largest number of direct jobs, (294,) followed by the import of copper (205 jobs), wood pellets (151 jobs,) and containers (140 jobs).

3.1.3. Distribution of Direct Cargo Jobs by Place of Residence

To underscore the geographic scope of the impacts generated by the cargo terminals, Exhibit II-4 presents the distribution of the 1,024 direct jobs (excluding those employed in the Trucking and Rail sectors,) by place of residency. The geographic employment analysis is based on the results of the interviews with firms in the maritime community. As this exhibit indicates, 83.5% of the direct job holders reside in Bay County – 34.4% reside in Panama City while another 49.1% live in other parts of Bay County.

Exhibit II-4 Distribution of Direct Cargo Jobs by Place of Residence*

PLACE OF RESIDENCY	SHARE	DIRECT JOBS**
Panama City	34.4%	352
Other Bay County	49.1%	502
Other Northwest Florida	16.0%	164
Other US	0.5%	6
Total	100.0%	1,024

*Totals may not add due to rounding

**Excludes trucking, and rail jobs

3.2. Induced Jobs

The 1,256 directly employed individuals received wages and salaries, a part of which was used to purchase local goods and services such as food, housing, clothing, transportation services, etc. As a result of these local purchases, 1,017 induced jobs in the regional economy were supported. The majority of the induced jobs are with local and regional private sector social services, business services, educational services and state and local government agencies, followed by jobs in the food and restaurant sector, and then jobs in the construction and home furnishings sector.

3.3. Indirect Jobs

In addition to the induced jobs generated by the purchases by directly employed individuals, the firms providing the direct services and employing the 1,256 direct job holders make local purchases for goods and services. These local purchases by the dependent firms generate additional local jobs - indirect jobs. Based on interviews with the cargo-related firms, these firms made \$42.0 million of local and in-state purchases. These direct local purchases created an additional 571 indirect jobs in the local economy.

3.4. Related User (Shipper/Consignee) Jobs

In addition to the direct, induced and indirect jobs, an estimate of jobs related to cargo moving via the Port was developed. It is estimated that 5,994 jobs with regional steel processing and construction firms are related to cargo moving via Port Panama City's marine cargo terminals. It is to be emphasized that these jobs are only related jobs, not jobs dependent upon Port cargo.

4. TOTAL ECONOMIC VALUE AND BUSINESS REVENUE IMPACTS

The total economic value of the marine cargo and vessel activity at Port Panama City including the revenue and value added at each stage of moving an export to the Port or an import from the marine terminals is estimated at nearly \$1.4 billion. This includes the \$465.2 million of direct business revenue received from businesses providing cargo and vessel services at the port and moving the cargo to and from inland destinations and origins; the \$115.8 million of re-spending and local personal consumption impact; and the \$772.1 million of value of output supported by the related users. This \$772.1 million of value of output includes the revenue and value added at each stage of production, including support firms providing goods and services during the production of the export. The economic value of output with users of import cargo includes the economic value of the imported cargo moving through the seaport to final consumption either by individuals or industry. It is to be emphasized that the \$772.1 million of value of output with related users would not disappear from the U.S. economy should the cargo move through another port, as it is the demand for the export and import cargo that drives the value of the cargo and generates the user economic value. If the cargo were to move to another port, the logistics cost of moving the imports and exports would increase, but the value would still be generated in other regions and/or other states due to the demand for the export and import products; however, the \$465.2 million of direct business revenue and the \$115.8 million of re-spending and local consumption expenditures would be lost from the local economy. The related economic value demonstrates at a given point of time, the magnitude of the influence of Port Panama City's marine terminals.

4.1 Direct Business Revenue of Providing Services

The balance of the discussion focuses on the \$465.2 million of direct business revenue generated from the provision of services to the cargo, vessels and barges handled at the Port's marine terminals.

Exhibit II-5 shows the distribution of this revenue impact by category and economic sector. As this exhibit indicates the terminal and dependent shipper activities receive the largest share of the total revenue impact, \$390.8 million, followed by rail firms that receive about \$24.3 million.

Exhibit II-5 Revenue Impact by Category and Economic Sector*

SECTOR	REVENUE (\$1,000)
SURFACE TRANSPORTATION	
Rail	\$24,256
Truck	\$13,150
MARITIME SERVICES	
Terminal/Shipper	\$390,843
Towing/Barge	\$2,086
Pilots	\$679
Agents	\$443
Maritime Services/Freight Forwarders/Consolidators	\$1,682
Warehousing/Container Repair	\$0
Government	\$0
Marine Construction/Dredging	\$8,300
Other Tenants	\$8,891
PORT AUTHORITY	\$14,903
TOTAL	\$465,233

*Totals may not add due to rounding

Similarly, Exhibit II-6 shows the direct revenue impact by commodity. It should again be noted that the revenue received by related shippers/consignees from the sales of the products (value of the commodities) moving via the seaport terminals is not included, since product value is determined by the demand for the product, not the use of the cargo terminals.

Exhibit II-6 2015 Cargo Revenue Impacts by Commodity*

COMMODITY	REVENUE (\$1,000)
CONTAINER	\$8,345
COPPER	\$71,301
FLEX PIPE	\$30,030
KLB	\$43,773
PROJECT CARGO	\$3,405
REELS	\$30,047
STEEL COIL	\$1,907
STEEL PIPE	\$5,311
STEEL PLATE	\$149,668
O BREAKBULK	\$60
STONE	\$532
WOOD PELLETS	\$86,569
MOLASSES	\$731
NOT ALLOCATED	\$33,555
TOTAL	\$465,233

*Totals may not add due to rounding

As this exhibit indicates steel plate and other steel products combined generate the largest direct revenue impacts, followed wood pellets and copper.

5. PERSONAL EARNINGS IMPACT

The income impact is estimated by multiplying the average annual earnings (excluding benefits) of each port participant, i.e., truckers, steamship agents, pilots, towing firm employees, longshoremen, warehousemen, etc., by the corresponding number of direct jobs in each category. The individual annual earnings in each category multiplied by the corresponding job impact resulted in \$58.9 million in personal wage and salary earnings. It is important to emphasize that the average annual earnings of a Port-dependent job is about \$46,892, compared to the state-wide average annual income of \$42,860. These relatively high paying jobs will have a much greater economic impact in the local economy through stimulating induced jobs than will a job paying lower wages.

The impact of the re-spending of this direct income for local purchases is estimated using a personal earnings multiplier. The personal earnings multiplier is based on data supplied by the Bureau of Economic Analysis (BEA), Regional Input-Output Modeling System (RIMS II). The BEA estimates that for every one dollar earned by direct employees generated by activity at the cargo terminals, an additional \$1.97 of personal income and consumption expenditures would be created as a result of re-spending the income for purchases of goods and services produced locally. Hence, a personal earnings multiplier of \$2.97 was used to estimate the total income and consumption impact of \$115.8 million, inclusive of the re-spending effect. This additional re-spending of the direct income generated the 1,017 induced job impacts.

The 571 indirect job holders earned \$24.0 million in indirect wages and salaries. The 5,994 related shipper/consignees of the cargo moving via the Port received about \$202.8 million of personal income.

Therefore, the total personal income impact and consumption impact created by Port Panama City cargo activity is estimated at just under \$401.6 million.

6. TAX IMPACTS

State and local tax impacts are based on corporate and per employee tax burdens which are developed at the county, local and state jurisdictional levels. These tax per employee burdens are essentially tax indices that are used to allocate total taxes at each level of government to economic activity generated by the cargo terminals. To estimate the tax indices, a corporate tax burden and total taxes received at each governmental level in Florida were developed from the Tax Foundation, which reports total state and local taxes from all sources as a percent of total personal income.

Cargo activity supporting direct, induced and indirect impacts generated \$22.3 million of state, county and local taxes. As a result of the economic activity created by the related shipper/consignees, an additional \$26.0 million of state and local taxes were generated for a total cargo tax impact of \$48.2 million. The state of Florida receives approximately 53% of the tax revenues, while the local governments received 47%⁷ of the tax impact as illustrated in Exhibit II-7.

Exhibit II-7 Distribution of State and Local Tax Revenue*

⁷ “State and Local Government Finances by Level of Government and by State: 2012-13,” U.S. Census Bureau, 2013 *Annual Surveys of State and Local Government Finances*.

TAXES BY CATEGORY (\$1,000)	STATE	LOCAL	TOTAL
DIRECT, INDUCED, & INDIRECT	\$11,891	\$10,360	\$22,250
RELATED	<u>\$13,884</u>	<u>\$12,096</u>	<u>\$25,980</u>
TOTAL	\$25,775	\$22,456	\$48,231

*Totals may not add due to rounding

III. COMPARISON OF IMPACTS 2015-2012

The last economic impact study conducted for the Port of Panama City was conducted by Martin Associates in 2012. Since the last study, several structural and operational changes have occurred. With respect to the structural changes, the personal income multiplier for waterborne transportation, as estimated for the state of Florida by the U.S. Bureau of Economic Analysis, has fallen from 3.25 to 2.97. This reduction in the personal income multiplier reflects an increase in the savings rate per dollar of income earned (or conversely a decline in consumption per dollar), which has been observed throughout the country since the 2008 recession. This reduction results in a lower re-spending impact and personal consumption impact per dollar of personal income, in turn reducing the induced job impact for a dollar of income earned.

From an operational perspective, total tonnage handled by Panama City terminals grew by 612,000 tons. The overall growth in tonnage was driven by an increase in steel plates. Exhibit III-1 presents the changes in tonnages between 2012 and 2015.

Exhibit III-1 Change in Economic Impacts, 2012-2015

ECONOMIC IMPACT CATEGORIES	PORT PANAMA CITY 2015	PORT PANAMA CITY 2012	CHANGE
JOBS			
Direct	1,256	1,163	93
Induced	1,017	803	214
Indirect	571	648	-77
User Jobs	<u>5,994</u>	<u>8,248</u>	<u>-2,254</u>
Total Jobs	8,839	10,863	-2,024
PERSONAL INCOME (\$1,000)			
Direct	\$58,901	\$54,365	\$4,536
Re-Spending/Consumption	\$115,812	\$122,114	-\$6,302
Indirect	\$24,008	\$30,933	-\$6,925
User Income	<u>\$202,836</u>	<u>\$260,410</u>	<u>-\$57,574</u>
Total Income and Consumption	\$401,558	\$467,822	-\$66,264
VALUE OF ECONOMIC ACTIVITY (\$1,000)			
Business Services Revenue	\$465,233	\$544,095	-\$78,862
User Output	<u>\$772,075</u>	<u>\$898,373</u>	<u>-\$126,298</u>
Total Value of Economic Activity	\$1,237,309	\$1,442,468	-\$205,159
Local Purchases (\$1,000)	\$41,967	\$51,655	-\$9,688
STATE & LOCAL TAXES (\$1,000)			
Direct, Induced, and Indirect	\$22,250	\$19,082	\$3,168
User Taxes	<u>\$25,980</u>	<u>\$23,958</u>	<u>\$2,022</u>
Total State and Local Taxes	\$48,231	\$43,040	\$5,191

*Totals may not add due to rounding

Direct jobs increased by 93 jobs since 2012 while indirect jobs declined by 77, reflecting the decrease of local purchases by \$9.7 million. The decrease in local purchases was driven by the loss of a large tenant that was included in the 2012 study. Induced jobs increased by 214. Direct, induced, and indirect state and local taxes generated by port activity grew by nearly \$3.2 million while directly dependent business revenue declined by \$78.9 million, again reflecting the loss of a large tenant. Total economic value of Port Panama City maritime activity decreased from \$1.6 billion in 2012 to \$1.4 billion in 2015, while total jobs that are in some way related to the Port declined by 2,254 jobs. The decline in related user impacts is largely driven by a decline in both the volume and value of imported containerized metals. In 2012 a large amount of the containerized cargo handled by the port was being used by metal manufacturing industries. Container imports in 2015 are largely apparel destined for retailers.