

# The Local and Regional Economic Impacts of Port Tampa Bay



Prepared for:

*PORT TAMPA BAY*

1101 Channelside Drive

Tampa, FL 33602

[www.tampaport.com](http://www.tampaport.com)



Prepared by:

*MARTIN ASSOCIATES*

941 Wheatland Avenue, Suite 203

Lancaster, PA 17603

[www.martinassoc.net](http://www.martinassoc.net)

**November 17, 2016**

## TABLE OF CONTENTS

<b>I. INTRODUCTION AND OVERVIEW .....</b>	<b>1</b>
1. IMPACT DEFINITIONS .....	1
2. METHODOLOGY .....	3
2.1. <i>Data Collection</i> .....	3
2.2. <i>Direct Impacts</i> .....	4
2.3. <i>Induced Impacts</i> .....	4
2.4. <i>Indirect Impacts</i> .....	5
2.5. <i>Related Impacts</i> .....	5
2.6. <i>Tax Impacts</i> .....	5
3. SUMMARY OF RESULTS.....	6
<b>II. ECONOMIC IMPACTS OF MARINE CARGO ACTIVITY.....</b>	<b>9</b>
1. IMPACT STRUCTURE .....	11
1.1. <i>The Surface Transportation Sector</i> .....	11
1.2. <i>The Maritime Services Sector</i> .....	12
1.3. <i>Dependent Users (Shippers/Consignees) on Port Tampa Bay Marine Terminals</i> .....	13
1.4. <i>Related Users of Port Tampa Bay</i> .....	13
1.5. <i>Tampa Port Authority</i> .....	14
2. COMMODITIES INCLUDED IN THE ANALYSIS .....	14
3. MARITIME CARGO EMPLOYMENT IMPACTS .....	14
3.1. <i>Direct Marine Cargo Job Impacts</i> .....	15
3.1.1. <i>Job Impacts by Category</i> .....	16
3.1.2. <i>Direct Job Impacts by Commodity</i> .....	17
3.1.3. <i>Distribution of Direct Cargo Jobs by Place of Residence</i> .....	17
3.2. <i>Induced Jobs</i> .....	18
3.3. <i>Indirect Jobs</i> .....	18
3.4. <i>Related User Jobs</i> .....	18
4. MARINE CARGO ECONOMIC OUTPUT AND BUSINESS REVENUE IMPACTS.....	19
4.1 <i>Direct Business Revenue of Providing Services</i> .....	19
5. PERSONAL EARNINGS IMPACT .....	21
6. TAX IMPACTS.....	22
7. COMPARISON OF CARGO IMPACTS 2012-2015 .....	22
8. ECONOMIC CONTRIBUTION OF PHOSPHATIC FERTILIZER INDUSTRY .....	26
9. ECONOMIC CONTRIBUTION OF PETROLEUM DISTRIBUTION INDUSTRY .....	27
<b>III. ECONOMIC IMPACTS OF CRUISE SERVICE AT PORT TAMPA BAY .....</b>	<b>28</b>
1. ECONOMIC IMPACT STRUCTURE.....	28
2. IMPACT CATEGORIES.....	29
3. IMPACT SUMMARY .....	31
4. JOB IMPACTS.....	31
5. PERSONAL INCOME IMPACT .....	32
6. BUSINESS REVENUE .....	32
7. TAX REVENUE .....	32
8. COMPARISON OF CRUISE IMPACTS FY2012-FY2015.....	32
<b>IV. THE ECONOMIC IMPACT OF SHIP REPAIR OPERATIONS.....</b>	<b>35</b>
1. ECONOMIC IMPACT STRUCTURE.....	35
2. IMPACT SUMMARY .....	37
3. JOB IMPACT .....	37

4. PERSONAL INCOME IMPACT .....	38
5. BUSINESS REVENUE IMPACT .....	38
6. TAX IMPACT .....	38
7. COMPARISON OF SHIPYARD IMPACTS FY2012-FY2015 .....	38
<b>V. ECONOMIC IMPACT OF NON-MARITIME REAL ESTATE DEVELOPMENT.....</b>	<b>40</b>
1. JOB IMPACT .....	41
2. PERSONAL INCOME IMPACT .....	42
3. BUSINESS REVENUE IMPACT.....	42
4. TAX IMPACT .....	42
5. COMPARISON OF NON-MARITIME REAL ESTATE IMPACTS FY2012-FY2015 .....	42

## I. INTRODUCTION AND OVERVIEW

Martin Associates was retained by the Tampa Port Authority to measure the local and regional economic impacts generated by maritime activity at the public and private marine terminals at Port Tampa Bay. Economic impacts presented throughout this report include those generated at public facilities, including marine cargo that crosses the piers owned by the Tampa Port Authority as well as those generated by activity at the proprietary and private docks such as Mosaic, Kinder Morgan, Tampa Electric and Motiva. In addition to the economic impacts generated by the cargo activity at the public and private marine terminals, Martin Associates has also quantified the economic impacts of the cruise industry as well as the economic impact created by the shipyard activity within Tampa Bay and the impact of non-maritime real estate tenants of Port Tampa Bay, such as those located at the Channelside Bay Mall and World Trade Center.

The study employs methodology and definitions that have been used by Martin Associates to measure the economic impacts of seaport activity at more than 300 ports in the United States and Canada, and at the leading airports in the United States. It is to be emphasized that only measurable impacts are included in this study. The Martin Associates' approach to economic impact analysis is based on data developed through an extensive interview and telephone survey program of the firms participating in each of the lines of business operated by the Tampa Port Authority. Specific re-spending models have been developed for the Tampa area to reflect the unique economic and consumer profiles of the regional economy. To further underscore the defensibility of the study, standardized impact models, such as the MARAD Port Kit are not used. Instead, the resulting impacts reflect the uniqueness of the individual Port operations, as well as the surrounding regional economy.

At the outset, it is important to note that this study uses a different methodology than previous studies and may be difficult to directly compare to results of economic impact studies previously completed for the Tampa Port Authority by other consultants.

### **1. IMPACT DEFINITIONS**

The impacts are measured separately for Port Tampa Bay's cargo activity, cruise activity, ship repair activity and non-maritime real estate activity.

The impacts are measured in terms of:

- Jobs (direct, induced indirect and related shipper/consignee [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 Port Tampa Bay cargo, cruise and ship repair facilities were to cease. Direct jobs created by marine cargo activity at Port Tampa Bay's terminals are those jobs with the firms directly providing cargo handling and vessel services, including trucking companies, terminal operators and stevedores, members of the International Longshoremen's Association (ILA), teamsters, freight forwarders and customhouse brokers, vessel agents, pilots and tug assist companies, and shippers directly dependent upon the use of Port Tampa Bay, specifically the Florida phosphate and fertilizer industry. Direct jobs with the ship repair tenants include the employees of the ship yards as well as the employees of the subcontractors working on the repair jobs. Direct employees created by the cruise operations include the jobs with the firms providing the direct vessel services -- tugs, pilots, longshoremen, line handlers, local advertising firms, caterers, liquor wholesalers, linen companies, security firms, waste disposal firms, parking, local transportation -- as well as the firms providing services to the passengers on the vessels -- hotels, taxi cabs, restaurants and tour packages. Also included are impacts generated at Tampa International Airport due to the cruise passengers arriving via air.

***Induced jobs*** are jobs created in the Tampa area by the purchases of goods and services by those *individuals* directly employed by each of the Port's lines of business. These jobs are based on the local purchase patterns of Tampa area 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 Tampa area as the result of purchases for goods and services by the *firms* directly impacted by Port Tampa Bay activity, including the ship repair facilities, and the firms providing services to cargo and cruise passenger 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*** are jobs with shippers and consignees (exporters and importers) using the marine terminals for shipment and receipt of cargo. Tampa Port Authority's shippers and consignees are concentrated with the state's phosphate mining and fertilizer manufacturing industries.

- **Personal income impact** consists of wages and salaries received by those directly employed by Port activity, and includes a re-spending impact which measures the personal consumption activity in the Tampa area of those directly employed as the result of Port Tampa Bay. 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 marine cargo activity, ship repair activity, cruise operations, and miscellaneous activity at Port Tampa Bay facilities, film/television activity on Port property, private construction investment on Port property, and Tampa Port Authority administrative operations. **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 the Port Tampa Bay cargo, cruise, and ship repair activity.

## 2. METHODOLOGY

The impacts of Port Tampa Bay were estimated based on telephone interviews with 333 firms in the Tampa area (which includes 306 interviews of maritime-related businesses and an additional 27 interviews with non-maritime real estate tenants). This represents the 99% of the universe of the marine cargo, cruise and ship repair firms, mixed-use real estate tenants and service providers (with the exception of trucking and freight forwarding firms) in the Tampa area port community, as defined in the “2015 Tampa Port Authority Directory” as well as the tenant lists provided by Port Tampa Bay at the outset of the study. It is to be emphasized that a 97% response rate was achieved from these firms located in the Port directory and Port tenant listings. The direct impacts are measured at the firm level of detail, and aggregated to develop the impacts for each of the Port’s lines of business. Each firm surveyed provided Martin Associates with detailed employment levels (both full time and part time), annual payroll, local purchases and the geographical jurisdiction of where the employees reside.

### 2.1. Data Collection

The impacts of Port Tampa Bay presented in this report were estimated based on telephone interviews with 333 firms in the Tampa area. This represents the universe of the cargo businesses (with the exception of trucking and freight forwarding firms) operating in the Tampa area and along Tampa 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 Tampa Bay. 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 Port Tampa Bay and private cargo terminals to estimate the FY2015 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 consumption data for Tampa Metropolitan Area residents, 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.

***Induced jobs are not estimated at lower levels of purchasing rounds (after the wholesale round) since it is not possible to trace with a sufficient degree of accuracy, geographically, where purchases at the remaining levels occur. However, about 80 percent of the consumption will likely occur at the first two rounds of purchases, which are most likely local retail and wholesale purchases.***

## 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 the marine cargo terminals along the Tampa 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 333 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 Tampa 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 Tampa 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.<sup>1</sup>

## 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 tax burdens (developed by the Tax Foundation for the state of Florida) are applied to the total direct, induced and indirect income impacts to estimate total state and local taxes created by activity at Port Tampa Bay.

---

<sup>1</sup> 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 summarizes the results of the economic impact analysis of Port Tampa Bay.

Exhibit I-1  
Economic Impact of Port Tampa Bay by Line of Business - FY2015

CATEGORY	CARGO	CRUISE	SHIPYARD	REAL ESTATE	TOTAL
<b>JOBS</b>					
DIRECT	12,722	703	1,480	1,135	16,040
INDUCED	11,161	350	953	474	12,937
INDIRECT	8,939	489	1,670	966	12,064
RELATED USER JOBS	<u>43,994</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>43,994</u>
<b>TOTAL JOBS</b>	<b>76,815</b>	<b>1,541</b>	<b>4,102</b>	<b>2,575</b>	<b>85,034</b>
<b>PERSONAL INCOME (1,000)</b>					
DIRECT	\$746,865	\$18,877	\$71,525	\$43,713	\$880,979
INDUCED	\$1,468,486	\$31,632	\$86,717	\$38,622	\$1,625,457
INDIRECT	\$393,683	\$16,775	\$58,453	\$45,811	\$514,722
RELATED USER INCOME	<u>\$2,074,864</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>\$2,074,864</u>
<b>TOTAL PERSONAL INCOME</b>	<b>\$4,683,898</b>	<b>\$67,283</b>	<b>\$216,695</b>	<b>\$128,146</b>	<b>\$5,096,023</b>
<b>VALUE OF ECONOMIC ACTIVITY (1,000)</b>					
BUSINESS SERVICES REVENUE	\$1,404,234	\$347,522	\$203,308	\$284,749	\$2,239,812
RELATED USER OUTPUT	<u>\$13,370,045</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>\$13,370,045</u>
<b>TOTAL VALUE OF ECONOMIC ACTIVITY</b>	<b>\$14,774,279</b>	<b>\$347,522</b>	<b>\$203,308</b>	<b>\$284,749</b>	<b>\$15,609,858</b>
<b>LOCAL PURCHASES (1,000)</b>	<b>\$792,513</b>	<b>\$29,142</b>	<b>\$147,509</b>	<b>\$77,376</b>	<b>\$1,046,540</b>
<b>STATE &amp; LOCAL TAXES (1,000)</b>					
DIRECT, INDUCED AND INDIRECT	\$240,384	\$9,624	\$23,379	\$12,830	\$286,216
RELATED USER TAXES	<u>\$325,954</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>\$325,954</u>
<b>TOTAL STATE AND LOCAL TAXES</b>	<b>\$566,338</b>	<b>\$9,624</b>	<b>\$23,379</b>	<b>\$12,830</b>	<b>\$612,171</b>

The vessel and cargo activity at the cargo and cruise terminals, shipyards and non-maritime real estate interests at the Port Tampa Bay generated the following estimated impacts in the regional economy in FY2015:

In FY2015, the cargo, cruise shipyard and non-maritime real estate activity at Port Tampa Bay supported 85,034 jobs in the state of Florida. Of these jobs, 16,040 jobs are directly created by port activities, while another 12,937 induced jobs are generated in the Tampa area as a result of local purchases made by those directly employed due to Port Tampa Bay activity. In addition, there are 12,064 indirect jobs supported in the Tampa area as the result of \$1.0 billion of local purchases by directly dependent firms. In addition, the cargo moving via Port Tampa Bay terminals supports 43,994 related jobs throughout the state of Florida. The majority of these jobs are associated with the services related in support of fertilizer production.

The 16,040 direct jobs received \$881.0 million of direct wage and salary income, for average earnings of \$54,920 per direct employee. As a result of local purchases with this \$881.0 million of direct wages and salaries, an additional \$1.6 billion of income and local consumption expenditures were created in the state of Florida. It is this re-spending impact that supported the 12,937 induced jobs.<sup>2</sup> The indirect job holders received \$514.7 million in personal income. In total, \$5.1 billion of personal income was supported by Port Tampa Bay operations, including the nearly \$2.1 billion received by those employed with the related users of the Port.

Local businesses received \$2.2 billion of sales revenue from providing services to the ocean cargo and cruise activity, shipyard activity and mixed-use real estate activity. This does not include the value of the cargo moving via the Port. The cargo activity at Port Tampa Bay created an additional \$13.4 billion 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 Tampa Bay is included.

As a result of the activity at Port Tampa Bay, a total of \$612.2 million of state and local tax revenue was generated.

***The total economic value of the cargo, cruise, shipyard and real estate activity at Port Tampa Bay 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 \$17.2 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 \$2.2 billion of direct business revenue received from businesses providing cargo and vessels services at the port and moving the cargo to and from inland destinations and origins; the \$1.6 billion of re-spending and local personal consumption impact; and the \$13.4 billion of value of output supported by the related users. This \$13.4 billion includes the revenue and value added at each stage of production, including support firms providing goods and services during the production and logistics chain of the exports. The total economic value 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 \$13.4 billion 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 \$2.2 billion of direct business revenue and the \$1.6 billion of re-spending and local

---

<sup>2</sup> 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 individuals that are made within the state. Hence, the average salary would be overestimated.

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 Tampa Bay's public and private marine terminals.

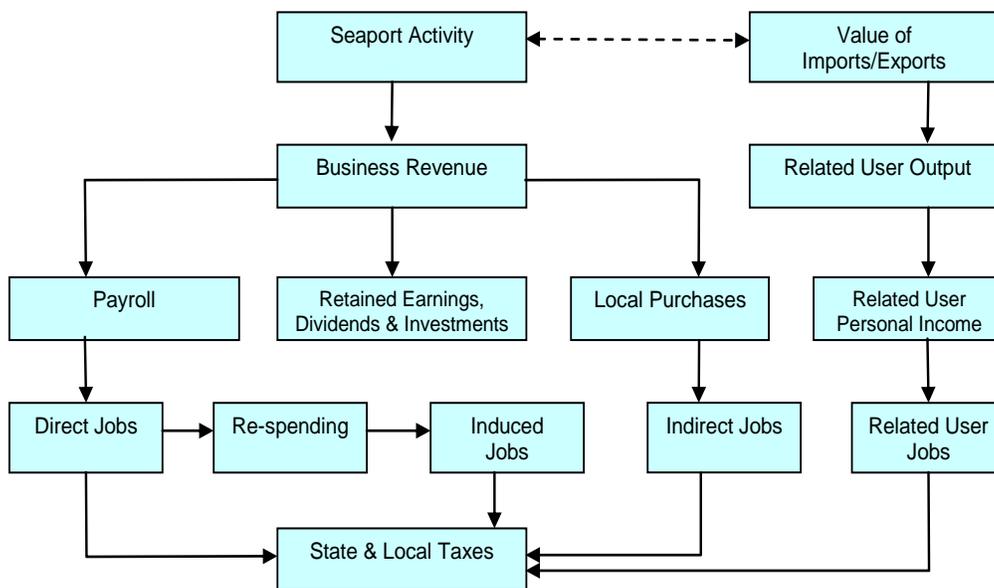
The last economic impact study of Port Tampa Bay was conducted in FY2012. This study was conducted by Martin Associates and uses the same methodology as the current study, and therefore, direct comparisons can be made. Between FY2012 and FY2015, cargo activity at the Port's public and private marine terminals increased by 3.4 million tons. As a result, the overall economic impact of the port operations increased, specifically, direct, induced, indirect and related jobs grew by 4,818 jobs. In addition, the total economic value of the Port grew from \$16.5 billion to \$17.2 billion. It is to be noted that since the 2012 study, Martin Associates has begun to include re-spending (as described above) in the total economic value figure. The commonly referenced figure by the Port of \$15.1 billion of economic output for 2012 does not include the re-spending portion of the total economic value. Therefore, for an apples-to-apples comparison, inclusive of the re-spending portion, the 2012 \$15.1 billion value has been adjusted in this report to \$16.5 billion.

The balance of the report details the impacts created within each line of business – marine cargo, cruise, ship yards and non-maritime real estate development.

**II. ECONOMIC IMPACTS OF MARINE 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 Tampa Bay's public and private 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 Tampa Bay 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 Tampa Bay 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 job impact*** -- 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. Martin Associates took special care 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 user job impact*** -- 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 and regional 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 phosphate mining and fertilizer production, containerized cargo, steel activity, as well as aggregates and limestone. It is important to note that these users (shippers/consignees) also use other ports and are not completely dependent upon Port Tampa Bay. The level of employment with these firms is driven by the demand for the firms' products, not because Port Tampa Bay is used. Therefore, these related jobs are not dependent upon port activity, and their degree of dependence on Port Tampa Bay is much less than the other components of the job impact.<sup>3</sup>

---

<sup>3</sup> The related jobs, income, value of output and taxes should not be used when evaluating the incremental economic impacts

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 Tampa region. 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. IMPACT STRUCTURE

The five types of economic impacts are created throughout various business sectors of the state and local economies. Specifically, five distinct economic sectors are impacted as a result of activity at the marine terminals. These are the:

- Surface Transportation Sector;
- Maritime Services Sector;
- Dependent Users;
- Related Users; and
- Tampa Port Authority.

Within each sector, various types of firms 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.

#### 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 marine terminals and the inland origins and destinations. Also included is the pipeline transportation of petroleum products received at the Port.

---

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.

---

## 1.2. The Maritime Services Sector

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

- Cargo marine 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:

- Cargo Marine Transportation - Participants in this category are involved in arranging for inland and water transportation for export or import freight. The freight forwarder/customshouse broker is the major participant in this category. The freight forwarder/customshouse 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 customshouse 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 pilot services and towing, for medical and dental care of the crew, and for ship supplies. 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;
  - Pilots - assist in navigating the vessels to and from Port Tampa Bay's marine terminals located within the Port District;
  - Bunkering firms - provide fuel to the vessels;
  - Marine surveyors - inspect the vessels and the cargo;
  - Shipyards/marine construction firms - provide repairs (either emergency or scheduled) 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 - include members of the International Longshoremen's Association (ILA), as well as non-ILA dockworkers that are involved in the loading and unloading of cargo from the vessels, as well as handling the cargo prior to loading and after unloading;
  - Stevedoring firms - manage the longshoremen and cargo-handling activities. Stevedoring services at Tampa Port Authority terminals are provided by private stevedoring companies;
  - Marine terminal operators - are often stevedoring firms who operate the maritime terminals where cargo is loaded and off-loaded;
  - Warehouse operators - store cargo after discharge or prior to loading and consolidate cargo units into shipment lots.
- 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. This involves employees within Customs and Border Patrol, Bureau of Immigration, U.S. Department of Agriculture, U.S. Coast Guard and the Army Corps of Engineers. These services are provided by the government offices located in the Tampa area.

### 1.3. Dependent Users (Shippers/Consignees) on Port Tampa Bay Marine Terminals

These jobs are with the dependent tenants and terminal, mining and manufacturing operations such as Mosaic Company and Tampa Electric that rely on the receipt or shipment of product and materials over Port Tampa Bay facilities to perform operations.

### 1.4. Related Users of Port Tampa Bay

Related job impacts consist of jobs with related shippers/consignees shipping and receiving cargo through the public and private marine terminals at Port Tampa Bay. The majority of these users are with the state's fertilizer and phosphate industry, and include industries supporting the state fertilizer industry. Only the user industry activity that can be linked to the movement of cargo (either raw materials or finished products) through Port Tampa Bay is considered in this related user impact.

### 1.5. Tampa Port Authority

The Tampa Port Authority includes those individuals employed whose purpose is to oversee port activity at Tampa Port Authority-owned marine terminals including Hooker's Point, Port Ybor and Port Sutton.

## 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 and automobiles require a large amount of paved, open storage space, while certain types of break bulk cargoes such as paper 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 marine terminals:

- Containers;
- Steel;
- Scrap;
- Citrus pellets;
- Phosphatic fertilizer products;
- Coal;
- Petroleum products;
- Bulk juice;
- Miscellaneous break bulk cargo;
- Other dry bulk (e.g. aggregates, cement and gypsum); and
- Other liquid bulk.

## 3. MARITIME CARGO EMPLOYMENT IMPACTS

The employment generated by maritime cargo activity at the public and private marine terminals within Port Tampa Bay Port District is estimated. The section is organized as follows:

- First, the total employment that is in some way related to the activities at the public and private marine terminals is estimated;
- 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, ILA/dockworkers, freight forwarders/customhouse brokers, 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 marine activity at the public and private marine terminals are described.

It is estimated that 76,815 jobs are directly or indirectly generated by port activities at the public and private marine terminals within Port Tampa Bay. Of the 76,815 jobs:

- 12,722 jobs are directly generated by activities at the public and private marine terminals and if such activities should cease, these jobs would be discontinued over the short term.
- 11,161 induced jobs are supported by the local purchases of the 12,722 individuals directly generated by port activity at the marine terminals. An additional 8,939 indirect jobs were supported by \$792.5 million of purchases in the local and regional economy by firms providing direct cargo handling and vessel services.
- 43,994 jobs are related to cargo exported and imported via the public and private marine terminals. These jobs are with related shippers/consignees of Port Tampa Bay, and are mostly concentrated with jobs in the state's fertilizer and phosphate industry.

### 3.1. Direct Marine Cargo Job Impacts

In FY2015, about 37.4 million tons of waterborne cargo moved via the Port Tampa Bay public and private marine terminals considered in the analysis. As a result of this activity, 12,722 full-time

equivalent (FTE) jobs were directly created<sup>4</sup>. 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 12,722 direct jobs by type of job. The exhibit indicates that the majority of direct jobs (6,019) are with tenants/dependent users directly dependent upon the movement of cargo via the Port. In addition, there are 2,892 full-time equivalent truck drivers supported by port activity, followed by 1,147 jobs with barge operations at Port Tampa Bay.

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

SECTOR	DIRECT JOBS
SURFACE TRANSPORTATION	
RAIL	280
TRUCK	2,892
MARITIME SERVICES	
TERMINAL EMPLOYEES	927
ILA/DOCKWORKERS	136
TOWING	87
PILOTS	24
AGENTS	43
MARITIME SERVICES	346
WAREHOUSING/CONSOLIDATORS/FORWARDERS	287
GOVERNMENT	170
MARINE CONSTRUCTION/DREDGING	126
BARGE	1,147
TENANTS/DEPENDENT USERS	6,019
BANKING/INSURANCE/LAW	24
PORT AUTHORITY	215
<b>TOTAL</b>	<b>12,722</b>

---

<sup>4</sup> Jobs are measured in terms of full-time worker equivalents. If a worker is employed only 50 percent of the time by activity at Port Tampa Bay's public and private marine terminals, then this worker is counted as .5 jobs.

### 3.1.2. Direct Job Impacts by Commodity

Most of the 12,722 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 and employees with marine construction and ship repair cannot be identified with a specific commodity. As a result, employment in these three groups (which totaled 571) 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

<b>COMMODITY</b>	<b>DIRECT JOBS</b>
CONTAINERS	97
STEEL	210
SCRAP	87
CITRUS PELLETS	26
OTHER BREAKBULK	86
FERTILIZER PRODUCTS	7,962
COAL	427
OTHER DRY BULK	719
PETROLEUM PRODUCTS	2,433
BULK JUICE	27
OTHER LIQUID BULK	77
NOT ALLOCATED	571
	<b>12,722</b>

The movement of phosphate rock and fertilizer products creates the largest number of direct jobs, followed by the movement and distribution of finished petroleum products. The majority of the remaining direct jobs are supported by the movement of coal and other dry bulk cargo (such as cement, limestone, aggregates and granite).

### 3.1.3. Distribution of Direct Cargo Jobs by Place of Residence

To underscore the geographic scope of the impacts generated by the public and private marine terminals, Exhibit II-4 presents the distribution of the 12,722 direct jobs by place of residence. The geographic residential analysis is based on the results of the interviews with firms during the data collection process. As this exhibit indicates, 28.2% of the direct job holders reside in the City of Tampa, while nearly another 31% live elsewhere in Hillsborough County. Therefore, about 60% of the 12,722 direct job holders live in Hillsborough County. Also, approximately 33% live in Polk County reflecting

the jobs generated by the mines and manufacturing plants involved in the region’s phosphatic fertilizer industry.

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

<b>JURISDICTION</b>	<b>SHARE</b>	<b>DIRECT JOBS</b>
CITY OF TAMPA	28.2%	3,589
HILLSBOROUGH COUNTY	31.3%	3,979
POLK COUNTY	33.4%	4,250
MANATEE COUNTY	2.6%	332
PINELLAS COUNTY	2.5%	321
OTHER FLORIDA	2.0%	250
<b>TOTAL</b>	<b>100.0%</b>	<b>12,722</b>

### 3.2. Induced Jobs

The 12,722 directly employed individuals, due to activity at the public and private marine terminals 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, 11,161 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 described above, the dependent firms providing the services also make local purchases for goods and services. These local purchases by the firms dependent upon the public and private marine facilities generate additional indirect jobs in the local economy. Based on interviews, these firms made \$792.5 million of local and in-state purchases in FY2015. These direct local purchases created an additional 8,939 indirect jobs in the local economy.

### 3.4. Related User 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 43,994 jobs with regional steel processing and

construction firms are related to cargo moving via the Port Tampa Bay marine cargo terminals. It is to be emphasized that these jobs are only related jobs, not jobs dependent upon Port Tampa Bay.

#### 4. MARINE CARGO ECONOMIC OUTPUT AND BUSINESS REVENUE IMPACTS

*The total economic value of the marine cargo and vessel activity at Port Tampa Bay 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 \$16.3 billion.* This includes the \$1.4 billion of direct business revenue received from businesses providing cargo and vessels services at the port and moving the cargo to and from inland destinations and origins; \$1.5 billion of re-spending and local personal consumption impact; and the \$13.4 billion of value of output supported by the related users. This \$13.4 billion 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 \$13.4 billion 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 \$1.4 billion of direct business revenue and the \$1.5 billion 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 Tampa Bay public and private cargo marine terminals.

##### 4.1 Direct Business Revenue of Providing Services

The balance of the discussion focuses on the \$1.4 billion of direct business revenue generated from the provision of services to the cargo, vessels and barges handled at Port Tampa Bay cargo marine terminals.

Exhibit II-5 shows the distribution of this revenue impact by category and economic sector. As this exhibit indicates trucking firms receive the largest share of the total revenue impact, \$441.7 million, followed by line haul barge operators that receive about \$376.2 million.

Exhibit II-5  
Direct Revenue Generated by Port Cargo Activity

SECTOR	REVENUE (1,000)
SURFACE TRANSPORTATION	
RAIL	\$141,237
TRUCK	\$441,739
PIPELINE	\$1,190
MARITIME SERVICES	
TERMINAL EMPLOYEES	\$139,459
TOWING	\$5,464
PILOTS	\$3,220
AGENTS	\$3,963
MARITIME SERVICES	\$89,799
WAREHOUSING/CONSOLIDATORS/FORWARDERS	\$58,957
GOVERNMENT	NA
MARINE CONSTRUCTION/DREDGING	\$73,839
BARGE	\$376,216
TENANTS/DEPENDENT USERS	\$10,800
BANKING/INSURANCE	\$7,080
PORT AUTHORITY	<u>\$51,269</u>
<b>TOTAL</b>	<b>\$1,404,234</b>

Similarly, Exhibit II-6 shows the direct revenue impact by commodity. It should again be noted that the revenue received by 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  
Cargo Revenue Impacts by Commodity

<b>COMMODITY</b>	<b>REVENUE (1000)</b>
CONTAINERS	\$15,732
STEEL	\$24,218
SCRAP	\$4,673
CITRUS PELLETS	\$2,514
OTHER BREAKBULK	\$10,659
FERTILIZER PRODUCTS	\$500,881
COAL	\$28,492
OTHER DRY BULK	\$130,273
PETROLEUM PRODUCTS	\$532,633
BULK JUICE	\$3,284
OTHER LIQUID BULK	\$7,886
NOT ALLOCATED	\$142,988
	<b>\$1,404,234</b>

As this exhibit indicates petroleum products generate the largest direct revenue impacts, followed phosphate and fertilizer products.

## 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 \$746.9 million in personal wage and salary earnings. It is important to emphasize that the average annual earnings of a Port-dependent job is about \$54,920. 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 \$1.5 billion,

inclusive of the re-spending effect. This additional re-spending of the direct income generated the 11,161-induced job impacts.

The 8,939 indirect job holders earned \$393.7 million in indirect wages and salaries. The 43,994 related users of the cargo moving via Port Tampa Bay received about \$2.1 billion of personal income.

Therefore, the total personal income impact and consumption impact created by Port Tampa Bay cargo activity is estimated at nearly \$4.7 billion.

## 6. TAX IMPACTS

State and local tax impacts are based on 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 per employee tax indices, total taxes received at each governmental level in Florida was 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 \$240.4 million of state, county and local taxes. As a result of the economic activity created by the related users, an additional \$326.0 million of state and local taxes were generated for a total cargo tax impact of \$566.3 million. The state of Florida receives approximately 55.6% of the tax revenues, while the local governments received 44.4%<sup>5</sup> of the tax impact as illustrated in Exhibit II-7

Exhibit II-7  
State and Local Taxes by Category

<b>TAXES BY CATEGORY (1,000)</b>	<b>STATE</b>	<b>LOCAL</b>	<b>TOTAL</b>
DIRECT, INDUCED & INDIRECT	\$ 113.0	\$ 127.4	\$ 240.4
RELATED USER	\$ 153.2	\$ 172.8	\$ 326.0
<b>TOTAL</b>	<b>\$ 266.2</b>	<b>\$ 300.2</b>	<b>\$ 566.3</b>

## 7. COMPARISON OF CARGO IMPACTS 2012-2015

The last economic impact study conducted for Port Tampa Bay was completed by Martin Associates in 2013, using FY2012 cargo data. 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 3.27 to 2.96. This reduction in the personal income multiplier reflects an

---

<sup>5</sup> “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*.

increase in the savings rate per dollar of income earned (or conversely a decline in consumption per dollar), which has occurred 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.

Secondly, the results of a new Economic Census for 2012 were released by the U.S. Bureau of Census. In the previous study (FY2012), the 2007 Economic Census was used to estimate induced impacts. The jobs to sales ratios in the updated Economic Census data are smaller than those estimated in the 2007 Economic Census. The lower jobs per sales ratios, which are used to translate the local purchases by the direct employees into induced jobs, add to the decline in induced jobs resulting from the lower income multiplier. The reduced jobs to sales ratios in the Economic Census reflect both an increase in overall productivity in the U.S., as well as the jobless recovery from the recession of 2008 and 2009. As is well documented in economic literature, more jobs have been filled with part time employees and some jobs have not been refilled.<sup>6</sup> As a result of these structural shifts, the induced job impacts per dollar of income are lower in this most recent study compared to the 2008 economic impacts.

From an operational perspective, total tonnage handled by Port Tampa Bay terminals grew by about 3.5 million tons, or approximately 10.2%. The overall growth in tonnage was driven by dry bulk commodities and petroleum products. Exhibit II-8 presents the changes in tonnages between FY2012 and FY2015.

---

<sup>6</sup> [www.economist.com/blogs/freexchange/2012/08/americas-jobless-recovery](http://www.economist.com/blogs/freexchange/2012/08/americas-jobless-recovery)

Exhibit II-8  
Change in Tonnage by Commodity, FY2012-FY2015

<b>Commodity</b>	<b>2012</b>	<b>2015</b>	<b>Change</b>
<b>Dry Bulk</b>			
Coal	2,112,690	2,499,783	387,093
Limestone	924,475	2,267,885	1,343,410
Phosphate/Chemical	6,801,342	7,940,144	1,138,802
Other Dry Bulk	<u>2,032,365</u>	<u>1,966,188</u>	<u>(66,177)</u>
<i>Total Dry Bulk</i>	<i>11,870,872</i>	<i>14,674,000</i>	<i>2,803,128</i>
<b>Liquid Bulk</b>			
Petroleum Products	15,536,175	16,418,704	882,529
Ammonia	1,835,289	1,695,115	(140,174)
Liquid Sulphur	3,096,972	3,038,664	(58,308)
Other Liquid Bulk	<u>326,610</u>	<u>375,084</u>	<u>48,474</u>
<i>Total Liquid Bulk</i>	<i>20,795,046</i>	<i>21,527,567</i>	<i>732,521</i>
<b>General Cargo</b>			
Containerized	341,787	487,410	145,623
Scrap	656,841	228,419	(428,422)
Steel	150,594	358,405	207,811
Other General Cargo	<u>92,424</u>	<u>98,489</u>	<u>6,065</u>
<i>Total General Cargo</i>	<i>1,241,646</i>	<i>1,172,723</i>	<i>(68,923)</i>
<b>Total Cargo</b>	<b>33,907,564</b>	<b>37,374,290</b>	<b>3,466,726</b>

As a result of the growth in cargo, the dependent direct jobs increased by 1,149. When the non-dependent, related jobs are included, total jobs increased by more than 3,300 jobs. Exhibit II-9 shows the change in impacts between 2012 and 2015.

Exhibit II-9  
Change in Cargo Economic Impacts, FY2012-FY2015

CATEGORY	Cargo 2012	Cargo 2015	Cargo Change
<b>JOBS</b>			
DIRECT	11,573	12,722	1,149
INDUCED	12,695	11,161	(1,534)
INDIRECT	8,754	8,939	185
RELATED USER JOBS	<u>40,455</u>	<u>43,994</u>	<u>3,539</u>
<b>TOTAL JOBS</b>	<b>73,478</b>	<b>76,815</b>	<b>3,337</b>
<b>PERSONAL INCOME (1,000)</b>			
DIRECT	\$566,481	\$746,865	\$180,384
INDUCED	\$1,272,429	\$1,468,486	\$196,057
INDIRECT	\$415,785	\$393,683	(\$22,102)
RELATED USER INCOME	<u>\$1,622,094</u>	<u>\$2,074,864</u>	<u>\$452,770</u>
<b>TOTAL PERSONAL INCOME</b>	<b>\$3,876,790</b>	<b>\$4,683,898</b>	<b>\$807,108</b>
<b>VALUE OF ECONOMIC ACTIVITY (1,000)</b>			
BUSINESS SERVICES REVENUE	\$1,258,574	\$1,404,234	\$145,660
RELATED USER OUTPUT	<u>\$13,184,087</u>	<u>\$13,370,045</u>	<u>\$185,958</u>
<b>TOTAL VALUE OF ECONOMIC ACTIVITY</b>	<b>\$14,442,661</b>	<b>\$14,774,279</b>	<b>\$331,618</b>
<b>LOCAL PURCHASES (1,000)</b>	<b>\$778,744</b>	<b>\$792,513</b>	<b>\$13,769</b>
<b>STATE &amp; LOCAL TAXES (1,000)</b>			
DIRECT, INDUCED AND INDIRECT	\$209,687	\$240,384	\$30,697
RELATED USER TAXES	<u>\$150,855</u>	<u>\$325,954</u>	<u>\$175,099</u>
<b>TOTAL STATE AND LOCAL TAXES</b>	<b>\$360,541</b>	<b>\$566,338</b>	<b>\$205,797</b>

Direct jobs increased by 1,149 jobs since FY2012 and indirect jobs grew by 185, reflecting the increase of \$13.8 million of local purchases. Induced jobs decreased by 1,534 reflecting the decline in the income multiplier and jobs per sales ratios previously mentioned. Direct, induced, and indirect state and local taxes generated by port activity grew by \$30.7 million while directly dependent business revenue grew by \$145.7 million. This includes the revenue received from providing services to the vessels and cargo handled at the Port, as well as revenue generated by the port dependent tenants. Total economic value of Port Tampa Bay cargo maritime activity increased from \$15.7 billion in FY2012 to \$16.2 billion in FY2015, while total jobs that are in some way related to the Port grew by 3,337 jobs. The total value of economic activity includes the direct revenue generated by the marine terminals, the revenue generated by the port dependent shippers/consignees, the re-spending impact of personal income, and the value of output of the related shippers/consignees using the Port.

**8. ECONOMIC CONTRIBUTION OF PHOSPHATIC FERTILIZER INDUSTRY**

The Port Tampa Bay serves as the conduit between the large presence of phosphate mines and fertilizer production facilities in Central Florida, specifically Hillsborough, Polk and Manatee counties, and consumers both internationally and domestically. The regional phosphatic fertilizer production industry accounts for nearly 13 million tons (roughly 35%) of cargo through Port Tampa Bay. Key commodities handled at the Port’s public and private docks include raw phosphate rock, liquid sulphur, liquid ammonia and processed (finished) phosphatic fertilizers.

Exhibit II-10  
Contribution of Economic Activity of Phosphatic Fertilizer Industry

CATEGORY	Fertilizer Products
JOBS	
DIRECT	7,962
INDUCED	7,446
INDIRECT	3,188
RELATED USER JOBS	<u>26,369</u>
<b>TOTAL JOBS</b>	<b>44,965</b>
PERSONAL INCOME (1,000)	
DIRECT	\$508,829
INDUCED	\$1,000,460
INDIRECT	\$140,424
RELATED USER INCOME	<u>\$1,408,087</u>
<b>TOTAL PERSONAL INCOME</b>	<b>\$3,057,800</b>
VALUE OF ECONOMIC ACTIVITY (1,000)	
BUSINESS SERVICES REVENUE	\$500,881
RELATED USER OUTPUT	<u>\$10,725,937</u>
<b>TOTAL VALUE OF ECONOMIC ACTIVITY</b>	<b>\$11,226,818</b>
<b>LOCAL PURCHASES (1,000)</b>	<b>\$282,684</b>
STATE & LOCAL TAXES (1,000)	
DIRECT, INDUCED AND INDIRECT	\$147,739
RELATED USER TAXES	<u>\$239,383</u>
<b>TOTAL STATE AND LOCAL TAXES</b>	<b>\$387,122</b>

This movement of phosphate rock and fertilizer products by port shippers and consignees such as Mosaic creates about 44,965 jobs generating nearly \$3.1 billion in personal income in the regional economy. In addition, the phosphatic fertilizer industry generates nearly \$500.9 million in revenue to Port Tampa Bay and an additional \$10.7 billion in related output resulting in over \$12.2 billion in total economic value to the region as illustrated in Exhibit II-10.

**9. ECONOMIC CONTRIBUTION OF PETROLEUM DISTRIBUTION INDUSTRY**

Nearly 16.4 million ton of petroleum products were handled at Port Tampa Bay in 2015, which comprises nearly 44% of the total cargo handled at the Port. While there are no refinery operations in Tampa, the Port is a key distribution point of clean (refined) product (including gasoline, diesel, aviation fuels and lube oils) into Central Florida. The inbound petroleum products are handled through both public and private docks (including Citgo Petroleum, Chevron, Marathon Petroleum, Motiva and Kinder Morgan CFPL) and distributed by truck and pipeline in the Tampa region as well as Orlando and Fort Meyers areas. Exhibit II-11 presents the impacts of the petroleum distribution industry.

Exhibit II-11  
Contribution of Economic Activity of Petroleum Industry

CATEGORY	Petroleum Products
<b>JOBS</b>	
DIRECT	2,433
INDUCED	1,793
INDIRECT	3,391
RELATED USER JOBS	<u>1,486</u>
<b>TOTAL JOBS</b>	<b>9,102</b>
<b>PERSONAL INCOME (1,000)</b>	
DIRECT	\$112,148
INDUCED	\$220,506
INDIRECT	\$149,326
RELATED USER INCOME	<u>\$7,983</u>
<b>TOTAL PERSONAL INCOME</b>	<b>\$489,963</b>
<b>VALUE OF ECONOMIC ACTIVITY (1,000)</b>	
BUSINESS SERVICES REVENUE	\$532,633
RELATED USER OUTPUT	<u>\$139,590</u>
<b>TOTAL VALUE OF ECONOMIC ACTIVITY</b>	<b>\$672,223</b>
<b>LOCAL PURCHASES (1,000)</b>	<b>\$300,604</b>
<b>STATE &amp; LOCAL TAXES (1,000)</b>	
DIRECT, INDUCED AND INDIRECT	\$47,413
RELATED USER TAXES	<u>\$2,223</u>
<b>TOTAL STATE AND LOCAL TAXES</b>	<b>\$49,636</b>

Over 9,100 jobs and \$490 million of local income are generated by the movement of petroleum products over the docks at Port Tampa Bay. In all, the petroleum industry contributes \$893 million in total economic value to the region.

### III. ECONOMIC IMPACTS OF CRUISE SERVICE AT PORT TAMPA BAY

In FY2015, 206 cruise vessels called Port Tampa Bay, carrying 867,114 passengers. It is important to note that all but one of these cruise calls are made by homeported vessels in contrast to in-transit calls. The key difference between an in-transit call and a homeport call is the fact that a vessel home porting will take on passengers and supplies at Port Tampa Bay, while a vessel making an intermediate in-transit call typically does not take on or discharge passengers and the vessel does not take on supplies from local chandlers and caterers, as well as use local services such as advertising, maintenance and repair, linen services, etc. Hence, a call by a homeported vessel will generate a greater economic impact than an in-transit call.

To measure the economic impact of the cruise service, Martin Associates developed a cruise impact model for Port Tampa Bay. The model can be used to test the sensitivity of the impacts to changes in the percent of passengers flying into the Tampa International Airport versus the percent of passengers driving to the Port, the share of passengers staying in hotels prior to and after the cruise, the local expenditures by passengers while in hotels either before or after the cruise, and the local purchases by the cruise lines for food, liquor, and other supplies and services. The impact of changes in the mix of the size of vessels and the number of cruises by size of vessel and itinerary can also be evaluated using the model.

#### **1. ECONOMIC IMPACT STRUCTURE**

Cruise service related to the home porting of a vessel contributes to the local and regional economies by providing employment and income to individuals, tax revenues to local and state governments, and revenue to businesses engaged in providing operational services and supplies to the vessels and passengers. The flow of cruise industry-generated economic impacts throughout an economy creates four separate and non-additive types of impacts. These four types of impacts are:

- ***Employment Impact*** - the number of full-time equivalent jobs generated by cruise activity at Port Tampa Bay. This consists of jobs directly generated by the home porting of cruise vessels as well as induced jobs, or jobs created in the Tampa area due to the purchase of goods and services by those individuals directly dependent upon cruise activity.
- ***Income Impact*** - the level of earnings associated with the jobs created by cruise activity, and adjusted to reflect re-spending throughout the economy.
- ***Revenue Impact*** - the sales generated by firms engaged in supplying services and materials to the vessels while in port, as well as firms in the Tampa area visitor industry that supply services to cruise passengers staying in hotels before and after the cruise. The value of the cruise tickets is not included as a revenue impact for purposes of this analysis.

- **Tax Impacts** – includes the state and local tax revenues generated by cruise activity. These are taxes paid by individuals and firms directly dependent upon the cruise activity.

## 2. IMPACT CATEGORIES

The impacts are generated by firms throughout many sectors of the local and regional economy. Separate impacts are estimated for each of the various economic categories supplying goods and services to the cruise ships and passengers. A discussion of each of the impact categories is provided below.

The typical expenditure profile of a cruise line while in port provides an understanding of the types of firms involved in providing goods and services to the vessel and its passengers. These expenditure categories are:

- **Food and Beverage**- This category includes wholesale food and liquor distributors. In some cases, the non-perishable food brought on board at the beginning of a cruise is not necessarily purchased locally, but based on contractual relationships and is trucked in from out of the area such as from Miami. Similarly, in some cases, liquor is purchased from in-bound warehouses, and not from local distributors.
- **Logo Items** - These items are typically purchased under contract and are trucked into the port of embarkation. Therefore, no local impact is estimated.
- **Flowers** - Local wholesale flower distributors supply flowers for each cruise.
- **Public Relations and Advertising** - Contracts are usually developed with local advertising firms to promote the cruise.
- **Parking** - Local parking management companies provide parking services for the passengers.
- **Taxis/buses** - Local taxis and buses provide transportation between the airport and the ship or between the hotel and the ship for air/sea passengers.
- **Security** - Security services are hired while the ship is in port.
- **Linen services** - Contracts are developed with local laundries for linen and laundry services.
- **Pilots** - Guide the cruise ships into the terminal.

- Tugs - Tug services are required for certain cruise ships to assist in docking and undocking. However, most cruise vessels require minimal, if any, tug assists.
- Stevedoring and Line Handling - Are required in loading and unloading baggage and ship stores and in securing and unsecuring the ship at dock.
- Local Travel Agencies - Local travel agencies will receive a commission from ticket sales to area residents.
- Garbage Disposal - Solid waste and other refuse that cannot be discharged at sea will be disposed by local refuse collectors.
- Bunkers - Fuel will be purchased from local bunkering companies.
- Water- Most cruise ships manufacture water at sea, but will still purchase some water locally prior to departure.

In addition to the impacts generated by direct vessel purchases, the *visitor industry* in Tampa is impacted by out-of town passengers sailing on cruise itineraries from the Port. These individuals may stay in hotels either before or after the cruise, and these individuals will typically purchase incidental retail items before or after the cruise and eat in local hotel restaurants while in the Tampa area. Also, these air/sea passengers will take cabs from the airport to the hotel or ship, as well as taxis between the hotel and the ship and throughout the city. In addition to passengers impacting the local visitor industry, the ship's crew will also impact the local industry. For example, the crew will likely purchase personal incidentals while in port. Also, a portion of the crew could be rotated on each sailing. The new crew could stay in a local hotel upon arrival, while the departing crew could also stay in a hotel prior to leaving the area.

Passengers arriving via the Tampa International Airport also generate impacts on site at the airport, including jobs with airlines (ticket agents, baggage, concessions, taxis, security, etc.). To estimate the impact on the Airport, Martin Associates used average impact ratios developed from our numerous airport impact studies conducted for such airports as Miami International Airport, Atlanta Hartsfield International Airport, Washington Dulles and Reagan National Airports, Baltimore-Washington International Airport, San Francisco International Airport, and Seattle-Tacoma International Airport.

The economic impact analysis of cruise service at Port Tampa Bay is based a survey of cruise lines currently serving the Port. Data was also collected from the Tampa Port Authority as well as Martin Associates' in-house data bases developed from previous Port Tampa Bay impact analyses.

The interviews of cruise lines focused on typical expenditure profiles of a vessel while in port as well as the percent of crew that are rotated on/off during each sailing. Incidental expenses by crew while in port were also estimated from the interviews as well as in-house data.

Passenger characteristics, such as the percent of passengers that are air/sea versus drive-in, the percent of visitor versus local passengers, and the share of passengers spending a pre/post night in Tampa and key landside expenses (e.g. hotel, food and retail) were developed from a passenger survey conducted by Ariel Business Group which entailed a survey of nearly 550 Port Tampa Bay passengers and 175 crewmembers conducted in December, 2012-January, 2013.

### 3. IMPACT SUMMARY

During the FY2015 cruise season, 206 cruises left the Port carrying 867,114 embarking and disembarking passengers. The economic impact of the cruise vessel calls at Port Tampa Bay is presented in Exhibit III-1

Exhibit III-1  
Economic Impact of FY2015 Cruise Operations at Port Tampa Bay

<b>CATEGORY</b>	<b>CRUISE</b>	<b>AIRPORT</b>	<b>TOTAL</b>
<b>JOBS</b>			
DIRECT	634	69	703
INDUCED	322	27	350
INDIRECT	<u>369</u>	<u>120</u>	<u>489</u>
<b>TOTAL</b>	<b>1,325</b>	<b>217</b>	<b>1,541</b>
<b>PERSONAL INCOME (1,000)</b>			
DIRECT	\$17,161	\$1,715	\$18,877
INDUCED/RESPENDING	\$30,021	\$1,610	\$31,632
INDIRECT	<u>\$12,164</u>	<u>\$4,611</u>	<u>\$16,775</u>
<b>TOTAL</b>	<b>\$59,346</b>	<b>\$7,936</b>	<b>\$67,283</b>
<b>BUSINESS REVENUE (1,000)</b>	<b>\$247,938</b>	<b>\$99,584</b>	<b>\$347,522</b>
<b>LOCAL PURCHASES (1,000)</b>	<b>\$16,624</b>	<b>\$12,518</b>	<b>\$29,142</b>
<b>STATE/LOCAL TAXES (1,000)</b>	<b>\$7,844</b>	<b>\$1,780</b>	<b>\$9,624</b>

### 4. JOB IMPACTS

The cruise activity at Port Tampa Bay created 1,541 total jobs for Tampa area residents. Of these 1,541 jobs, 703 were direct jobs, 350 jobs were supported in the Tampa area as the result of the

purchases of the 703 direct jobs holders, while another 489 indirect jobs were supported in local industries that supply services and goods to the tourism industry catering to the passengers as well as to the chandlers and other firms supplying services and goods to the vessels while in Port.

## **5. PERSONAL INCOME IMPACT**

The 703 direct job holders received \$18.9 million of direct wages and salaries, for an annual salary of \$26,850. As the result of the purchases made locally with this income, (which supported the 350 induced jobs in the Tampa area) an additional \$31.6 million of local income and consumption expenditures were created in the Tampa area. The 489 indirectly employed workers were paid \$16.8 million, for a total wage and salary income impact of \$67.3 million, including the consumption impact.

## **6. BUSINESS REVENUE**

Local businesses supplying food, beverages, and services to the cruise lines received \$347.5 million of business revenue. In addition, in order to support the services and goods supplied to the cruise lines by these firms, they purchased another \$29.1 million of goods and services. These local purchases supported the 489 indirect jobs in the local economy.

## **7. TAX REVENUE**

Finally, as the result of cruise activity at Port Tampa Bay during the FY2015 cruise season, \$9.6 million of state and local tax revenue was collected.

## **8. COMPARISON OF CRUISE IMPACTS FY2012-FY2015**

This section will provide a comparison of the economic impacts generated by cruise activity between FY2012 and FY2015. An identical methodology was used by Martin Associates to estimate the economic impacts generated by cruise activity for both of the studies, and therefore, direct comparisons over the period can be made.

Exhibit III-2  
Comparison of Cruise Impacts FY2012-FY2015

CATEGORY	Cruise 2012	Cruise 2015	Cruise Change
<b>JOBS</b>			
DIRECT	874	703	(171)
INDUCED	528	350	(178)
INDIRECT	580	489	(91)
RELATED USER JOBS	<u>NA</u>	<u>NA</u>	<u>NA</u>
<b>TOTAL JOBS</b>	<b>1,981</b>	<b>1,541</b>	<b>(440)</b>
<b>PERSONAL INCOME (1,000)</b>			
DIRECT	\$24,510	\$18,877	(\$5,633)
INDUCED/RESPENDING	\$46,535	\$31,632	(\$14,903)
INDIRECT	\$19,843	\$16,775	(\$3,068)
RELATED USER INCOME	<u>NA</u>	<u>NA</u>	<u>NA</u>
<b>TOTAL PERSONAL INCOME</b>	<b>\$90,888</b>	<b>\$67,283</b>	<b>(\$23,605)</b>
<b>VALUE OF ECONOMIC ACTIVITY (1,000)</b>			
BUSINESS SERVICES REVENUE	\$379,776	\$347,522	(\$32,254)
RELATED USER OUTPUT	<u>NA</u>	<u>NA</u>	<u>NA</u>
<b>TOTAL VALUE OF ECONOMIC ACTIVITY</b>	<b>\$379,776</b>	<b>\$347,522</b>	<b>(\$32,254)</b>
<b>LOCAL PURCHASES (1,000)</b>	<b>\$32,028</b>	<b>\$29,142</b>	<b>(\$2,886)</b>
<b>STATE &amp; LOCAL TAXES (1,000)</b>			
DIRECT, INDUCED AND INDIRECT	\$8,444	\$9,624	\$1,180
RELATED USER TAXES	<u>NA</u>	<u>NA</u>	<u>NA</u>
<b>TOTAL STATE AND LOCAL TAXES</b>	<b>\$8,444</b>	<b>\$9,624</b>	<b>\$1,180</b>

Totals may be rounded.

Several factors contributed to a decrease in cruise impacts at Port Tampa Bay in FY2015. First, over the FY2012 to FY2015 period, Port cruise passengers fell by nearly 107,000 passengers (-11%) from 974,259 in FY2012 to 867,114 in FY2015.

In addition to passenger declines, impacts decreased due to structural shifts, similar to those discussed in the cargo comparison. Specifically, the personal income multiplier for tourism-related activity (accommodations and restaurants) as estimated for the state of Florida by the U.S. Bureau of Economic Analysis, has fallen from 2.98 to 2.75. 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 occurred 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. Also, lower jobs-to-sale ratios of the 2012 Economic Census, which translate the local purchases by the direct employees into induced jobs, add to the decline in induced jobs resulting from the lower income multiplier. As a result of these structural

shifts, the induced job impacts per dollar of income are lower in this most recent study compared to the FY2012 economic impacts. Recent economic impact studies conducted by Martin Associates for other ports around the nation have demonstrated similar lower re-spending patterns and therefore lower induced jobs and income ratios, so this is not an issue solely affecting Port Tampa Bay.

Based on the factors above, in terms of impacts, decreases were experienced in all job categories, totaling 440 jobs. Also, personal income and business revenue subsequently declined by \$23.6 million and \$32.3 million respectively. Tax receipts increased slightly by nearly \$1.2 million.

## **IV. THE ECONOMIC IMPACT OF SHIP REPAIR OPERATIONS**

Port Tampa Bay is home to ship repair operations that are performed by the four major shipyards and ship repair facilities within the Port: Tampa Ship LLC, International Ship Repair, Gulf Marine Repair Corporation and DMT. The impacts generated by the ship repair work are measured in terms of:

- Jobs;
- Personal Income;
- Business Revenue; and
- State and Local Taxes.

These impacts are defined in the same manner as are the economic impacts of the marine cargo operations, and the cruise operations at Port Tampa Bay. Therefore, direct comparisons can be made between the impacts generated by the marine cargo activity, ship repair activity, and cruise services calling the Port.

### **1. ECONOMIC IMPACT STRUCTURE**

Expenditures associated with ship repair work typically occur in three ways. First, vessel owners contract directly with ship repair firms. The ship repair firms provide direct ship repair services with the companies' own employees and further purchase materials and subcontracting services. These subcontractor services include sandblasting, painting, boiler maintenance, electrical and machine part repairs, equipment replacement and maintenance. In turn, the subcontractors also purchase local parts, supplies and materials.

Secondly, vessel owners also make purchases directly from local vendors and suppliers of maritime services. For example, direct purchases include paint, mechanical, electrical and machine parts, flooring and carpeting, and ship stores and supplies. It is important to emphasize that the owners are not typically located in the Tampa area, and, hence, these expenditures represent "new" money to the region.

In addition to the purchases by the vessel owners, either via the prime contractor (the shipyard) or direct with local suppliers, when the vessels are in the yard, crew members typically stay on-board performing routine maintenance tasks, including painting. In addition to the crew, the owner's technical teams are deployed to the Tampa area to oversee repair work. These technical teams typically stay in local hotels. The crew on-board purchase food and entertainment services and the technical team also generate economic impacts with the local hotels, rental car companies, and restaurants.

The impacts are estimated for the types of vessel market sectors served by the Tampa area ship repair facilities. These vessel sectors are:

- Tanker;
- Tug;
- Cruise/Passenger;
- Barge/ITB;
- Cargo;
- New builds.

The impacts are also estimated separately by job category for each of these market sectors. The job categories consist of:

- Prime Contractor: includes the full-time equivalent jobs;
- Subcontractors: includes local firms supplying goods and services to the prime contractors, as well as sub-subcontractors providing services to the subcontractors;
- Crew Purchases: includes impacts generated in hotels, restaurants, retail, rental car companies, and entertainment establishments;
- Owner direct purchases: includes impacts with equipment and part suppliers, paint distributors, miscellaneous equipment and parts.

## 2. IMPACT SUMMARY

The resulting economic impacts generated by the Port Tampa Bay ship repair facilities are presented in Exhibit IV-1.

Exhibit IV-1  
Summary of Economic FY2015 Impacts Generated by Activity at Tampa Area Ship Repair Facilities

CATEGORY	Shipyard
<b>JOBS</b>	
DIRECT	1,480
INDUCED	953
INDIRECT	1,670
RELATED USER JOBS	NA
<b>TOTAL JOBS</b>	<b>4,102</b>
<b>PERSONAL INCOME (1,000)</b>	
DIRECT	\$71,525
INDUCED	\$86,717
INDIRECT	\$58,453
RELATED USER INCOME	NA
<b>TOTAL PERSONAL INCOME</b>	<b>\$216,695</b>
<b>VALUE OF ECONOMIC ACTIVITY (1,000)</b>	
BUSINESS SERVICES REVENUE	\$203,308
RELATED USER OUTPUT	NA
<b>TOTAL VALUE OF ECONOMIC ACTIVITY</b>	<b>\$203,308</b>
<b>LOCAL PURCHASES (1,000)</b>	<b>\$147,509</b>
<b>STATE &amp; LOCAL TAXES (1,000)</b>	
DIRECT, INDUCED AND INDIRECT	\$23,379
RELATED USER TAXES	NA
<b>TOTAL STATE AND LOCAL TAXES</b>	<b>\$23,379</b>

## 3. JOB IMPACT

The ship repair activity at the Port Tampa Bay's facilities generated 4,102 full-time equivalent jobs for Tampa area residents. The 4,102 full-time equivalent jobs consist of:

- 1,480 direct jobs are with the ship repair facilities, subcontractors, visitor industry firms, chandlers, electrical, paint and mechanical parts suppliers. These jobs would vanish if the ship repair facilities were no longer in business.

- As the result of purchases in the local economy by the direct full time jobs, another 953 induced jobs were generated in the Tampa area.
- As the result of \$147.5 million of local purchases, 1,670 indirect jobs were also generated in Florida, and this excludes jobs with subcontractors that have been included with the direct jobs.

#### **4. PERSONAL INCOME IMPACT**

The 1,480 direct job holders received \$71.5 million of direct wages and salaries, for an average salary of \$48,340. As the result of the use of this income for the purchases of goods and services, another \$86.7 million of local consumption purchases and re-spending are made. These consumption purchases create the additional 953 induced jobs in the Tampa area. The 1,670 indirect job holders received \$58.5 million of indirect income. The total direct, induced and consumption impact, and indirect income impact is \$216.7 million.

#### **5. BUSINESS REVENUE IMPACT**

The ship repair facilities and the subcontractors and firms supplying materials and services to the repair facilities and to the vessel owners received \$203.3 million of business revenue from repair activity at Tampa area ship repair facilities in FY2015.

#### **6. TAX IMPACT**

Finally, the ship repair activity by Port Tampa Bay shipyards generated \$23.4 million of tax revenue to the state and local governments.

#### **7. COMPARISON OF SHIPYARD IMPACTS FY2012-FY2015**

This section will provide a comparison of the economic impacts generated by shipyard activity between FY2012 and FY2015. An identical methodology was used by Martin Associates to estimate the economic impacts generated by shipyard activity for both studies, and therefore, direct comparisons over the period can be made.

Exhibit IV-2  
Comparison of Shipyard Impacts FY2012-FY2015

CATEGORY	Shipyard 2012	Shipyard 2015	Shipyard Change
<b>JOBS</b>			
DIRECT	1,374	1,480	106
INDUCED	730	953	223
INDIRECT	1,015	1,670	655
RELATED USER JOBS	<u>NA</u>	<u>NA</u>	<u>NA</u>
<b>TOTAL JOBS</b>	<b>3,119</b>	<b>4,102</b>	<b>983</b>
<b>PERSONAL INCOME (1,000)</b>			
DIRECT	\$59,893	\$71,525	\$11,632
INDUCED	\$56,473	\$86,717	\$30,244
INDIRECT	\$35,529	\$58,453	\$22,924
RELATED USER INCOME	<u>NA</u>	<u>NA</u>	<u>NA</u>
<b>TOTAL PERSONAL INCOME</b>	<b>\$151,894</b>	<b>\$216,695</b>	<b>\$64,801</b>
<b>VALUE OF ECONOMIC ACTIVITY (1,000)</b>			
BUSINESS SERVICES REVENUE	\$174,693	\$203,308	\$28,615
RELATED USER OUTPUT	<u>NA</u>	<u>NA</u>	<u>NA</u>
<b>TOTAL VALUE OF ECONOMIC ACTIVITY</b>	<b>\$174,693</b>	<b>\$203,308</b>	<b>\$28,615</b>
<b>LOCAL PURCHASES (1,000)</b>	<b>\$91,205</b>	<b>\$147,509</b>	<b>\$56,304</b>
<b>STATE &amp; LOCAL TAXES (1,000)</b>			
DIRECT, INDUCED AND INDIRECT	\$14,126	\$23,379	\$9,253
RELATED USER TAXES	<u>NA</u>	<u>NA</u>	<u>NA</u>
<b>TOTAL STATE AND LOCAL TAXES</b>	<b>\$14,126</b>	<b>\$23,379</b>	<b>\$9,253</b>

Increased shipyard activity over the FY2015 period contributed to an overall increase of 983 total (direct, induced and indirect) jobs. Also, personal income increased by \$64.8 million, while business services revenue increased by \$28.6 million and state and local tax revenue grew by \$9.2 million.

## **V. ECONOMIC IMPACT OF NON-MARITIME REAL ESTATE DEVELOPMENT**

In addition to the marine cargo, cruise, and shipyard operations at Port Tampa Bay, the Tampa Port Authority also leases land to non-maritime related tenants located at Channelside Bay Mall, the Florida Aquarium and World Trade Center. This property is leased for office and retail space, restaurants, and entertainment activity. Essentially these are tenants of the Tampa Port Authority and are not included in the cargo, cruise and shipyard economic impact analysis.

With respect to the real estate analysis, the impacts created with the real estate tenants of Port Tampa Bay are generated by the demand for the goods and services produced by the tenants, and not by activity specific to transportation services provided by Tampa Port Authority. In contrast, the capital investments made by the Port in the marine terminals are essential for the existence of maritime operations in Tampa. As a result, the impacts generated by tenants of the Port's real estate holdings are not as directly dependent upon Port Tampa Bay and its investment as are the marine cargo and cruise activities. Some of these companies are located on Port-owned property as a direct result of efforts by the Tampa Port Authority to recruit them, and would likely not have located in Tampa otherwise. Other firms would likely have located in Tampa regardless of the Port's efforts and infrastructure investment.

The impact analysis of the real estate tenants are based on a survey and updated data of tenants located at the Port's real estate holdings including Channelside Bay Mall and World Trade Center. Martin Associates developed a separate real estate impact model to estimate the impacts of these tenants on the regional Tampa economy. In addition, the impact model can be used to assess the impacts of potential uses of Port-owned property, including, office, restaurant, and retail uses, and compare these impacts with those generated by marine cargo, cruise and shipyard activity.

Exhibit V-1 summarizes the economic impacts of the real estate tenants of the Tampa Port Authority.

Exhibit V-1  
 Economic Impacts of the Tampa Port Authority Real Estate Tenants - FY2015

CATEGORY	Non-maritime Real Estate
<b>JOBS</b>	
DIRECT	1,135
INDUCED	474
INDIRECT	966
RELATED USER JOBS	<u>NA</u>
<b>TOTAL JOBS</b>	<b>2,575</b>
<b>PERSONAL INCOME (1,000)</b>	
DIRECT	\$43,713
INDUCED	\$38,622
INDIRECT	\$45,811
RELATED USER INCOME	<u>NA</u>
<b>TOTAL PERSONAL INCOME</b>	<b>\$128,146</b>
<b>VALUE OF ECONOMIC ACTIVITY (1,000)</b>	
BUSINESS SERVICES REVENUE	\$284,749
RELATED USER OUTPUT	<u>NA</u>
<b>TOTAL VALUE OF ECONOMIC ACTIVITY</b>	<b>\$284,749</b>
<b>LOCAL PURCHASES (1,000)</b>	<b>\$77,376</b>
<b>STATE &amp; LOCAL TAXES (1,000)</b>	
DIRECT, INDUCED AND INDIRECT	\$12,830
RELATED USER TAXES	<u>NA</u>
<b>TOTAL STATE AND LOCAL TAXES</b>	<b>\$12,830</b>

As summarized in Exhibit V-1, real estate tenants create the following economic impacts:

### 1. JOB IMPACT

The non-maritime real estate activity at the Port Tampa Bay’s facilities generated 2,575 full-time equivalent jobs for Tampa area residents. The 2,575 full-time equivalent jobs consist of:

- 1,135 direct jobs are with tenants of the Port’s real estate holdings.
- As the result of purchases in the local economy by the direct full time jobs, another 474 induced jobs were generated in the Tampa area.

- As the result of \$77.4 million of local purchases, 966 indirect jobs were also generated in Florida.

## **2. PERSONAL INCOME IMPACT**

The 1,135 direct job holders receive \$43.7 million of direct wages and salaries, for an average salary of \$38,500. As the result of the use of this income for the purchases of goods and services, another \$38.6 million of local consumption purchases and re-spending are made. These consumption purchases create the additional 474 induced jobs in the Tampa area. The 966 indirect job holders received \$45.8 million of indirect income. The total direct, induced and consumption impact, and indirect income impact is \$128.1 million.

## **3. BUSINESS REVENUE IMPACT**

The non-maritime real estate tenants received \$77.4 million of business revenue from activity in FY2015.

## **4. TAX IMPACT**

Finally, the Port's real estate activity generated \$12.8 million of tax revenue to the state and local governments.

## **5. COMPARISON OF NON-MARITIME REAL ESTATE IMPACTS FY2012-FY2015**

This section will provide a comparison of the economic impacts generated by real estate activity between FY2012 and FY2015. An identical methodology was used by Martin Associates to estimate the economic impacts generated by cruise activity for both studies, and therefore, direct comparisons over the period can be made.

Exhibit V-2  
Comparison of Non-Maritime Real Estate Impacts FY2012-FY2015

CATEGORY	Non-maritime Real Estate 2012	Non-maritime Real Estate 2015	Non-maritime Real Estate Change
<b>JOBS</b>			
DIRECT	970	1,135	165
INDUCED	444	474	30
INDIRECT	224	966	742
RELATED USER JOBS	<u>NA</u>	<u>NA</u>	<u>NA</u>
<b>TOTAL JOBS</b>	<b>1,637</b>	<b>2,575</b>	<b>938</b>
<b>PERSONAL INCOME (1,000)</b>			
DIRECT	\$34,161	\$43,713	\$9,552
INDUCED	\$28,979	\$38,622	\$9,643
INDIRECT	\$10,032	\$45,811	\$35,779
RELATED USER INCOME	<u>NA</u>	<u>NA</u>	<u>NA</u>
<b>TOTAL PERSONAL INCOME</b>	<b>\$73,172</b>	<b>\$128,146</b>	<b>\$54,974</b>
<b>VALUE OF ECONOMIC ACTIVITY (1,000)</b>			
BUSINESS SERVICES REVENUE	\$86,647	\$284,749	\$198,102
RELATED USER OUTPUT	<u>NA</u>	<u>NA</u>	<u>NA</u>
<b>TOTAL VALUE OF ECONOMIC ACTIVITY</b>	<b>\$86,647</b>	<b>\$284,749</b>	<b>\$198,102</b>
<b>LOCAL PURCHASES (1,000)</b>	<b>\$31,151</b>	<b>\$77,376</b>	<b>\$46,225</b>
<b>STATE &amp; LOCAL TAXES (1,000)</b>			
DIRECT, INDUCED AND INDIRECT	\$6,805	\$12,830	\$6,025
RELATED USER TAXES	<u>NA</u>	<u>NA</u>	<u>NA</u>
<b>TOTAL STATE AND LOCAL TAXES</b>	<b>\$6,805</b>	<b>\$12,830</b>	<b>\$6,025</b>

Totals may be rounded.

Direct, induced and indirect jobs increased by 938. Also, personal income increased by nearly \$55.0 million, while business services revenue increased by \$198.1 million and state and local tax revenue grew by \$6.0 million.