

The Economics of Land Use



Final Report

Economic Impacts of the San Diego Unified Port District in 2015

Prepared for:

San Diego Unified Port District

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December 20, 2016

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1. INTRODUCTION AND KEY FINDINGS

Introduction

The San Diego Unified Port District (District) retained Economic & Planning Systems (EPS) to prepare an updated economic impact analysis of operations on District property.¹ This study reflects economic activity in 2015 and relies on a methodological approach that is generally consistent with previous studies of the District. As was the case in prior economic impact studies, the results contained in this study reflect the work of three consultants and a significant level of Port District staff involvement.² Current estimates of economic impact reflect updated datasets and interviews conducted with selected District employers.

This economic impact study offers an evaluation of spending and employment attributable to the District. In addition to capturing the “direct” economic activities supported by the District, the analysis estimates “ripple” or “multiplier” effects. Ripple effects include “indirect” and “induced” spending that stems from economic activity on District property.³ For example, businesses operating on District land commonly purchase inputs to production from within the County. In addition, household spending by employees whose jobs are attributable to the District is considered.

Background

The District is a public benefit corporation and regional government agency. It controls about 2,500 acres of land and almost 3,000 acres of water spread across its five-member city jurisdictions of Chula Vista, Coronado, Imperial Beach, National City, and San Diego. With control of more than 33 of the 54 total miles along the San Diego Bay, the District plays an important role in administering a unique maritime, visitor-serving, environmental, and recreational asset, while also protecting the Tidelands of San Diego Bay for the people who live, work, and visit there. The bay and its waterfront are essential elements of the San Diego geography, economy, and culture, serving as:

- A strategically located harbor for trade, cruise, and military uses;

¹ See prior studies including (1) *San Diego Unified Port District: Economic Impact on San Diego County and the State of California*, Economic & Planning Systems in association with Martin Associates, and BREA, September 9, 2013 and (2) *Economic Impacts of the San Diego Unified Port District*, Economic & Planning Systems, February 25, 2015.

² In addition to work by EPS, Martin Associates prepared an analysis of marine terminals; Business Research & Economic Advisors (BREA) prepared a study of the cruise industry, and the District's Marketing and Communications Department provided District data and support.

³ See *Overview of Input-Output Methodology* for a detailed description of “indirect” and “induced” effects.

- A workplace for marine cargo, shipbuilding and repair, commercial fishing, boat tours and other water-dependent industries;
- An important recreational and environmental asset for urban residents;
- A national and international destination for visitors and convention attendees; and
- A venue for special events, drawing hundreds of thousands of people to the waterfront for the July 4th Big Bay Boom, San Diego Bay Parade of Lights, and the San Diego Summer Pops series, to name just a few.

By virtue of its size and responsibility for administering the scenic, strategic, and economically crucial San Diego bayfront, the District plays an important role in the regional economy and its provision of recreational opportunities and environmental stewardship. Through the San Diego Harbor Police Department, the District serves as a key public safety agency and partner to local, state and federal entities in the security of San Diego Bay and high-value assets that include maritime cargo terminals, major shipyards, military installations, San Diego International Airport, a convention center, and prominent visitor-serving establishments. To balance competing demands for scarce space along the bayfront, the District must allocate its resources among commerce, industry, navigation, fisheries, tourism, environmental needs, and recreational demands, responding to changing requirements on an ongoing basis.

As part of its effort to understand how the District can best utilize its assets for the benefit of the region, the District retained EPS to analyze the impacts businesses and other entities located within the District's jurisdiction have on the regional economy. The District commissioned similar studies in 2014, 2013, 2007, 2003, 1999, and 1992.

This study measures jobs and economic activity:

- Originating on District property in 2015
- Categorized into two industry groups:
 - (1) Tourism and Commercial Activity
 - (2) Industrial and Maritime Commerce
- Within the San Diego County economy.

Scope of the Analysis

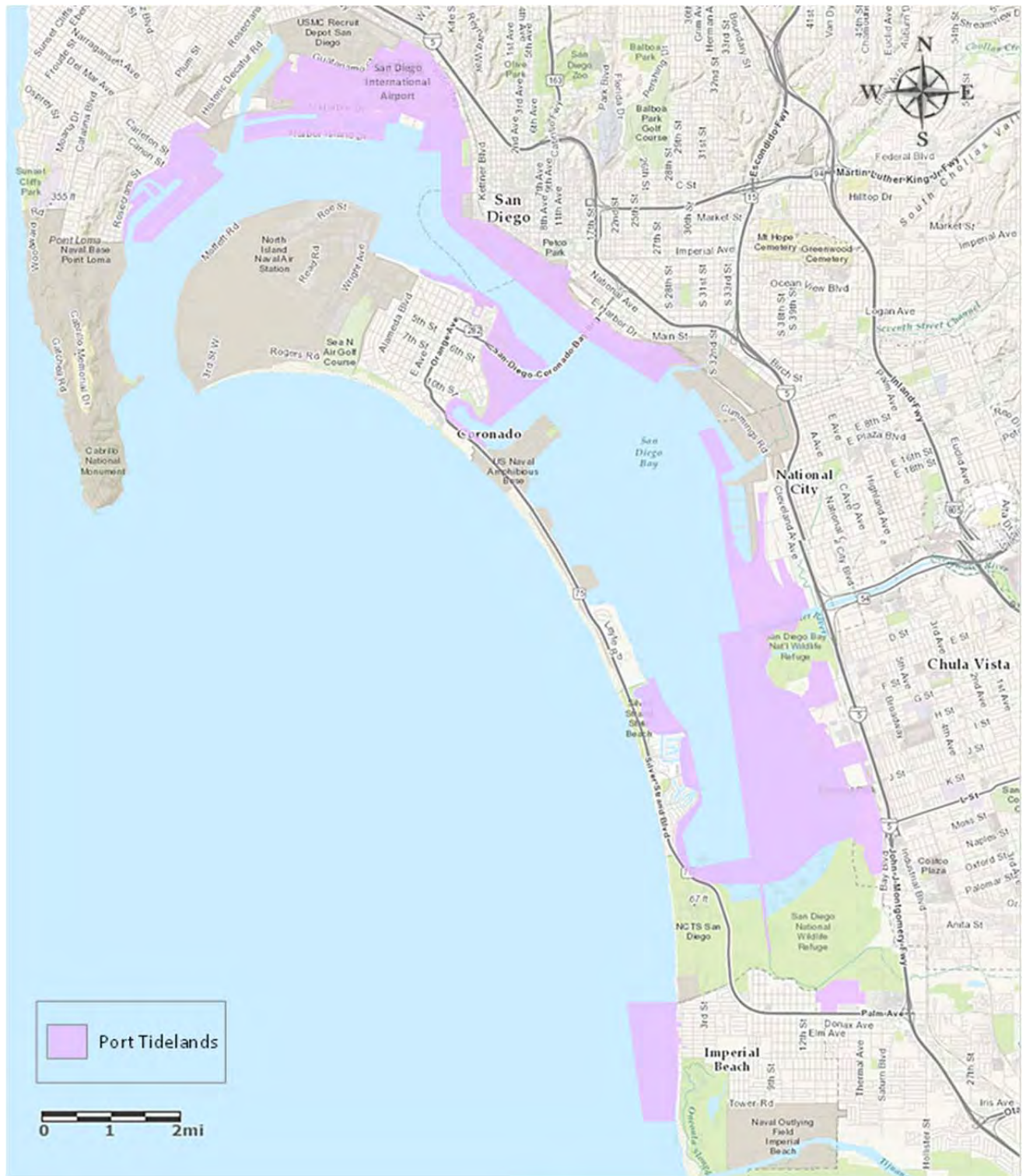
The study analyzes impacts by geographic area for a specific point in time and assesses impacts by type of establishment. The categorization of establishments is consistent with those used in previous Port District analyses. These categories have been continued in this report for comparability.

| | |
|----------------------------|--|
| Geographic Area | Figure 1 provides a map of the land and water within the District's jurisdiction. The analysis examines all of the economic activity (revenues and jobs) that take place on, or are directly attributable to, land and water areas administered by the District, with the exception of military installations and the San Diego International Airport. ⁴ |
| Timeframe | The report focuses on economic activity in 2015, the last complete calendar year for which data was available at the start of the analysis. |
| Business Categories | Previous District economic analyses have reported results for two categories of establishments: (1) Tourism and Commercial and (2) Industrial and Maritime. The Tourism and Commercial category includes retail, recreation and hospitality establishments, as well as most convention and cruise industry spending. ⁵ The Industrial and Maritime category includes maritime cargo operations, manufacturing, ship repair, marine terminal and cargo-related firms, and wholesalers. |

⁴ As a federal entity, military uses are not subject to local controls. Accordingly, the District has limited influence over economic activities on those lands. Note that the military's role in the regional economy is frequently examined by many sources, including a periodic report called the San Diego Military Economic Impact Study published by the San Diego Military Advisory Council (SDMAC). Also, the San Diego International Airport is not part of the analysis as it is governed by the San Diego County Regional Airport Authority, an agency that was created when the airport was separated from the Port District in 2003.

⁵ Some cruise industry spending occurring on District land is categorized as Industrial and Maritime, depending on the business type at which the spending occurs.

Figure 1 Illustration of San Diego Unified Port District Jurisdiction



Note that San Diego International Airport and military establishments are not analyzed in this report.

Summary of Methodology

Economic Impacts Analysis Overview

The core economic impacts of the District are derived from the economic activities—sales and employment—that occur on District property. The analysis of these activities includes estimates of economic activity at private businesses, public sector entities, and other organizations located on District property. This on-site economic activity and associated employment on District land is a direct effect of the District. In addition, spending by cruise passengers, cruise ship crews, and convention center attendees that occurs off of District property also is a direct effect of the District. These off-site effects are attributable to the cruise ship terminal and the convention center, facilities sited on District property.⁶

The analysis relies on estimates of direct effects of the District to determine the total economic effect countywide. The analysis relies on IMPLAN, a highly regarded “Input-Output” model encompassing up-to-date economic information for San Diego County. IMPLAN analysis reveals industry-specific multiplier effects. These effects are categorized as indirect or induced effects.

- **Indirect Effects:** economic impacts on upstream businesses that supply inputs (goods and services) to production.
- **Induced Effects:** economic impacts that are generated by household expenditures made by employees.

Summary of Tasks

The research effort supporting this report included extensive data collection and analysis. Analytical methods were based on the approach developed in the 2011 and 2013 impact analyses. This 2015 analysis relies on updated District data and an updated economic model. The procedures for the analysis are described below.

Data Collection

- **Review District data.** The District provided tenant databases, information on gross sales (for tenants operating under leases which require sales reporting), and detailed information about its staffing. In addition, publicly available documents, including the District budget, the Port Master Plan, and statistics on the marine terminals and land use designations provided important background.
- **Conduct tenant research.** In addition to information provided by the District on tenants, EPS reviewed websites of major tenants, business news reporting, and other sources to obtain information about workers, sales, and customers targeted by Port tenants. EPS also conducted a number of phone interviews with major tenants to obtain additional data.

⁶ The analysis avoids double counting of spending on District land by estimating cruise and convention center spending patterns within the region.

- **Assess business data.** EPS also reviewed datasets from proprietary business data provider Dun & Bradstreet. These data provided another source of information on sales and employment.
- **Evaluate economic indicators for the San Diego region.** To provide context for the economic impact information, EPS collected and analyzed selected economic metrics for the region.

Data Analysis, Integration, and Adjustments

- **Adjust data to avoid double-counting.** The analysis avoids double-counting of sales (double-counting would occur if the analysis counted a sale twice). For example, counting all of the sales from hotels within the District and counting all of the spending by convention center attendees and cruise passengers would result in a double count of sales (e.g., spending at hotels on District land). This analysis makes deductions accordingly.
- **Integrate marine terminals data.** Consistent with the methodology used in the 2011 EPS study of the District, this analysis relies on a stand-alone report focused on the marine terminals (Tenth Avenue and National City Terminals). Martin Associates produced the marine terminal study.⁷
- **Account for spending by convention attendees and cruise ship passengers and staff.** The direct effects of the convention center and cruise ship terminal include all spending by visitors and staff. Additional spending that occurs outside of the District jurisdiction is considered a direct effect. The study relies on data from an independent study of the cruise market and data from the San Diego Convention Center Corporation.⁸

Economic Modeling, Analysis, and Documentation of Findings

- **Develop and run economic model.** With roughly 600 tenants and subtenants, this task included defining the regional economic model, inputting information into the appropriate industry sectors, running the model, and evaluating results.
- **Draft findings based on review of model results.** This task included documenting the findings on impacts and segmenting results by appropriate industry groupings.
- **Compare results to 2013.** This analysis differs from the previous report in two primary ways: (1) 2015 data is the basis for the impacts and (2) the analysis relies on an updated regional model (IMPLAN/San Diego County 2014). This updated regional model includes current business data and economic multipliers.
- **Estimate tax revenue.** To estimate the level of tax revenue generated from establishments within the District, this analysis relies on tenant sales estimates and tax revenue data from the County Assessor's Office, as well as estimates from the Martin Associates cargo analysis.

⁷ The Local and Regional Economic Impacts of the Port of San Diego Marine Terminals, August 1, 2016.

⁸ Economic Impact of the San Diego Cruise Sector 2015, Business Research & Economic Advisors (BREA) and San Diego Convention Center Corporation FY2015 Annual Report.

Key Findings

1. The District is an important economic driver in the region, directly supporting over 43,600 jobs and more than \$5.4 billion in economic output in 2015.

Establishments located on District property are very diverse, with the District's portion of the San Diego bayfront encompassing:

- Cargo terminals and surface transportation infrastructure (roadways and railways) that processed almost **1.8 million tons of cargo in 2015**;⁹
- Major industrial users including shipbuilding and boat building and repair facilities such as **Continental Maritime, Marine Group Boat Works, and Shelter Island Boatyard**;
- A cruise ship terminal that is enjoying increased activity, with **77 cruise calls** generating a total impact of nearly **\$600,000 per in-transit call** and almost **\$2 million per turnaround call** in 2015;¹⁰
- Maritime activities ranging from commercial seafood enterprises such as the new **Tuna Harbor Dockside Market** and **Chesapeake Fish** to pleasure and charter boating operators like **Point Loma Sportfishing**, as well as hundreds of associated businesses, including boat dealers, wholesalers, and retail suppliers;
- Visitor attractions such as the **San Diego Convention Center** and **14 major hotels and resorts offering nearly 8,000 rooms**, along with visitor-oriented retail, restaurants, and recreation businesses.

These diverse economic activities support a broad range of employment opportunities. Employees at businesses and organizations within the District include manual laborers, machine operators, professional service providers, public servants, hospitality workers, and retail clerks, along with many other occupations found



⁹ FY2015 data from Martin Associates.

Photo Credit: San Diego Unified Port District

¹⁰ Calendar year 2015 data from BREA. An in-transit call is made by a ship during the course of its itinerary. During a turnaround call, passengers embark in and return to San Diego for their cruise.

throughout the Industrial & Maritime and Tourism & Commercial industry groups.

2. Including multiplier effects the District supported more than 68,000 jobs and about \$8.3 billion in economic output in San Diego County during 2015.

In addition to direct effects attributable to the District, indirect and induced spending generated additional employment and sales within the San Diego County economy. These additional economic impacts contribute nearly 24,700 additional jobs and roughly \$2.9 billion in output countywide. Overall, this analysis finds that approximately 1 in 30 San Diego County jobs and more than 2.5 percent of the San Diego County economy are attributable to the District. This study finds that the total economic impact of the District is about nine percent greater than in 2013. It is important to note, however, that the comparability of District impacts across time is affected by both the economic activity occurring within the District as well as business linkages, consumer spending patterns, and the makeup of the regional, national, and global economy.

Figure 2 Economic Impact of the District in San Diego County in 2015

| Impact Type | Industrial & Maritime | Tourism & Commercial | Total |
|--|-----------------------|----------------------|----------|
| Direct Economic Impacts¹ | | | |
| Employment (jobs) | 12,995 | 30,632 | 43,627 |
| Labor Income (millions) | \$866 | \$1,126 | \$1,992 |
| Labor Income & Benefits Per Job | \$66,609 | \$36,767 | \$45,656 |
| Economic Output (millions) | \$2,703 | \$2,722 | \$5,425 |
| Indirect & Induced Impacts | | | |
| Employment (jobs) | 11,442 | 13,237 | 24,679 |
| Labor Income (millions) | \$617 | \$674 | \$1,291 |
| Economic Output (millions) | \$1,001 | \$1,883 | \$2,884 |
| Total Economic Impacts | | | |
| Employment (jobs) | 24,437 | 43,870 | 68,306 |
| Labor Income (millions) | \$1,483 | \$1,800 | \$3,283 |
| Economic Output (millions) | \$3,704 | \$4,604 | \$8,309 |

¹ Includes roughly 35,600 on-site jobs and \$4.8 billion in on-site direct output.

Source: Economic & Planning Systems; Port of San Diego; Martin & Associates; Business Research & Economic Advisors; IMPLAN Group

3. Industrial and maritime commerce is a significant contributor to the District's economic impact, but tourism and commercial activity supports more jobs and economic output.

Industrial and maritime activities are responsible for about 36 percent of the District's total employment effect and 45 percent of the District's total output effect within San Diego County. Tourism and commercial activity comprises 64 percent of jobs and 55 percent of the output generated countywide.

Figure 3 Employment Impacts by Industry Group

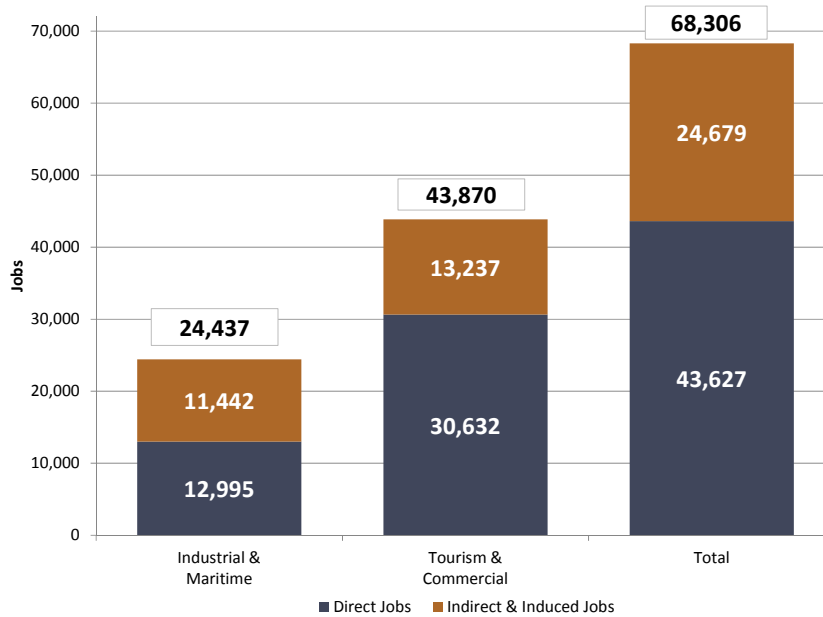
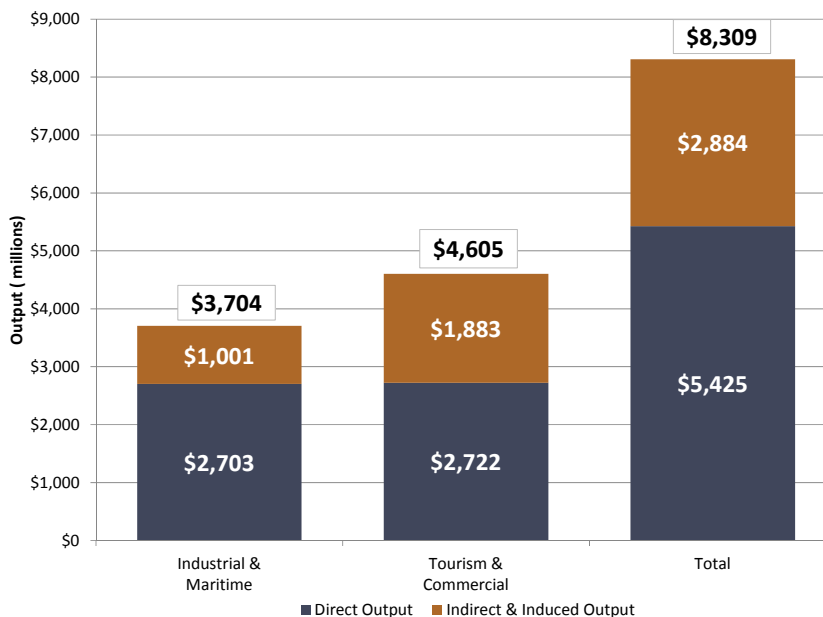


Figure 4 Economic Output Impacts by Industry Group

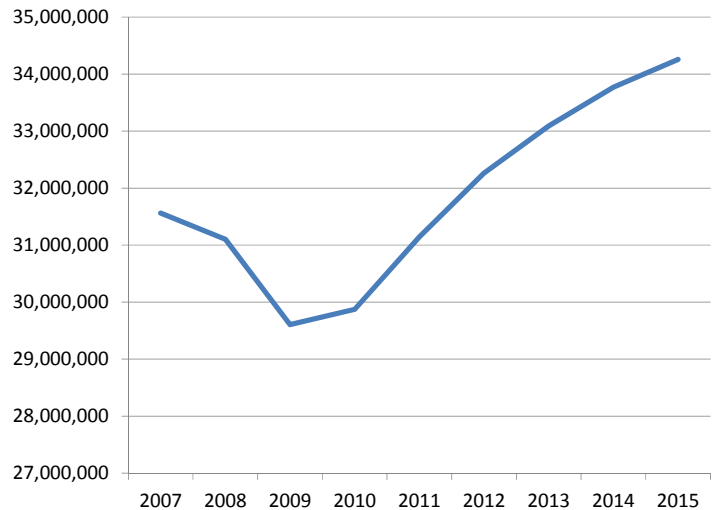


4. The growth in direct employment attributable to the District increased by about 10 percent between 2013 and 2015, while direct economic output increased by roughly six percent over the same time period.

San Diego tourism has been in recovery mode, with annual visitor volume increasing steadily since 2009 (see chart at right). This analysis finds that the tourism growth trend is observable within the District, with direct Tourism and Commercial jobs up 14 percent and associated economic output up four percent between 2013 and 2015. This growth includes hotels, recreation businesses, dining establishments, and retail, as well as general commercial activities that occur within the District boundary.

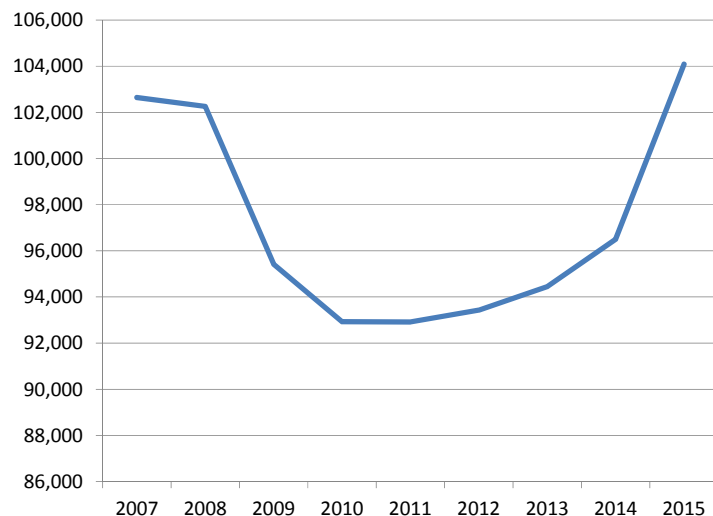
Countywide, the manufacturing sector has been recovering from post-recession declines, with employment up about 10 percent since 2013. However, not all Maritime and Industrial businesses have enjoyed double digit growth rates. On District property, this analysis finds a similar increase in industrial and maritime employment activity. However, the closure and demolition of Dynegy's South Bay Power Plant and a dip in productivity (i.e., output per employee), among other factors, have contributed to a slower rate of growth in output within the District's Industrial and Maritime sector.

Visitor Volume in San Diego County 2007-15



Source: The San Diego Tourism Authority

Manufacturing Employment in San Diego County 2007-15



Source: State of California Economic Development Department

Figure 5 Direct Employment Attributable to the District in 2013 and 2015

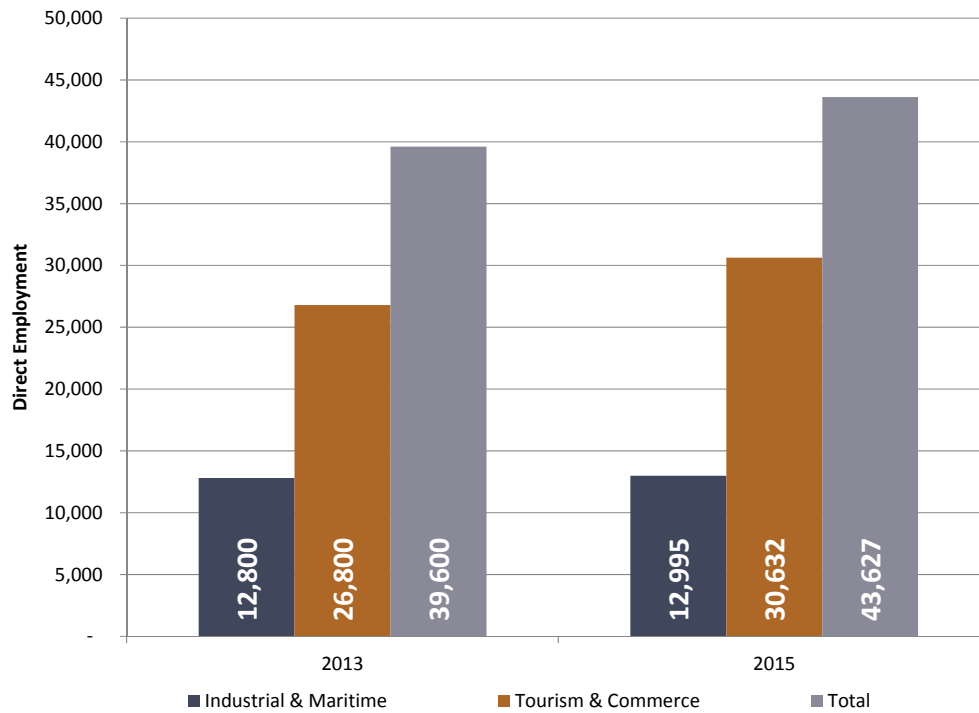
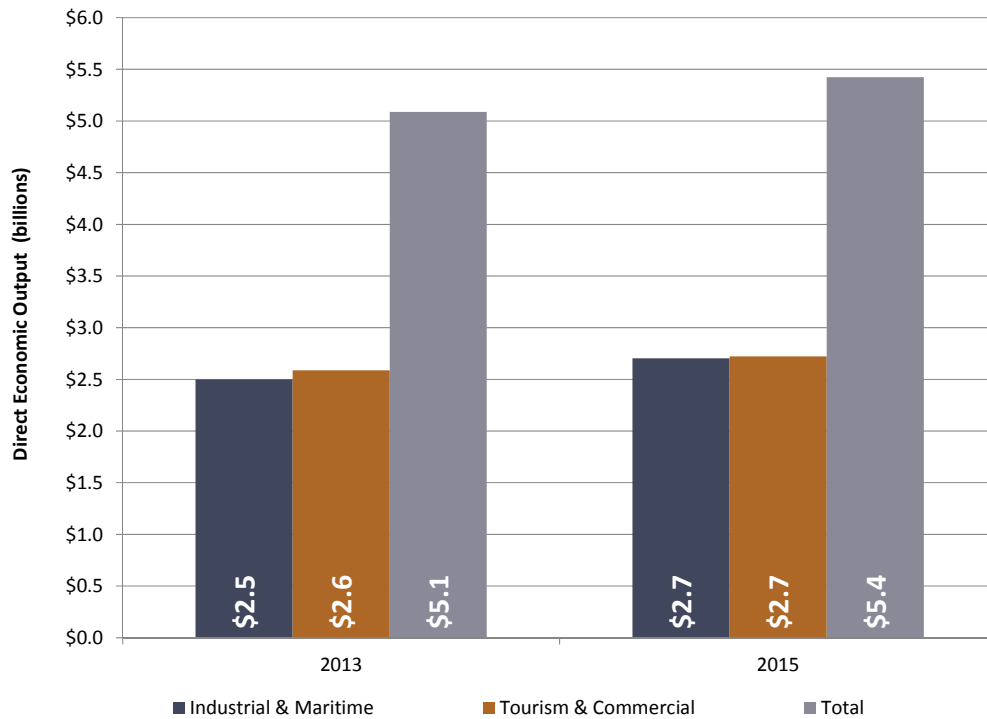


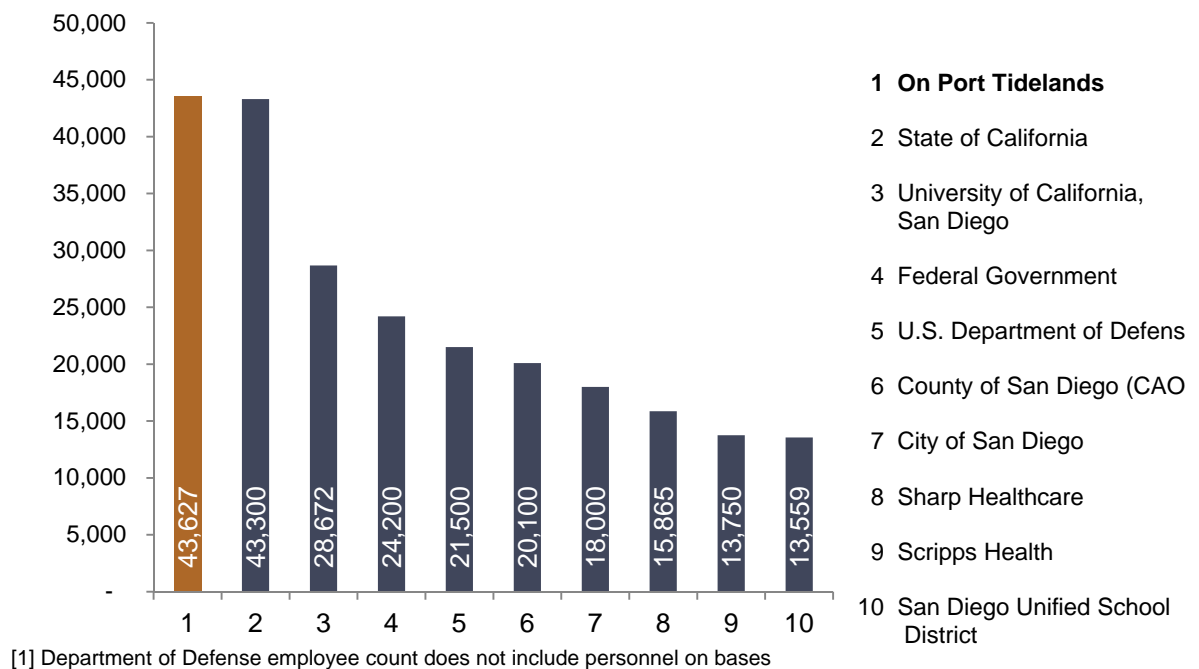
Figure 6 Direct Economic Output Attributable to the District in 2013 and 2015



5. If the jobs supported within the jurisdictional boundary of the San Diego Unified Port District were considered a single employment source, the District would be the largest employer in San Diego County.

The most significant employers in San Diego County include government agencies, universities, and health care institutions with multiple locations or campuses. Employment on District property ranks just above State employment in the County as well as above the University of California San Diego, San Diego County, Sharp Healthcare, Scripps Health, and others. Note that federal government employment counts vary widely depending on how on-base personnel are accounted for. The data source used in the figure below separates Department of Defense personnel from other federal employees and does not account for on-base personnel in the total.

Figure 7 Largest Employers in San Diego County



Source: San Diego Sourcebook 2014; Economic and Planning Systems, Inc.

6. Estimates of tax revenue generation directly attributable to economic activity within the District jurisdiction indicate that property, sales, hotel, and other taxes totaled more \$130 million in 2015.

The analysis considered retail sales estimates and hotel revenue generation to calculate sales taxes and transient occupancy taxes (TOT). EPS also coordinated with the San Diego County Assessor's Office to determine property tax revenues, including possessory interest taxes paid by District tenants. The results indicate that TOT is the most significant source of tax revenue, followed by property tax. When cargo-related state and local tax revenue is included, the tax revenue estimate exceeds \$130 million.

2. PORT DISTRICT OVERVIEW

Port District Tidelands and Submerged Lands

The San Diego Unified Port District was created in 1962 by the California State Legislature to serve as the San Diego Bay tidelands public steward. It is governed by a seven member Board of Port Commissioners, appointed by the District's constituent cities' elected bodies.¹¹ The District includes historic tidelands and submerged lands in the five member cities: Chula Vista, Coronado, Imperial Beach, National City, and San Diego. The District oversees two marine cargo terminals, two cruise ship terminals, 22 public parks, the Harbor Police Department, and the leases of master tenants all along San Diego Bay. The District is the fourth largest of the 11 ports in the State. See **Figure 9** for a map of the District and its subareas.

While the entire San Diego Bay Tidelands and submerged lands encompass about 4,400 acres of land and 10,500 acres of water, that area is divided among federal, state, local, and District control. Overall, the State of California is the largest owner, with about 43 percent of the total—almost all of which is water—followed by the District which controls 37 percent, and federal agencies with 20 percent. The District controls the largest portion of the land area, with almost 2,500 acres, which comprises 56 percent of the land total. The District also controls more than 60 percent of the Bay shoreline, with about 33 of the 54 total miles.

The District's nearly 5,500 acres of Tidelands and submerged lands and 33 miles of shoreline are spread among its five member cities, which include Chula Vista, Coronado, Imperial Beach, National City, and San Diego.

The District's land use activities are guided by a Port Master Plan which was prepared and adopted by the District's Board of Port Commissioners in accordance with the provisions of the California Coastal Act. Initially adopted in 1964 and updated numerous times since, the Plan provides proposed land and water use allocations that "reflect a balanced

The Port is responsible for the development, operation, maintenance, control, regulation, and management of the tidelands and navigable waters of San Diego Bay for the promotion of commerce, navigation, fisheries, and recreation.

- San Diego Unified Port District Compass Strategic Plan 2012-2017

Mission Statement

The San Diego Unified Port District will protect the Tidelands Trust resources by providing economic vitality and community benefit through a balanced approach to maritime industry, tourism, water and land recreation, environmental stewardship and public safety.

¹¹ The city councils of Chula Vista, Coronado, Imperial Beach and National City appoint one commissioner each and the San Diego City Council appoints three commissioners.

distribution of activities for the entire bay, evolved after considerable consideration of many factors and issues.”¹²

In the Plan, over 40 percent of the District’s land acreage is used for industrial purposes, while about 50 percent of the land is split roughly evenly among conservation (17 percent), commercial (16 percent), and public recreation uses (15 percent). About 10 percent is used for public facilities and military functions.

The vast majority of District water property (62 percent) is designated for conservation (38 percent) or public recreation uses (24 percent). The remaining 38 percent is split primarily among commercial (13 percent) and public facility uses (13 percent). Military and industrial uses make up only about 11 percent of the water acreage total. **Figure 8** presents the overall distribution of land uses within the Port Master Plan. Overall, including land and water areas, conservation is the most significant use, followed by industrial.

Figure 8 Port Master Plan Land and Water Use Allocation Summary

| Use | Land Acreage | | Water Acreage | | Total Acreage ¹ | |
|-------------------|----------------|-------------|----------------|-------------|----------------------------|-------------|
| | Acres | % of Total | Acres | % of Total | Acres | % of Total |
| Commercial | 457.9 | 16% | 388.6 | 13% | 846.5 | 15% |
| Industrial | 1,158.7 | 42% | 212.0 | 7% | 1,370.7 | 24% |
| Public Recreation | 407.5 | 15% | 681.3 | 24% | 1,088.8 | 19% |
| Conservation | 485.3 | 17% | 1,084.6 | 38% | 1,569.9 | 28% |
| Public Facilities | 241.4 | 9% | 387.9 | 13% | 629.3 | 11% |
| Military | <u>25.9</u> | <u>1%</u> | <u>125.6</u> | <u>4%</u> | <u>151.5</u> | <u>3%</u> |
| Total | 2,776.7 | 100% | 2,880.0 | 100% | 5,656.7 | 100% |

¹ Total planning acreage differs slightly from District-owned lands presented in the Master Plan

Source: Port Master Plan, Unified Port of San Diego (Print July 2015)

¹² Port Master Plan

Subareas within the Tidelands

Prominent subareas within the Tideland include:

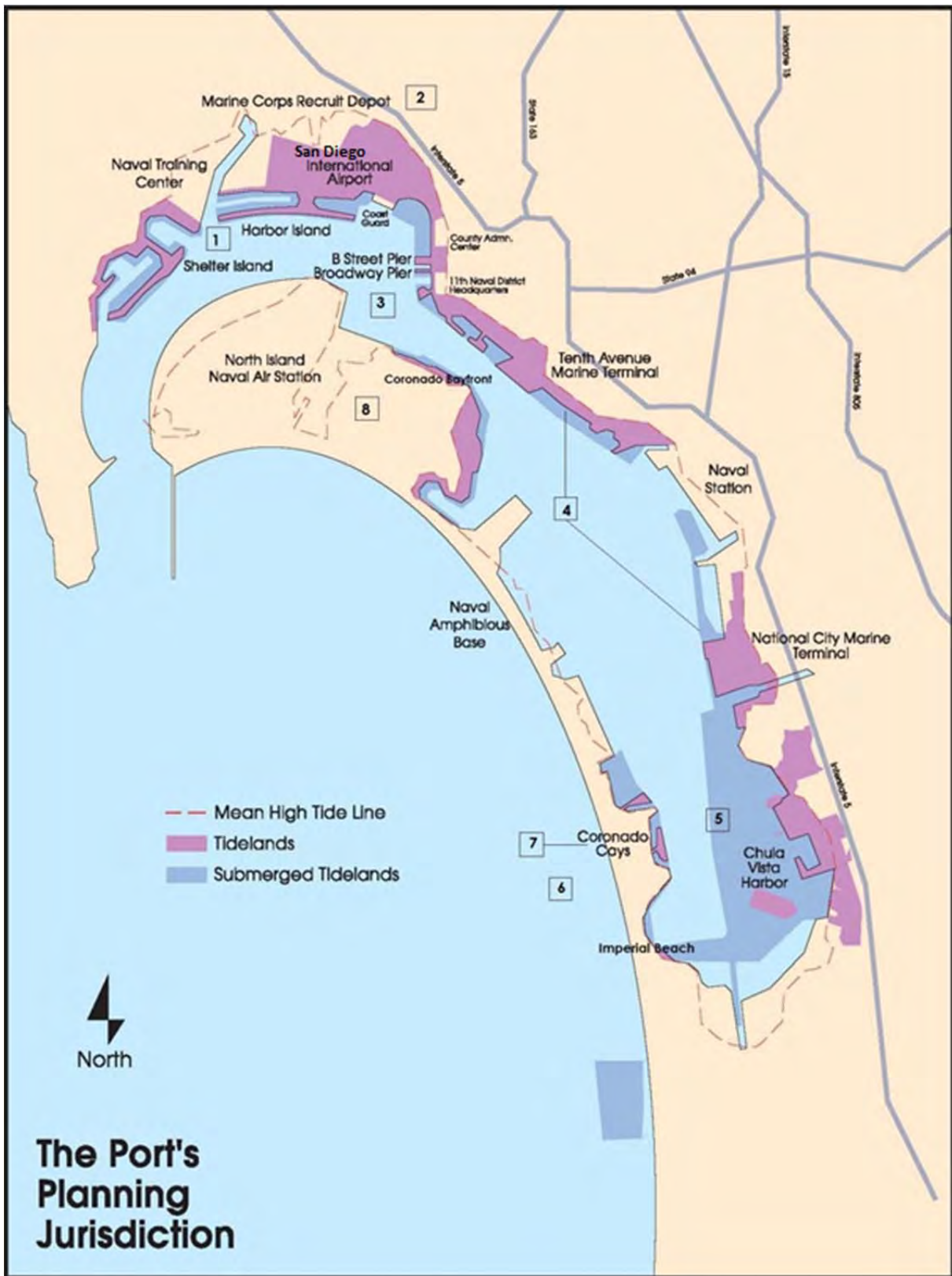
- Shelter Island and Harbor Island
- San Diego International Airport
- B Street and Broadway Piers /Centre City Embarcadero
- Tenth Avenue Marine Terminal
- National City Marine Terminal
- Coronado Cays/Chula Vista Bayfront
- Imperial Beach
- Silver Strand South
- Coronado Bayfront
- Military Areas

The section below provides an overview of each of these subareas. **Figure 9** provides an illustration of the prominent areas and land uses throughout the San Diego Bay Tidelands. Except for the Airport and the military installations, the general locations shown on the map and described below are included in the economic analysis.

District Subarea Profiles

- 1. Shelter Island and Harbor Island.** Tenants include hotels, restaurants, marinas, car rental agencies, commercial sport fishing, and other tourist-oriented entitles like boat tours.
- 2. San Diego International Airport.** The San Diego County Regional Airport Authority was created in 2003 to manage the operations of the Airport. As the airport administration is controlled by another entity, economic impacts associated with the airport are not included in the Report.
- 3. B Street and Broadway Piers/Centre City Embarcadero.** This area contains some of the most dense uses in the District including:
 - Miles of scenic pedestrian promenades
 - High-rise hotels with marina space
 - Cruise, boat excursion, and ferryboat facilities on and adjacent to the B Street and Broadway piers
 - The USS Midway Museum
 - Tuna Harbor with commercial fishing, the new Tuna Harbor Dockside Market and restaurant
 - Seaport Village and The Headquarters, centers for specialty shopping and dining
 - The San Diego Convention Center
 - Popular waterfront parks and open space

Figure 9 Illustration of Port District's Jurisdiction, with Sub-Areas Designated



Source: Port Master Plan

4. **Marine Cargo Terminals.** Tenth Avenue Marine Terminal (TAMT) is a 96-acre omni-terminal that handles refrigerated containers, bulk commodities, and break-bulk cargo. The Dole Fresh Fruit Company imports nearly 100 million bananas per month through this terminal. Bananas and other fresh fruit are distributed from TAMT to stores between San Diego and the Canadian border, and east to the Rockies. Free flowing bulk products handled at TAMT include bauxite, cement products, soda ash, and fertilizers used in the local construction industry. Break-bulk cargo such as steel and large finished products used in shipbuilding, windmill components, and turbines are handled in the open areas of the terminal. Liquid fuel tanks provide storage and distribution for petroleum products to the San Diego Regional Airport, as well as ocean-going vessels, tug boats and other support vessels. TAMT is also the homeport facility for the National Oceanic and Atmospheric Administration's (NOAA) research vessel, Reuben Lasker.

National City Marine Terminal (NCMT) is the Port of San Diego's roll-on/roll-off terminal, operated by Pasha Automotive Services. NCMT processes automobiles and other rolling vehicles for import and export, including approximately one out of every 10 imported new cars sold in the US, as well as lumber for Southern California from the Pacific Northwest. Pasha Hawaii Transport Lines also moves automobiles, household goods, and other specialty cargo on bi-weekly vessel service between Hawaii and NCMT.

Together the two marine terminals serve as one of 17 Strategic Ports in the United States under an agreement with the Department of Defense administered by the Department of Transportation. These facilities provide the port infrastructure and services to support the deployment of U.S. military equipment and vehicles during times of national emergency. Both terminals have on-dock rail capability with BNSF Railway.

5. **Coronado Cays/Chula Vista Bayfront.** This area is developed with parks, boat ramps, a recreational vehicle (RV) park, marinas, a boatyard, and a re-created wildlife habitat island.
6. **Imperial Beach.** This area contains largely recreation-oriented development, including the Imperial Beach Pier on the Pacific Ocean, Portwood Pier Plaza, ancillary restaurants, and retail stores.
7. **Silver Strand South.** This portion of Coronado—separated from the Coronado Bayfront by the Navy Amphibious Base—is occupied by a residential community with the Port-administered portion of the area largely comprised of commercial recreational uses (marinas), public parks, and other recreation uses.
8. **Coronado Bayfront.** The Port-administered areas of the Coronado Bayfront contain hotels, retail, piers, and public parks.
9. **Military Areas.** While most of the military uses along the waterfront are located on federal land (not District land), a small amount of District land (about 26 acres) is used by the U.S. Navy. Given the size and economic importance of the military presence in San Diego, many analyses have examined the economic contribution of this sector. In addition, local influence on these uses is limited. Therefore, the military uses on District property are not included in this analysis.

3. *ECONOMIC IMPACTS METHODOLOGY*

This chapter defines economic impacts, discusses the analysis methodology, details a selection of the major District users, and provides a detailed report of the results of the economic analysis. Information on tax revenues is provided in the next chapter.

Description of Economic Impacts

The core economic impacts of the Port District are derived from the economic activities—sales, employment, and operating expenditures (purchases of goods and services)—that occur on District property. The analysis of these activities includes estimates of on-site employment and/or sales (revenues) of businesses, not-for-profit organizations, and public sector entities. In addition, spending associated with ocean cruises and the convention center events, which both depend critically on District facilities, is a direct effect attributable to the District. Together, these economic activities constitute the direct effect of the District.

The next step in estimating economic impacts is accounting for the “ripple” or “multiplier” effects that result from the direct effects. The ripple effects are categorized as indirect or induced effects. Indirect effects are economic impacts on upstream businesses that supply inputs (goods and services) to production. Induced effects are economic impacts that are generated by the consumption expenditures of employees whose jobs are directly attributable to the District. In this analysis direct, indirect, and induced effects are defined as follows:

- The **Direct Effect** is the initial economic impact that is attributable to the District, including revenues and employment supported by business establishments located in the District and other first-round spending that would not occur but for the District (i.e., off-site direct effects from spending by cruise- and Convention Center-related visitors occurring off of District property).
- The **Indirect Effect** is a measure of the economic impacts generated by “upstream” industry-to-industry transactions that supply inputs to the production of goods and services consumed by businesses and other economic activities attributable to the District.
- The **Induced Effect** is a measure of the economic impacts generated when employees from the direct and indirect effects spend their labor income.
- The **Total Impact** is the sum of the direct, indirect, and induced effects. The total impact measures the overall impact of District activities on the San Diego economy.

This report measures economic impact using common economic metrics, including employment, labor income, and output as defined below.

- **Employment** measures the number of jobs, a count that includes part-time and full-time workers.

- **Labor Income** represents the payments to labor in the form of both wages or salaries and benefits paid by the employer (e.g., health, retirement benefits). It also includes proprietor income.
- **Economic Output** is equivalent to sales or revenues achieved by businesses and other employment entities.

Data Collection and Analysis

The goal of the data collection process was to quantify the direct impacts by collecting data on the number of employees and/or the revenue generated by business establishments located on Port Tidelands. The study also collected and analyzed expenditure data to quantify the economic impact of inflows of dollars into the County's economy from 1) business expenditures by cruise lines, 2) cruise passengers and crew expenditures, and 3) expenditures by visitors and organizers of events at the San Diego Convention Center.

Overview of Input-Output Methodology

Input-Output (I/O) analysis is premised on the concept that industries in a geographic region are interdependent in the sense that they purchase outputs from and supply inputs to other industries within and outside the region. For example, consider the implications of an operating expenditure by a hotel establishment. Hotels purchase goods from producers, who in turn purchase raw materials from suppliers. Thus, an increase/decrease in the demand for hotel services will stimulate an increase/decrease in output and employment in the interdependent secondary industries.

Regional economic impact analysis and I/O models provide a means to quantify economic effects stemming from a particular industry or economic activity. Specifically, I/O models produce quantitative estimates of the magnitude of regional economic activity resulting from some initial activity (e.g., hotel or manufacturing operations). I/O models rely on economic multipliers that mathematically represent the relationship between the initial change in one sector of the economy and the effect of that change on economic output, employment, and income in other industries. These economic data provide a quantitative estimate of the magnitude of shifts in jobs and revenues within a regional or state economy.

This study uses the IMPLAN model to analyze economic impacts generated by economic activities attributable to the San Diego Unified Port District in the San Diego Economy. IMPLAN (Impact Analysis for Planning) software is an I/O modeling system licensed by IMPLAN Group, LLC that utilizes data collected from several state and federal agencies, including the Bureau of Economic Analysis, Bureau of Labor Statistics (BLS), and the Census Bureau. The model is widely used in the U.S. for estimating economic impacts across a wide array of industries and economic settings.

4. ANALYSIS OF DIRECT ECONOMIC ACTIVITY

The analysis reflects data concerning five key facets of economic activity that are attributable to the District, including:

- Port Tenants (excluding cargo-related businesses);
- Marine Cargo Terminals;
- Cruise Terminal ;
- San Diego Convention Center; and
- Public Sector.

Figure 10 summarizes the direct effect of each of the District's primary economic contributors. The following narrative provides an overview of each of these economic drivers.

Figure 10 Summary of Direct Effects by Economic Activity

| Economic Activity | Economic Output (millions) | Employment |
|--------------------|-------------------------------|---------------|
| District Tenants | \$4,402 | 33,500 |
| Marine Cargo | \$234 | 1,596 |
| Cruise Terminal* | \$42 | 428 |
| Convention Center* | \$593 | 7,534 |
| Public Sector | <u>\$154</u> | <u>569</u> |
| Total | \$5,425 | 43,627 |

* Additional impacts above those captured by District tenants.

District Tenants

Port tenants include a great diversity of businesses and organizations. The cargo terminals and surface transportation (trucks and railways) processed almost 1.8 million tons of cargo in 2015. Major cargo-related tenants include Dole Food Company and The Pasha Group (global logistics). Significant industrial users include shipbuilders and boat repair companies, as well as turbine manufacturers. Notable firms include BAE Systems, Solar Turbines, and National Steel and Shipbuilding Company. The cruise ship terminal located on District land supported 77 cruise calls and passenger throughput of 215,000 in 2015. Additionally, maritime activities ranging from commercial seafood enterprises such as Chesapeake Fish to pleasure and charter boating operators like Point Loma Sportfishing, as well as hundreds of associated businesses, including boat dealers, repair services, wholesalers, and retail suppliers operate on District land. Further,

visitor attractions such as the San Diego Convention Center and numerous hotels and resorts offer roughly 8,000 rooms, and visitor-oriented retail, restaurants, and recreation businesses also are located within the Port's jurisdiction. This analysis estimates direct economic output and employment associated with District tenants, excluding cargo-related tenants, at roughly \$4.4 billion and 33,500 jobs.

Marine Cargo Terminals

The Port has two marine cargo terminals, Tenth Avenue and National City, which processed about 1.8 million tons of cargo in 2015 including automobiles, agricultural commodities, lumber, and wind energy components. Four key economic sectors are involved in providing cargo and vessel handling services at the Port, including:

- Surface transportation sector;
- Maritime services sector;
- Shippers/consignees using the Port; and
- Maritime Operations Department of the Port of San Diego.

The marine cargo terminals are key conduits for commodities important to many industries in San Diego and beyond. For example, containerized fruit distribution occurs by truck, with deliveries to grocery retailers throughout California and as far east as the Rocky Mountain region. Steel is used locally in shipbuilding as well as trucked into northern Mexico. Petroleum is distributed from the Tenth Avenue Marine Terminal by pipeline and by barge. Overall, this analysis estimates that these marine terminal activities support about \$234 million in direct economic output and 1,600 direct jobs (excluding District employment and spending).

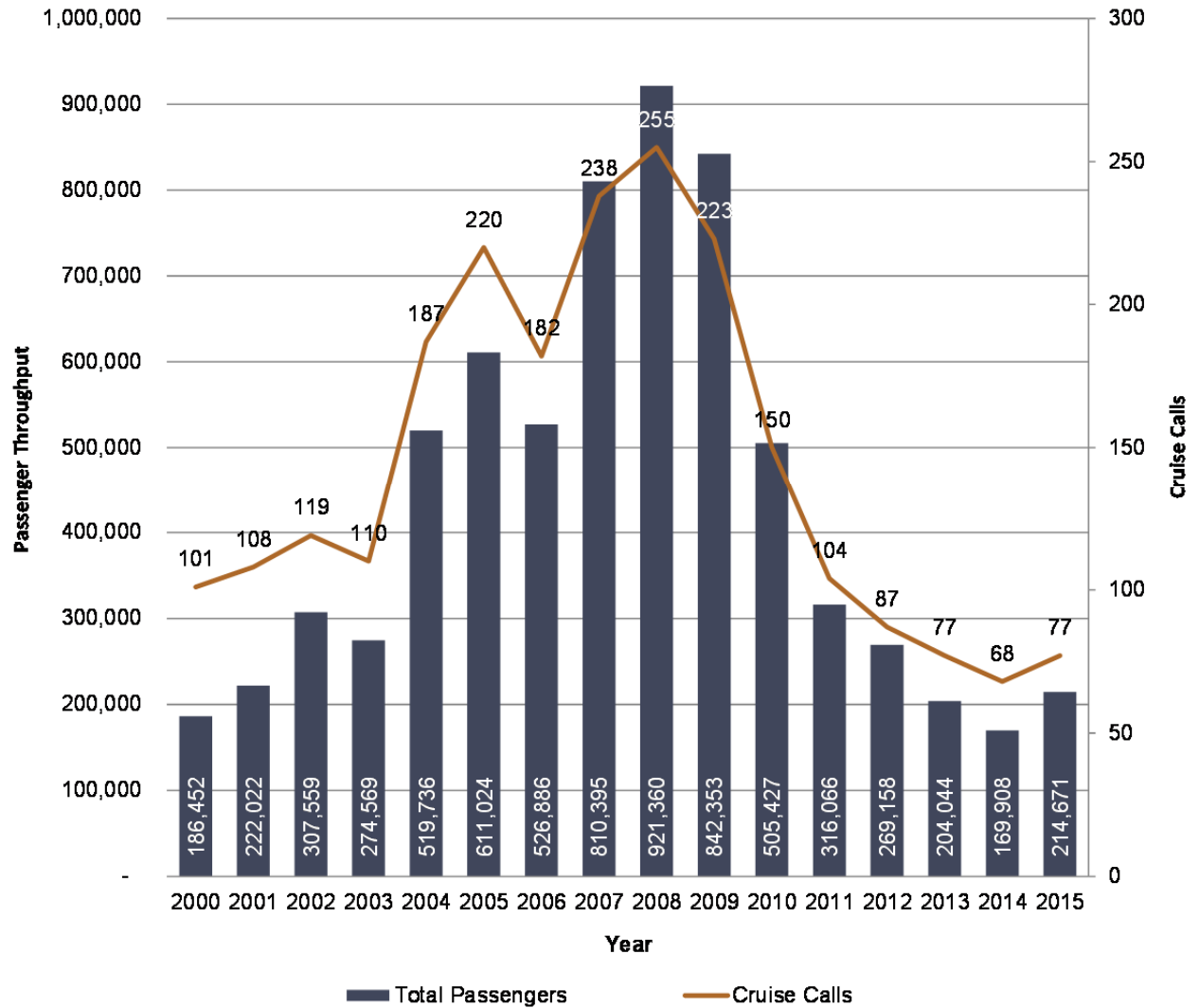
San Diego Convention Center (SDCC)

The San Diego Convention Center (SDCC) operates a world-class venue for hosting major conventions, trade shows, meetings and special events. According to its annual report for fiscal year 2015, SDCC hosted 172 events attracting over 808,000 attendees. The operations of SDCC as well as visitor expenditure (which include attendees, exhibitors and event organizers) generate significant economic impacts in the County's economy. This analysis considered 2015 expenditures by attendees, which included local outlays associated with event costs (exhibitors and event organizers), as reported by the SDCC. Based on these data, this analysis estimates the direct effect of the SDCC at approximately \$590 million in spending and more than 7,500 jobs, in addition to the spending and jobs at businesses on District land.

Cruise Industry

The Port of San Diego receives cruise ships at the B Street Cruise Terminal and Broadway Pier locations. Cruise ships making calls in San Diego are still down from a high in 2008. However, 2014 appears to have been a cyclical low for the cruise industry as 2015 data reveal an uptick from that low. While there was the same number of cruise calls in 2015 as in 2013, throughput was up by more than 10,000 passengers (see **Figure 11**). In addition to passenger spending, the cruise industry generates economic impacts in San Diego County from expenditures made by cruise lines and ship crews. This analysis estimates that in addition to economic impacts enjoyed by District tenants, the cruise activity within the District directly supports \$42 million in economic output and roughly 430 jobs in San Diego County.

Figure 11 San Diego Cruise Passengers and Cruise Calls 2000-2015



Source: Business Research & Economic Advisors and Port of San Diego

Public Sector

Direct public sector activity within the District primarily is composed of the employment and revenue of the San Diego Unified Port District itself. While the District leases significant land holdings to a number of public sector entities (e.g., local jurisdictions, San Diego County, State of California), the majority of the leases with public entities are for easements, parks, and rights of way. This analysis does, however, also include the Coronado Municipal Golf Course as a public sector economic activity located within the Tidelands. Including District operations and the golf course, this analysis estimates that \$154 million in economic output and 569 jobs are directly attributable to public sector activities within the District jurisdiction.

5. TAX REVENUE EFFECTS

In addition to consideration of the economic benefits of the District, this analysis also estimates the fiscal revenues generated by District properties located within each of the member jurisdictions. This 2015 analysis relies on District tenant sales data to estimate sales tax and transient occupancy tax, and San Diego County Assessor data to estimate property tax revenue. The estimates are considered conservative as they do not reflect business-to-business sales and use tax, other business taxes (e.g., business license tax), or in most cases taxes paid by employees (e.g., income tax, property tax, sales tax).¹³ Since the scope of the analysis is focused on economic activity directly tied to District land, the evaluation of taxes focused on those revenues most closely-related to the Tidelands.

To generate property tax estimates, the analysis took a deeper look at possessory interest taxes than previous fiscal impact studies conducted for the District. EPS corresponded with the County Assessor's office to determine total assessed value and property tax rates for each Tax Rate Area within the District jurisdiction. The results indicate that possessory interest taxes associated with tenant operations on port land are significant for the County and local entities. **Figure 12** summarizes 2015 tax revenues calculated by this analysis, including possessory interest tax revenue.

Overall, the analysis finds that 2015 tax revenue attributable to the District is in excess of \$100 million, excluding cargo business activity. With cargo-related activity and associated tax revenue (estimated by Martin Associates), the total tax revenue attributable to the District is greater than \$130 million. As shown in Figure 13, this tax revenue estimate is dramatically higher than had been estimated in prior years, primarily due to the inclusion of possessory interest tax in the analysis.

¹³ Note that tax estimates associated with District cargo activities (prepared by Martin Associates) do include business and personal income tax.

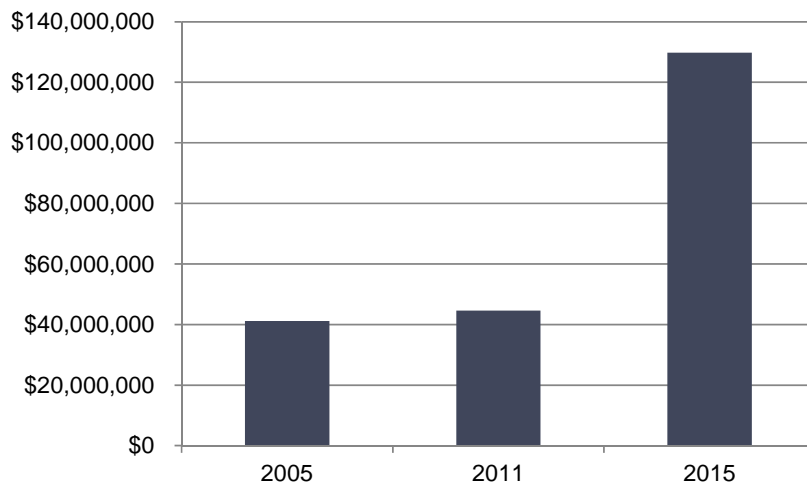
Figure 12 Summary of 2015 Tax Revenues from District Tenants¹⁴

| City | Property Tax | Sales Tax ¹ | Transient Occupancy Tax | Total |
|--|---------------------|------------------------|-------------------------|----------------------|
| San Diego | \$37,912,000 | \$7,706,000 | \$44,781,000 | \$90,400,000 |
| Chula Vista | \$367,000 | \$440,000 | \$250,000 | \$1,058,000 |
| Coronado | \$2,023,000 | \$680,000 | \$4,544,000 | \$7,248,000 |
| Imperial Beach | \$2,000 | \$11,000 | \$0 | \$13,000 |
| National City | <u>\$1,361,000</u> | <u>\$138,000</u> | <u>\$0</u> | <u>\$1,499,000</u> |
| Total | \$41,666,000 | \$8,975,000 | \$49,576,000 | \$100,216,000 |
| Marine Terminal-Related State and Local Taxes² | | | | \$29,583,000 |
| Grand Total | | | | \$129,799,000 |

¹ Sales tax estimates do not consider potential business-to-business tax revenue.

² State and local income tax burdens attributable to cargo activity (Martin Associates 2016)

Figure 13 Tax Revenue Estimate Comparisons



¹⁴ Table excludes nearly \$30 million in state and local tax effects attributable to Carto activity reported by Martin Associates 2015.

APPENDIX A:

The Local and Regional Economic Impacts of the Port of San Diego Marine Terminals

Martin Associates



The Local and Regional Economic Impacts of the Port of San Diego Marine Terminals



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August 1, 2016

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I. INTRODUCTION AND OVERVIEW

The Port of San Diego is located along the southern coast of California. The maritime cargo operations at the Port consist of two public cargo terminals, Tenth Avenue Marine Terminal and National City Marine Terminal. These terminals handle containers, automobiles, fertilizer, soda ash, petroleum, steel, windmill components, and miscellaneous project cargo. Tenth Avenue and National City marine terminals handled nearly 1.8 million tons of cargo in FY 2015, which moved on more than 400 vessels and barges calling these marine terminals.

Containerized fruit and automobiles account for nearly 75% of the 1.8 million tons of cargo handled at the Port of San Diego marine terminals. The containerized fruit is imported from South and Central America and distributed via truck to grocery retailers as far east as the Rocky Mountain region and as far north as Vancouver, British Columbia. Automobiles are imported, processed, and distributed to car dealerships throughout the western United States via truck and rail. Autos are also exported via National City Marine Terminal.

With respect to dry bulk commodities, fertilizer is imported and distributed via truck throughout the southwest farming regions. Soda ash is mined in Trona, California and railed to Tenth Avenue marine terminal for export.

General cargo handled at the Port of San Diego marine terminals consists of steel, windmill components and miscellaneous project cargo. Steel is used locally in ship building as well as trucked into northern Mexico. Windmill components are distributed to windmill farms in Eastern California such as the Mojave Desert. A large portion of the miscellaneous project cargo is also used in the local shipbuilding operation. These products range from propellers to lashing bridges to other prefabricated vessel components. These components are trucked or barged from Tenth Avenue marine terminal to NASSCO. This underscores the importance of Tenth Avenue to NASSCO's operation.

Petroleum is barged to Tenth Avenue Marine Terminal and distributed directly at the terminal via pipeline or via barge to bunker vessels in the San Diego Bay.

The purpose of this economic impact analysis is to quantify the impact of the Port of San Diego marine terminals. 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. In addition to quantifying the impact of loading and off-loading the vessels, activity associated with importing and exporting products that are locally produced and consumed are also captured. These activities create jobs, income, revenue and taxes at every stage of the logistics supply chain. To measure the economic impacts of the Port of San Diego 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 the Port of San Diego cargo terminals and the firms providing cargo services within the Port of San Diego. Specific re-spending models have been developed for the San Diego area to reflect the unique economic and consumer profiles of the regional economy.

This study focuses on impacts generated during FY 2015, which uses the latest data available from the Port of San Diego. 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 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 and Warehouse Union (ILWU), freight forwarders and customhouse brokers, vessel agents, 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's marine terminals were closed. These jobs are, for the most part, local jobs and are held by residents of San Diego County.

- ***Induced jobs*** are jobs created in the San Diego area by the purchases of goods and services by those *individuals* directly employed by each of the Port's marine terminals. These jobs are based on the local purchase patterns of San Diego 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 San Diego area as the result of purchases for goods and services by the *firms* directly impacted by cargo 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*** are 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 marine 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 retail jobs primarily associated with containerized cargo and automobiles.
- **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 San Diego area of those directly employed as the result of Port of San Diego 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 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 the Port of San Diego cargo activity.

2. METHODOLOGY

2.1. Data Collection

The impacts of the Port of San Diego marine terminals presented in this report were estimated based on telephone and personal interviews with 156 firms in the San Diego area. These firms represent the universe of the cargo businesses (with the exception of trucking and freight forwarding firms) operating at the Port of San Diego. Each firm surveyed provided Martin Associates with detailed employment levels (both full time and part time), annual payroll, local purchases and the residency of

the employees¹. It is to be emphasized that a 98% response rate was achieved from these firms. Data was also collected from the Port of San Diego maritime division to estimate the FY 2015 impacts. This interview data was then used to develop an operational model for the San Diego area to measure the impacts generated by maritime activity at the Port of San Diego marine terminals.

2.2. Direct Impacts

The results of these 156 interviews were 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 marine 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 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 Port's marine terminals 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 California, which are classified as induced. To estimate these induced jobs, a personal earnings multiplier for the San Diego region 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 the San Diego Metropolitan Statistical Area, as developed from the U.S. Bureau of Labor Statistics, Consumer Expenditure Survey, 2013-2014). These purchases are next converted into retail and wholesale induced jobs in the regional economy.

¹ Individual firm data is collected by Martin Associates to develop the overall economic impact models. Company specific data is held strictly by Martin Associates and not provided to the Port or any other entity under the confidentiality agreement between Martin Associates and the individual companies.

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 geographic accuracy where purchases at the remaining levels occur.

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 Port's marine cargo terminals. 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 156 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 San Diego region. 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 Port of San Diego 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 San Diego terminals, and therefore these firms can and do use other ports.*** 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.²

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 California) are applied to the total direct, induced and indirect income impacts to estimate total state and local taxes created by activity at the Port of San Diego marine terminals.

¹ The value of cargo moving via the marine terminals was determined from USA Trade OnLine, while the ratios of jobs to sales data for related California 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 breakdown by cargo results for the economic impact analysis of the Port of San Diego marine terminals.

Exhibit I-1: FY 2015 Economic Impact of Port of San Diego Marine Terminals

| | ECONOMIC IMPACTS |
|--|---------------------|
| JOBS | |
| DIRECT | 1,632 |
| INDUCED | 1,178 |
| INDIRECT | <u>406</u> |
| TOTAL | 3,216 |
| PERSONAL INCOME/LOCAL CONSUMPTION (\$1,000) | |
| DIRECT | \$92,786 |
| RE-SPENDING/LOCAL CONSUMPTION | \$145,321 |
| INDIRECT | <u>\$21,391</u> |
| TOTAL | \$259,498 |
| BUSINESS REVENUE (\$1,000) | \$268,835 |
| STATE AND LOCAL TAXES (\$1,000) | \$29,583 |
| LOCAL PURCHASES (\$1,000) | \$55,802 |
| RELATED USER IMPACTS | |
| USER JOBS | 11,537 |
| TOTAL VALUE OF OUTPUT (\$1,000) | \$1,580,164 |
| USER INCOME (\$1,000) | \$576,546 |
| USER STATE/LOCAL TAXES (\$1,000) | \$65,726 |

Totals may not add due to rounding

In FY 2015, the Port of San Diego marine terminals supported 14,753 jobs in the state of California. Of these jobs, 1,632 jobs are directly created by port activities, while another 1,178 induced jobs are generated in the San Diego area as a result of local purchases made by those directly employed due to Port of San Diego marine cargo activity. There are 406 indirect jobs supported in the San Diego region as the result of \$55.8 million of local purchases by directly dependent firms. Additionally, cargo

moving via the Port of San Diego marine terminals supports 11,537 related jobs throughout the state of California and western United States. The majority of these jobs are associated with the retail of containerized fruit and automobiles.

The 1,632 direct jobs received \$92.8 million of direct wage and salary income, for an average earning of \$56,854 per direct employee. This compares to an average wage throughout the state of California of \$55,260 in 2015.³ As a result of local purchases with this \$92.8 million of direct wages and salaries, an additional \$145.3 million of income and local consumption expenditures were created in the state of California. It is this re-spending impact that supported the 1,178 induced jobs.⁴ The indirect job holders received \$21.4 million in personal income. In total, \$836.0 million of personal income was supported by Port of San Diego marine cargo operations, including the \$576.5 million received by those employed with the related users of the Port.

Local businesses received \$268.8 million of sales revenue from providing services to the marine cargo activity, however this does not include the value of the cargo moving via the Port. The cargo activity at the Port created an additional \$1.6 billion of related economic output in the state.

As a result of the cargo activity at the Port of San Diego marine terminals, a total of \$95.3 million of state and local tax revenue was generated.

The total economic value of the marine cargo and vessel activity at the Port of San Diego is estimated at nearly \$2.0 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 \$268.8 million 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 \$145.3 million of re-spending and local personal consumption impact; and the \$1.6 billion of value of output supported by the related users. It is to be emphasized that the \$1.6 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 \$268.8 million of direct business revenue and the \$145.3 million of re-spending and local consumption expenditures would be lost from the local economy. The related economic value demonstrates the magnitude of influence of

³ U.S. Bureau of Labor Statistics, May 2015 State Occupational Employment and Wage Estimates California

⁴ 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.

the Port of San Diego marine terminals at a given point of time. It is to be emphasized that these components of the total economic value are non-additive.

The last economic impact study of the Port of San Diego 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 CY 2012 and FY 2015, cargo activity at the Port's marine terminals increased by nearly 400,000 tons. As a result, the overall economic impact of the port operations increased. Direct, induced and indirect jobs grew by 537 jobs, and overall economic value of the Port grew from \$1.3 billion to nearly \$2.0 billion.

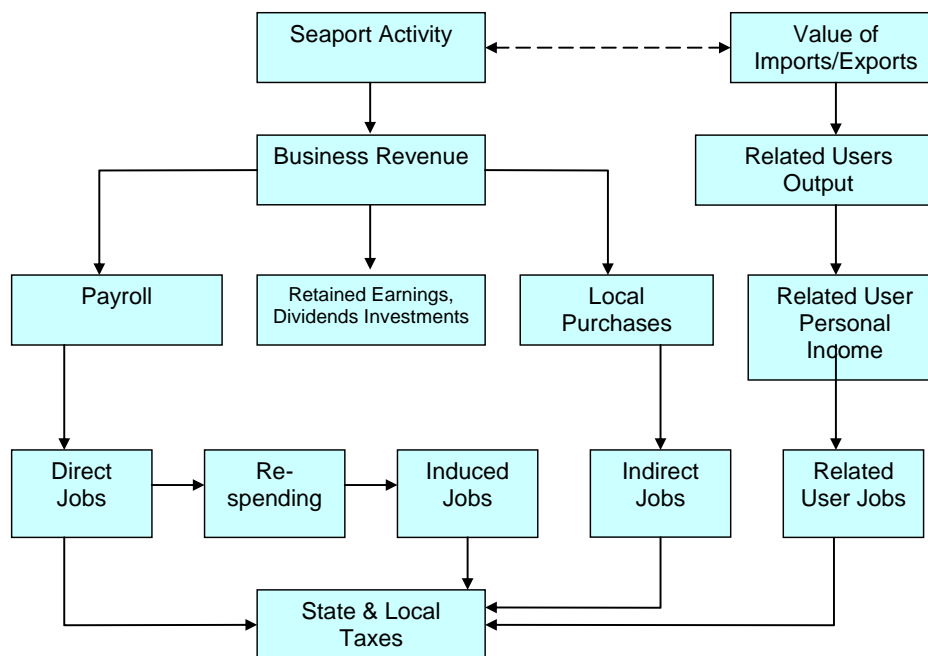
In summary, there are 1,632 jobs in the San Diego region that are directly dependent on the cargo activity occurring at the Port of San Diego marine terminals. The total contribution to the state's economy, including value of economic activity and re-spending is nearly \$2.0 billion. Finally, as noted, the directly generated jobs receive an average annual salary of \$56,854, which is slightly greater than the average state-wide annual salary in California.

The balance of the report describes in detail the impacts created by maritime cargo operations at the Port of San Diego.

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 of San Diego 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 the Port of San Diego 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 of San Diego 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** are 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 at the Port of San Diego were to cease. These jobs include retail jobs associated primarily with containerized cargo and automobiles. It is important to note that these shippers/consignees also use other ports and are not completely dependent upon the Port of San Diego. The level of

employment with these firms is driven by the demand for the firms' products, not because the Port of San Diego is used. Therefore, these related jobs are not dependent upon port activity, and their degree of dependence on the Port of San Diego 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 San Diego 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. 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 marine terminals. These are the:

- Surface Transportation Sector;
- Maritime Services Sector;
- Related Shippers/Consignees Sector; and
- Port of San Diego Maritime Division.

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 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 to and from Port of San Diego marine terminals;
- 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 International Longshoremen and Warehouse Union (ILWU), 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, as well as the petroleum terminal and pipeline operators which includes petroleum tank farm operations; 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), U.S. Immigration and Customs Enforcement (ICE) and U.S. Coast Guard, 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 terminals. Only the user industry activity that can be linked to the movement of cargo (either raw materials or finished products) through the Port of San Diego is considered in this related user impact.

1.4. Port of San Diego Maritime Division

The Port of San Diego Maritime Division includes those individuals whose purpose is to oversee maritime cargo activity.

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 Port of San Diego marine terminals:

- Containers;
- Automobiles;
- Steel;
- Lumber;
- Miscellaneous Break Bulk;

- Cement;
- Fertilizer;
- Windmill Components;
- Soda Ash;
- Petroleum.

3. MARITIME CARGO EMPLOYMENT IMPACTS

The employment generated by maritime cargo activity at the Port of San Diego marine terminals is estimated in the following section.

- First, the total employment that is in some way related to the activities at cargo terminals is estimated from the FY 2015 interview process of 156 tenants and terminal operators, as well as service providers and FY 2015 data obtained by the Port of San Diego 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, ILWU/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 marine terminals are described.

It is estimated that 14,753 jobs are directly or indirectly supported by activity at the Port of San Diego marine terminals. Of the 14,753 jobs:

- 1,632 jobs are directly generated by activities at the marine terminals and if such activities should cease, these jobs would be discontinued over the short term.
- 1,178 jobs (induced jobs) are supported by the local purchases of the 1,632 individuals directly

generated by port activity at the marine terminals. An additional 406 indirect jobs were supported by \$55.8 million of purchases in the local and regional economy by firms providing direct cargo handling and vessel and barge services.

- 11,537 jobs are related to cargo loaded and discharged over the docks at the Port of San Diego marine terminals. These jobs are supported in the state's manufacturing and retail and wholesale and distribution industries and the in-state industries supporting the movement, processing and distribution of all commodities, primarily concentrated with containerized fruit and automobiles within the western United States.

3.1. Direct Maritime Cargo Job Impacts

In FY 2015, nearly 1.8 million tons of waterborne cargo moved via the Port of San Diego marine terminals. As a result of this activity, 1,632 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 1,632 direct jobs by type of job. The exhibit indicates that the majority of direct jobs (582) are with terminal operators located at Tenth Avenue and National City marine terminals. Jobs in the surface transportation sector (510) responsible for moving cargo to and from the terminals are the second largest impact category, followed by members of the International Longshore and Warehouse Union (234).

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 cargo terminal, then this worker is counted as .5 jobs.

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

| IMPACT CATEGORY | DIRECT JOBS |
|--|--------------|
| SURFACE TRANSPORTATION | |
| TRUCK | 465 |
| RAIL | 45 |
| SUBTOTAL | 510 |
| MARITIME CARGO SERVICES | |
| TERMINALS | 582 |
| ILWU | 234 |
| MARITIME SERVICES/MARINE CONSTRUCTION | 113 |
| GOVERNMENT | 66 |
| FORWARDERS/CUSTOMSHOUSE BROKERS | 47 |
| TOWING/TUG ASSIST | 24 |
| AGENTS | 15 |
| PILOTS | 5 |
| SUBTOTAL | 1,087 |
| PORT OF SAN DIEGO MARITIME DIVISION | 35 |
| TOTAL | 1,632 |

Totals may not add due to rounding

3.1.2. Direct Job Impacts by Commodity

The majority of the 1,632 jobs considered to be generated by port activity can be associated with the handling of specific commodities or commodity groups. It should be noted that commodity-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 these categories. For example, maritime construction may occur at a terminal that is multi-use and cannot be attributed to a specific commodity. As a result, employment in these groups (which totaled 239) 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 |
|--------------------------|--------------|
| AUTOMOBILES | 761 |
| CONTAINERS | 304 |
| LUMBER | 156 |
| MISCELLANEOUS BREAK BULK | 89 |
| CEMENT | 27 |
| FERTILIZER | 23 |
| STEEL | 15 |
| PETROLEUM | 9 |
| WINDMILL COMPONENTS | 5 |
| SODA ASH | 3 |
| NON-ALLOCATED | 239 |
| TOTAL | 1,632 |

Totals may not add due to rounding

Automobiles support the largest number of direct jobs, 761, followed by the import of containerized fruit (304 jobs), the movement of lumber (156 jobs), and then the distribution of miscellaneous break bulk and project cargo (89 jobs). The majority of the remaining direct jobs are supported by the movement of steel, cement, fertilizer, windmill components, other dry bulk and petroleum products.

3.1.3. Distribution of Direct Cargo Jobs by Place of Residence

To underscore the geographic scope of the impacts generated by the marine terminals, Exhibit II-4 presents the distribution of the 1,632 direct jobs 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, about nearly 98% of the direct job holders reside in San Diego County – 40.1% reside in San Diego while another 57.8% live in other parts of San Diego County.

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

| CITY/COUNTY | RESIDENCY PERCENT | DIRECT JOBS |
|--------------------------------|----------------------|---------------------|
| <i>SAN DIEGO COUNTY</i> | <i>97.9%</i> | <i>1,597</i> |
| SAN DIEGO | 40.1% | 654 |
| CHULA VISTA | 29.7% | 485 |
| NATIONAL CITY | 12.4% | 202 |
| EL CAJON | 3.9% | 63 |
| IMPERIAL BEACH | 2.7% | 44 |
| ESCONDIDO | 2.7% | 43 |
| OTHER SAN DIEGO | 2.1% | 34 |
| LEMON GROVE | 1.0% | 16 |
| LA MESA | 0.9% | 15 |
| SANTEE | 0.8% | 13 |
| CARLSBAD | 0.8% | 13 |
| CORONADO | 0.3% | 5 |
| VISTA | 0.2% | 3 |
| OCEANSIDE | 0.2% | 3 |
| ENCINITAS | 0.1% | 2 |
| POWAY | 0.1% | 2 |
| <i>OTHER COUNTIES</i> | <i>2.1%</i> | <i>35</i> |
| TOTAL | 100.0% | 1,632 |

Totals may not add due to rounding

3.2. Induced Jobs

The 1,632 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, 1,178 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 1,632 direct jobs make local purchases for goods and services. These local purchases by the firms dependent upon the cargo facilities generate additional local jobs - indirect jobs. Based on interviews with the cargo-related firms, these firms made \$55.8 million of local and in-state purchases. These direct local purchases created an additional 406 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 11,537 jobs with regional jobs are related to cargo moving via the Port of San Diego marine terminals. It is to be emphasized that these jobs are only related jobs, not jobs dependent upon the Port of San Diego marine terminals.

4. TOTAL ECONOMIC VALUE AND BUSINESS REVENUE IMPACTS

The total economic value of the marine cargo and vessel activity at the Port of San Diego 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 \$2.0 billion. This includes the \$268.8 million 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 \$145.3 million of re-spending and local personal consumption impact; and the \$1.6 billion of value of output supported by the related users. This \$1.6 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 \$1.6 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 \$268.8 million of direct business revenue, and the \$145.3 million of re-spending and local consumption expenditures would be lost from the local economy. The related economic value demonstrates the magnitude of influence of the Port of San Diego marine terminals at a given point of time.

4.1 Direct Business Revenue of Providing Services

The balance of the discussion focuses on the \$268.8 million of direct business revenue generated from the provision of services to the cargo, vessels and barges handled at the Port of San Diego marine terminals.

Exhibit II-5 shows the distribution of this revenue impact by category and economic sector. As this exhibit indicates, the surface transportation sector receives the largest share of the total revenue impact, \$114.6 million, followed by terminal and stevedoring operations that receive about \$77.3 million.

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

| IMPACT CATEGORY | REVENUE (\$1,000) |
|--|----------------------|
| SURFACE TRANSPORTATION | |
| TRUCK | \$85,069 |
| RAIL | <u>\$29,556</u> |
| SUBTOTAL | \$114,624 |
| MARITIME CARGO SERVICES | |
| TERMINALS | \$77,334 |
| MARITIME SERVICES/MARINE CONSTRUCTION | \$24,067 |
| FORWARDERS/CUSTOMSHOUSE BROKERS | \$9,467 |
| TOWING/TUG ASSIST | \$6,097 |
| PILOTS | \$1,694 |
| AGENTS | \$236 |
| GOVERNMENT | <u>N/A</u> |
| SUBTOTAL | \$118,895 |
| PORT OF SAN DIEGO MARITIME DIVISION | \$35,316 |
| TOTAL | \$268,835 |

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 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 marine terminals.

Exhibit II-6: FY 2015 Cargo Revenue Impacts by Commodity

| COMMODITY | REVENUE (\$1,000) |
|--------------------------|----------------------|
| AUTOMOBILES | \$113,234 |
| CONTAINERS | \$66,982 |
| MISCELLANEOUS BREAK BULK | \$10,808 |
| CEMENT | \$7,333 |
| WINDMILL COMPONENTS | \$4,254 |
| FERTILIZER | \$2,196 |
| SODA ASH | \$1,868 |
| LUMBER | \$1,174 |
| STEEL | \$1,155 |
| PETROLEUM | \$447 |
| NON-ALLOCATED | <u>\$59,382</u> |
| TOTAL | \$268,835 |

Totals may not add due to rounding

As this exhibit indicates, automobiles generate the largest direct revenue impacts, followed by containerized fruit.

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 \$92.8 million in personal wage and salary earnings. It is important to emphasize that the average annual earnings of a Port-dependent job is about \$56,854, compared to the state-wide average annual income of \$55,260. 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 marine terminals, an additional \$1.56 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 2.56 was used to estimate the total income and consumption impact of \$145.3 million, inclusive of the re-spending effect. This additional re-spending of the direct income generated the 1,178

induced job impacts.

The 406 indirect job holders earned \$21.4 million in indirect wages and salaries. The 11,537 related shipper/consignees of the cargo moving via the Port received about \$576.5 million of personal income.

Therefore, the total personal income impact and consumption impact created by the Port of San Diego cargo activity is estimated at just over \$836.0 million.

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 marine terminals. To estimate the per employee tax indices, total taxes received at each governmental level in California 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 \$29.6 million of state, county and local taxes. As a result of the economic activity created by the related shipper/consignees, an additional \$65.7 million of state and local taxes were generated for a total cargo tax impact of \$95.3 million. The state of California receives approximately 65% of the tax revenues, while the local governments received 35%⁷ of the tax impact as illustrated in Exhibit II-7.

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

| TAXES BY CATEGORY (\$1,000) | STATE | LOCAL | TOTAL |
|-----------------------------|-----------------|-----------------|-----------------|
| DIRECT, INDUCED, & INDIRECT | \$19,251 | \$10,332 | \$29,583 |
| RELATED | <u>\$42,771</u> | <u>\$22,955</u> | <u>\$65,726</u> |
| TOTAL | \$62,021 | \$33,287 | \$95,309 |

Totals may not add due to rounding

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*.

III. COMPARISON OF IMPACTS 2015 vs2012

The last economic impact study conducted for the Port of San Diego was conducted by Martin Associates in 2012, using Calendar Year 2011 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 San Diego region by the U.S. Bureau of Economic Analysis, has fallen from 3.21 to 2.56. 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.

Secondly, the results of a new Economic Census for 2012 were released by the U.S. Bureau of Census. In the previous study (2012), 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.⁸ 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 2012 economic impacts.

From an operational perspective, total tonnage handled at Port of San Diego marine terminals grew by about 0.4 million tons. The overall growth in tonnage was driven by automobiles handled at National City marine terminal, followed by containerized tonnage handled at Tenth Avenue marine terminal. Exhibit III-1 presents the changes in tonnages between CY 2011 and FY 2015.

⁸. www.economist.com/blogs/freexchange/2012/08/americas-jobless-recovery

Exhibit III-1: Change in Tonnage by Commodity, CY 2011-FY 2015

| COMMODITY | FY 2015 (1,000 TONS) | CY 2011 (1,000 TONS) | CHANGE (1,000 TONS) |
|--------------------------|-------------------------|-------------------------|------------------------|
| AUTOMOBILES | 650 | 359 | 291 |
| CONTAINERS | 717 | 619 | 98 |
| MISCELLANEOUS BREAK BULK | 107 | 92 | 15 |
| STEEL | 13 | 4 | 9 |
| FERTILIZER | 50 | 43 | 7 |
| SODA ASH | 50 | 45 | 5 |
| PETROLEUM | 72 | 91 | -19 |
| WINDMILL COMPONENTS | <u>0.627</u> | <u>38</u> | <u>-37</u> |
| TOTAL | 1659 | 1291 | 368 |

Excludes tonnage not moving via water / Totals may not add due to rounding

As a result of the growth in cargo, the dependent direct, induced, and indirect jobs increased by 537. When the non-dependent, related jobs are included, total jobs increased by more than 3,700 jobs. The Port of San Diego saw a loss of tonnage in windmill components and petroleum products used for bunkering vessels throughout the San Diego Bay. Exhibit III-2 shows the change in impacts between CY 2011 and FY 2015.

Exhibit III-2: Change in Economic Impacts, CY 2011 – FY 2015

| | FY 2015 | CY 2011 | CHANGE |
|--|-----------------|-----------------|----------------|
| JOBS | | | |
| DIRECT | 1,632 | 1,210 | 422 |
| INDUCED | 1,178 | 1,152 | 26 |
| INDIRECT | <u>406</u> | <u>317</u> | <u>89</u> |
| TOTAL | 3,216 | 2,679 | 537 |
| PERSONAL INCOME/LOCAL CONSUMPTION (\$1,000) | | | |
| DIRECT | \$92,786 | \$66,948 | \$25,838 |
| RE-SPENDING/LOCAL CONSUMPTION | \$145,321 | \$148,304 | -\$2,983 |
| INDIRECT | <u>\$21,391</u> | <u>\$16,726</u> | <u>\$4,665</u> |
| TOTAL | \$259,498 | \$231,978 | \$27,520 |
| BUSINESS REVENUE (\$1,000) | \$268,835 | \$210,210 | \$58,625 |
| STATE AND LOCAL TAXES (\$1,000) | \$29,583 | \$25,982 | \$3,601 |
| LOCAL PURCHASES (\$1,000) | \$55,802 | \$43,634 | \$12,168 |
| RELATED USER IMPACTS | | | |
| USER JOBS | 11,537 | 8,286 | 3,251 |
| TOTAL VALUE OF OUTPUT (\$1,000) | \$1,580,164 | \$957,521 | \$622,643 |
| USER INCOME (\$1,000) | \$576,546 | \$281,447 | \$295,099 |
| USER STATE/LOCAL TAXES (\$1,000) | \$65,726 | \$31,522 | \$34,204 |

Totals may not add due to rounding

Direct jobs increased by 422 jobs since CY 2011 and indirect jobs grew by 89, reflecting the increase of \$12.2 million of local purchases. Direct, induced, and indirect state and local taxes generated by port activity grew by \$3.6 million while directly dependent business revenue grew by \$58.6 million. This includes the revenue received from providing services to the vessels and cargo handled at the Port of San Diego marine terminals. Total economic value of the Port of San Diego cargo activity increased from \$1.3 billion in CY 2011 to nearly \$2.0 billion in FY 2015, while total jobs that are in some way related to the Port grew by 3,789 jobs. The total value of economic activity includes the direct revenue generated by the cargo terminals, the re-spending impact of personal income and local consumption, and the value of output of the related shippers/consignees using the Port.

The change in direct jobs by type of job is shown in Exhibit III-3. As shown in this exhibit, the largest gain occurred in the terminal employees. The primary driver of this increase is the number of

autos moving via the Port and associated processing jobs. The increase in surface transportation jobs is driven by an increase in total tonnage being shipped to and from inland destinations by truck and rail. The loss of government jobs is driven by a loss of billets in the United State Coast Guard between CY 2011 and FY 2015. The loss of billets is Coast Guard wide and not unique to San Diego. Towing jobs decreased between CY 2011 and FY 2015 reflecting the loss of lumber moving via barge. Lumber is currently being railed from the Pacific Northwest to San Diego and distributed locally by truck.

Exhibit III-3: Change in Direct Jobs by Job Category, CY 2011-FY 2015

| IMPACT CATEGORY | FY 2015 | CY 2011 | CHANGE |
|--|--------------|--------------|------------|
| SURFACE TRANSPORTATION | | | |
| TRUCK | 465 | 303 | 162 |
| RAIL | 45 | 30 | 16 |
| SUBTOTAL | 510 | 333 | 178 |
| MARITIME CARGO SERVICES | | | |
| TERMINALS | 582 | 325 | 257 |
| ILWU | 234 | 221 | 13 |
| MARITIME SERVICES/MARINE CONSTRUCTION | 113 | 104 | 9 |
| GOVERNMENT | 66 | 90 | -24 |
| FORWARDERS/CUSTOMSHOUSE BROKERS | 47 | 50 | -3 |
| TOWING/TUG ASSIST | 24 | 32 | -8 |
| AGENTS | 15 | 14 | 2 |
| PILOTS | 5 | 5 | 0 |
| SUBTOTAL | 1,087 | 841 | 246 |
| PORT OF SAN DIEGO MARITIME DIVISION | 35 | 37 | -2 |
| TOTAL | 1,632 | 1,210 | 422 |

Totals may not add due to rounding

In summary, between CY 2011 and FY 2015, the Port of San Diego marine terminals experienced a strong growth in cargo tonnage, adding nearly 0.4 million tons of cargo. The growth in cargo fueled the growth in 422 direct jobs at the Port of San Diego marine terminals.

The fact that the Port of San Diego continues to increase its importance in the local economy as a major source of job creation, particularly of jobs with an average annual salary of \$56,854, underscores the importance of the Port as a major catalyst in San Diego County and the state of California economies. In order to sustain this growth as an economic engine, it is critical that the Port continues to invest in terminal, rail and highway access infrastructure to meet future demand, and to continue to attract tenants to stimulate further economic development in Southern California. This suggests that the future growth of the Port will result in further job, income and tax growth for the region.



APPENDIX B:

Economic Impact Analysis of the San Diego Cruise Sector 2015

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ECONOMIC IMPACT ANALYSIS OF THE SAN DIEGO CRUISE SECTOR

2015



Prepared for

San Diego Unified Port District

June 2016

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EXECUTIVE SUMMARY

Business Research and Economic Advisors (BREA) was engaged by the San Diego Unified Port District (the Port) to conduct an analysis of cruise-related spending and its subsequent impact on the economy of the San Diego metropolitan area.¹ These economic benefits arise from three principal sources:

- onshore spending by cruise passengers and crew for goods and services associated with their cruise, including local transportation and tours and the pre- and post-cruise vacation spending;
- expenditures by the cruise lines for goods and services necessary for cruise operations, both local and global, including food and beverages, hotel supplies, and equipment; and
- spending by the cruise lines for port services at the Port of San Diego.

To achieve the project objectives, the Port provided data collected by the San Diego Tourism Authority and CIC Research, Inc. through surveys of San Diego visitors, including cruise passengers during 2013.² These included data on cruise passenger spending³, demographics and other attributes of cruise passenger visits. In addition, BREA utilized data on cruise-related expenditures specific to San Diego that are collected annually from the cruise lines.

This summary highlights the important findings for three principal areas of research:

- Economic Impacts,
- Passenger, Crew and Cruise Line Expenditures, and
- Cruise Passenger Demographic Characteristics.

Economic Impacts

During calendar year 2015, the 77 cruise ship calls at the Port of San Diego generated significant employment, income, and other economic benefits throughout the San Diego metropolitan area. As shown in Table ES-1, the major economic impacts of the San Diego cruise sector during 2015 were as follows.

- Including the indirect economic impacts, the spending of the cruise lines and their passengers and crew was responsible for the generation of \$82.07 million in final sales or output among San Diego businesses. This, in turn, generated 652 full-time equivalent (FTE) jobs in the San Diego MSA paying a total of \$35.93 million in employee earnings⁴.
- The San Diego cruises generated \$46.83 million in direct spending by the cruise sector. These expenditures, in turn, generated 333 direct jobs paying \$20.44 million in employee compensation.

¹ This includes all of San Diego county and the official title of the area is the San Diego–Carlsbad, CA Metropolitan Statistical Area (MSA).

² Visitors to San Diego – 2013: Profile of Cruise Passengers & Port Tideland Hotel Guests, San Diego Tourism Authority and CIC Research, Inc., August 19, 2014.

³ The passenger expenditure data for 2013 were adjusted for inflation from 2013 through 2015. Inflation rates specific to the San Diego–Carlsbad, CA MSA and category were utilized.

⁴ Earnings include wages and salaries and benefits. The terms earnings, compensation and employee income are used interchangeably in this report.

- Cruise passengers and crew directly spent \$26.4 million in expenditures creating more than 150 FTE in the trade, entertainment, lodging and food service sectors. These jobs generated just under \$9 million in earnings.
- Cruise lines directly spent \$20.47 million for goods and services in the San Diego metropolitan area in support of cruises originating at the Port. This spending created over 175 FTE jobs and generated about \$11.5 million in employee income.
- On a per call basis, the 77 cruise ship calls at San Diego in 2015 generated \$1.06 million in total output throughout San Diego county. This output, in turn, generated 8.5 annualized FTE jobs paying \$466,623 annualized earnings.

Table ES-1 – Summary of Cruise Industry Economic Impacts in San Diego, 2015

| | Final Sales (\$ Millions) | Earnings (\$ Millions) | Employment |
|---|--------------------------------------|-----------------------------------|-------------------|
| <i>Direct Economic Impacts</i> | \$46.83 | \$ 13.63 | 333 |
| <i>Direct Economic Impacts per Call</i> | \$608,168 | \$177,013 | 4.3 |
| Manufacturing | \$ 3.04 | \$ 0.64 | 11 |
| Wholesale & Retail Trade | \$ 17.02 | \$ 4.34 | 75 |
| Transportation & Warehousing | \$ 6.61 | \$ 2.16 | 82 |
| Financial & Business Services | \$ 7.07 | \$ 1.79 | 30 |
| Lodging | \$ 3.27 | \$ 1.05 | 45 |
| Food & Beverage Services | \$ 4.29 | \$ 1.18 | 37 |
| Other Services & Government | \$ 5.54 | \$ 2.47 | 53 |
| <i>Total Economic Impacts</i> | \$ 82.07 | \$ 35.93 | 652 |
| <i>Total Economic Impacts per Call</i> | \$1,065,844 | \$466,623 | 8.5 |
| Natural Resources & Construction | \$ 1.49 | \$ 0.50 | 5 |
| Manufacturing | \$ 3.52 | \$ 1.11 | 13 |
| Wholesale & Retail Trade | \$ 11.30 | \$ 4.78 | 49 |
| Transportation & Warehousing | \$ 12.08 | \$ 5.93 | 150 |
| Financial Services | \$ 6.10 | \$ 2.13 | 22 |
| Business & Professional Services | \$ 26.60 | \$ 9.90 | 132 |
| Lodging | \$ 6.03 | \$ 2.91 | 83 |
| Food & Beverage Services | \$ 3.71 | \$ 1.53 | 32 |
| Other Services & Government | \$ 11.24 | \$ 7.15 | 166 |
| <i>Indirect Economic Impacts</i> | \$ 35.24 | \$ 22.30 | 319 |
| <i>Indirect Economic Impacts per Call</i> | \$457,676 | \$289,610 | 4.2 |

Passenger, Crew and Cruise Line Expenditures

As shown in Table ES-2, during 2015 cruise ships made 77 calls at the Port of San Diego. These ships generated a throughput of nearly 215,000 passengers and over 163,000 passenger and crew onshore visits⁵ throughout the San Diego area. The major characteristics of passenger and crew visits and expenditures were as follows.

⁵ An onshore visit represents a daytime or overnight visit by a cruise passenger or crew to a San Diego area attraction, restaurant, hotel or other venue. Onshore visit and cruise visitor are used interchangeably in this report.

- Passengers accounted for 84% of the onshore visits generated by the cruise sector. There were 139,138 passenger visits (embarkations + intransit) and an estimated 26,536 crew visits.
- Twenty percent (20%) of all embarking cruise passengers had a pre- or post-cruise overnight stay at an area hotel. These passengers who stayed overnight in San Diego, either prior to or following their cruise, spent an average of 2.1 nights generating an estimated 15,700 room nights (double occupancy) at San Diego area hotels.
- During their visits to the San Diego area cruise passengers and crew spent \$26.36 million with area businesses. Expenditures for lodging, dining and entertainment (\$8.1 million) accounted for 31% of the total while general retail expenditures at \$9.55 million accounted for 36% of the total.
- The average cruise call in San Diego generated just over \$342,000 in passenger and crew onshore expenditures in the metropolitan area.

Table ES-2 – Passenger and Crew Visits and Spending in San Diego, 2015

| Passenger & Crew Spending | |
|--|------------------|
| Cruise Characteristics | |
| Cruise Ship Calls | 77 |
| Passenger and Crew Visits | 165,664 |
| Passengers | 139,128 |
| Crew | 26,536 |
| Passenger & Crew Expenditures (\$ Millions) | |
| Lodging | \$ 2.97 |
| Food & Entertainment | \$ 5.13 |
| General Retail (Clothing, Jewelry, Souvenirs, etc.) | \$ 9.55 |
| Other Purchases (Parking, Museums, Local Transit) | \$ 8.70 |
| Average Expenditure per Cruise | \$342,303 |

As shown in Table ES-3, the 77 cruises calling at the Port of San Diego also generated significant expenditures by the cruise lines in support of these cruises. These included expenditures for food and beverages consumed on the ships by passengers and crew, supplies for hotel operations and equipment utilized on the ships. In addition, San Diego businesses also supported cruises on a national and global basis, such as travel agents, legal firms and entertainment companies. The major characteristics of the expenditures by the cruise lines were as follows.

- Cruise lines spent another \$20.47 million with the Port of San Diego and area businesses in support of their cruises. Fifty-one percent (51%) of the expenditures, \$10.37 million, consisted of expenses for equipment and supplies for hotel, restaurant and bar operations, such as food and beverages, linens, cabin consumables and galley and laundry equipment.
- Cruise lines paid \$5.71 million for port fees, local transportation of passengers and crew and navigation services.
- The use of legal and other professional services, largely in support of national and global cruise operations, resulted in \$3.16 million in cruise line expenditures.
- Combined, passengers, crew and cruise lines spent \$46.83 million with San Diego area businesses, or just over \$608,000 per cruise.

Table ES-3 – Direct Cruise Sector Expenditures in San Diego, 2015

| Cruise Sector Spending | |
|---|----------------------|
| Category | (\$ Millions) |
| Equipment and Supplies | \$ 3.04 |
| Food & Beverages | \$ 7.33 |
| Transportation (Port Fees, Port Agents, Transit, etc.) | \$ 5.71 |
| Professional Services (Legal, Architectural, etc.) | \$ 3.16 |
| Other Services | \$ 1.24 |
| Total Cruise Line Spending | \$ 20.47 |
| | |
| Passenger & Crew Expenditures (\$ Millions) | \$ 26.36 |
| | |
| Total Cruise Sector Expenditures | \$ 46.83 |
| | |
| Average Expenditure per Cruise | \$608,168 |

Cruise Passenger Attributes

Passengers on cruise ships calling at the Port of San Diego came from around the globe and all income groups. The primary demographic characteristics of San Diego cruise passengers surveyed in 2013 are shown in Table ES-4 and were as follows.

- Just over half (53.5%) of San Diego cruise passengers were residents of California: Southern California (30.8%) and Northern California (12.7%).
- International passengers (or foreign residents) accounted for 13.2% of San Diego cruise passengers. Of these, 70% were from Canada and 19% were from Mexico.
- As a group, cruise passengers tend to have above average incomes. In the case of San Diego, the median household income of cruise passengers was \$98,700. In fact, nearly 17% of passengers had annual household incomes in excess of \$150,000.
- The median age of San Diego cruise passengers in 2013 was 53. Twenty-four percent (24%) were 65 years of age or older. Only 3.5% were under the age of 25.
- The average size of a San Diego cruise party was 2.2 passengers which is about average for most cruise ports.
- Twenty percent (20%) of the surveyed San Diego cruise passengers reported spending one or more nights in San Diego prior to and/or following their cruise. The average length of their stay was 2.1 nights.
- Only 2.4% of cruise passengers reported traveling with children.
- Including the cruise and overnight stays, San Diego cruise passengers reported that they spent an average of just over 11 days away from home during their cruise vacation.
- Twenty-one percent (21%) said that they were first time visitors to San Diego.

Table ES-4 – Major Demographic Characteristics of San Diego Cruise Passengers, 2013

| San Diego Cruise Visitors | |
|--|-----------------------|
| Place of Residence | |
| Southern California | 30.8% |
| Northern California | 12.7% |
| Other Pacific States | 7.3% |
| Mountain States | 19.8% |
| Midwestern States | 11.1% |
| Eastern States | 5.1% |
| Foreign | 13.2% |
| Median Household Income | \$98,700 |
| Less than \$60,000 | 15.8% |
| Between \$60,000 and \$100,000 | 35.3% |
| Between \$100,000 and \$150,000 | 32.3% |
| More than \$150,000 | 16.6% |
| Median Age | 53 |
| Percent Under 25 | 3.5% |
| Percent Between 25 and 44 | 26.9% |
| Percent Between 45 and 64 | 45.4% |
| Percent 65 and Older | 24.2% |
| Average Size of a Cruise Party | 2.2 Passengers |
| Percent of Cruise Visitors with Overnight Stay | 20.4% |
| Average Length of Overnight Stay | 2.1 Nights |
| Percent Traveling with Children | 2.4% |
| Average Days Away from Home | 11.3 Days |
| First Time Visitors | 21.1% |

Source: Visitors to San Diego – 2013: Profile of Cruise Passengers & Port Tidelands Hotel Guests, San Diego Tourism Authority and CIC Research, Inc., August 19, 2014.

INTRODUCTION

Cruise calls in San Diego usually fall into one of three categories: 1) roundtrip, 2) one-way, and intransit calls. Roundtrip cruises begin and terminate in San Diego. Thus, passengers embark on their cruise in San Diego and return to San Diego at the conclusion of the cruise. These cruises primarily make calls along the Pacific coast of Mexico. On one-way cruises passengers will begin their cruise in one port and terminate at another port. In the case of San Diego, these cruises usually sail between San Diego and Fort Lauderdale and transit the Panama Canal. These cruises make calls in Mexico, Central America and the Caribbean. So one group of passengers will embark on their cruise in San Diego and disembark in Fort Lauderdale and another group will embark in Fort Lauderdale and disembark in San Diego upon the ship's return. Intransit calls are cruise calls that are made by ships during the course of their itinerary. In the case of San Diego, these cruise calls are usually re-positioning cruises between the Caribbean and Alaska markets or Pacific coastal cruises.

Table 1 – San Diego Cruise Statistics, 2000 -2015

| Year | Cruise Calls | Embarks | Disembarks | Intransit | Total Passenger Throughput |
|------|--------------|---------|------------|-----------|----------------------------|
| 2000 | 101 | 47,149 | 47,816 | 91,487 | 186,452 |
| 2001 | 108 | 66,643 | 59,864 | 93,515 | 220,022 |
| 2002 | 119 | 137,965 | 137,393 | 32,201 | 307,559 |
| 2003 | 110 | 92,466 | 85,542 | 96,561 | 274,569 |
| 2004 | 187 | 190,100 | 171,534 | 158,101 | 519,735 |
| 2005 | 220 | 218,092 | 217,589 | 175,343 | 611,024 |
| 2006 | 182 | 176,445 | 173,924 | 176,517 | 526,886 |
| 2007 | 238 | 331,260 | 337,567 | 141,568 | 810,395 |
| 2008 | 255 | 396,808 | 408,035 | 116,517 | 921,360 |
| 2009 | 223 | 400,604 | 405,219 | 36,530 | 842,353 |
| 2010 | 150 | 242,742 | 246,160 | 16,525 | 505,427 |
| 2011 | 104 | 144,327 | 147,371 | 23,367 | 315,065 |
| 2012 | 87 | 105,187 | 101,419 | 62,552 | 269,158 |
| 2013 | 77 | 75,056 | 75,123 | 53,865 | 204,044 |
| 2014 | 68 | 49,381 | 51,114 | 69,413 | 169,908 |
| 2015 | 77 | 74,729 | 75,543 | 64,399 | 214,671 |

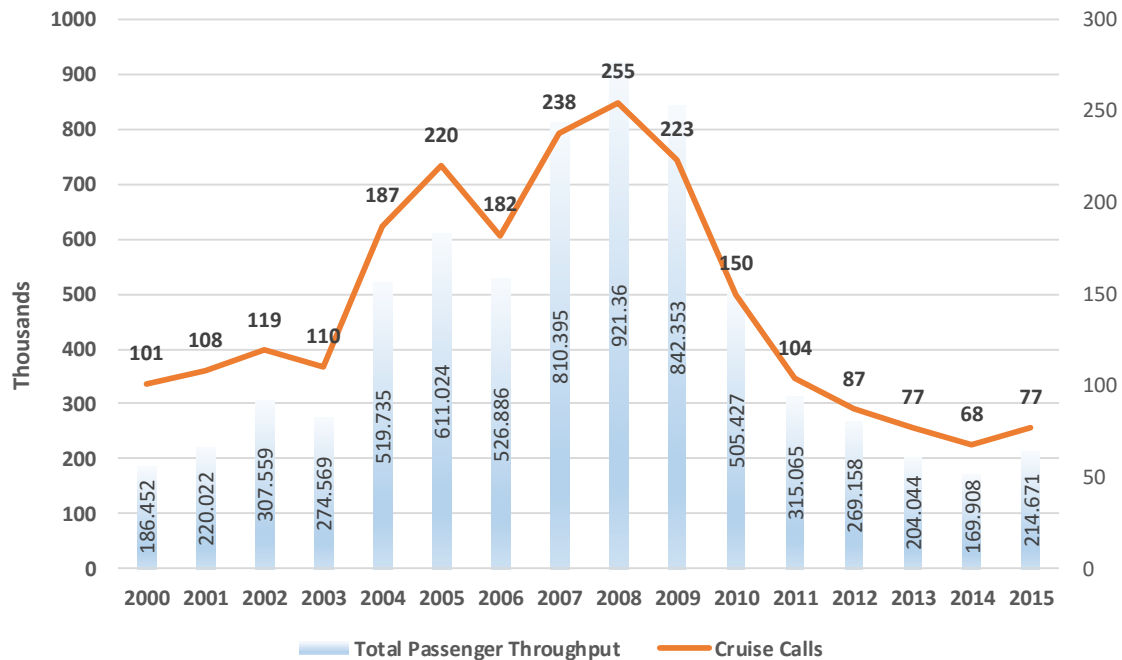
Source: San Diego Unified Port District

CRUISE ACTIVITY FROM 2000 THROUGH 2015

As shown in **Table 1** and **Figure 1**, since 2000 the San Diego cruise sector has experienced periods of rapid expansion and contraction. In fact, the past 15 years can be broken into four distinct periods: i) 2000 - 2003, ii) 2004 - 2006, iii) 2007 – 2009, iv) 2010 – 2014 and v) 2015. From

2000 through 2003, cruise calls were fairly stable averaging about 110 cruise ship calls and a throughput⁶ of 247,150 passengers per year. During this period cruise activity peaked in 2002 driven primarily by the expansion of homeport activity as Royal Caribbean added larger ships and Celebrity began cruising from San Diego for the first time. As shown in Table 1, passenger visits generated by intransit calls accounted for a higher share, about 35%, of passenger throughput than in the other period.

Figure 1 - San Diego Cruise Calls and Passenger Throughput, 2000 - 2011



Source: San Diego Unified Port District

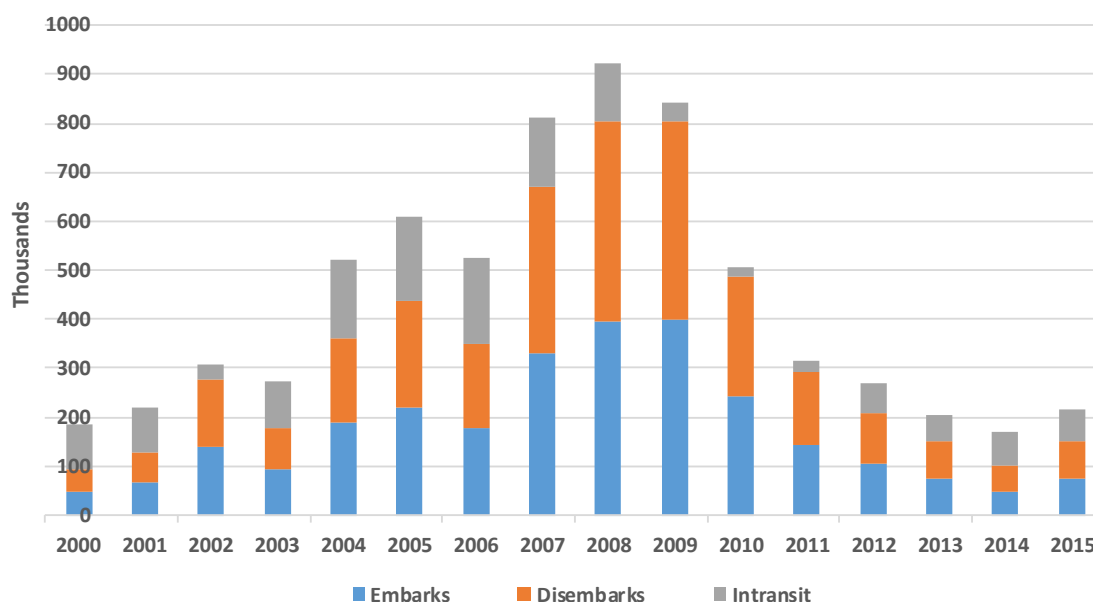
Beginning in 2004, cruise activity increased significantly with cruise calls averaging 215 calls per year during the 2004 - 2006 period. Average annual passenger throughput more than doubled to just over 552,000 passengers. This expansion was driven primarily by the expansion of homeport cruises to Mexico. During this period, the bed day capacity deployed in the Mexico West market increased from 3.4 million bed days in 2003 to 5.7 million in 2005. This increase occurred as the *Carnival Spirit* began sailing from San Diego and Princess Cruises introduced two ships for winter cruising to Mexico in 2005 and 2006. As a result of the increase in homeport activity, the share of intransit passenger visits fell to 30% over the three-year period.

Another spurt of growth occurred in 2007 as once again the industry increased the capacity in the Mexico West market. By 2008, the capacity in this market reached 6.5 million bed days with much of that capacity homeporting in San Diego. During the 2007 - 2009 period, cruise calls av-

⁶ Passenger throughput is the sum of passenger embarkations, passenger debarkations and intransit passengers. Because one way cruises, usually through the Panama Canal, originate and terminate in San Diego, embarks and debarks are not equal to one another.

eraged nearly 240 per year and average annual passenger throughput increased to nearly 860,000. During this period, Carnival introduced a second ship, the *Carnival Elation*, and along with Royal Caribbean's *Monarch of the Sea*⁷ began sailing year-round from San Diego. As indicated in Table 1 and Figure 1, cruise activity peaked in San Diego in 2008 with 255 cruise calls and a throughput of 921,360 passengers. In 2009, embarkations and disembarkations each accounted for about 48% of total passenger throughput, while the share for intransit passengers had fallen to 4%.

Figure 2 - San Diego Throughput by Type, 2000 - 2015



Source: San Diego Unified Port District

From 2000 through 2009, the port of San Diego experienced a 150% increase in cruise calls and a nearly a 400% increase in passenger throughput. While we have focused on the increase in calls as a driving force for the growth in passenger throughput, it is clearly not the only factor. With passenger throughput increasing at more than twice the rate as calls, the average size of the ships calling at the port must also have increased. In 2000, the average size of a cruise ship calling at San Diego was approximately 1,400 passengers. By 2009, the average ship size in San Diego had increased to 2,000 passengers, an increase of more than 40%. San Diego was not alone in experiencing this type of growth; the entire industry was growing with ports throughout the U.S., Europe and the Caribbean seeing similar rates of growth.

In 2009, San Diego experienced a decline in cruise calls to 223 from 255 in the prior year. Passenger throughput experienced a corresponding decline of 8.6%. This decline accelerated in

⁷ It should be noted that at least one Royal Caribbean was sailing from San Diego on a year-round basis throughout the 2000 - 2008 period. In 2009 Royal Caribbean redeployed the *Monarch of the Seas*.

2010 as a result of recessionary impacts and as the cruise industry reduced its deployment in the Mexico West market. As a result, cruise calls in San Diego continued to fall to 68 in 2014, about one-fourth of the 2008 peak. Passenger throughput also fell to 118,794 passengers, 18% of the 2008 peak of 921,360 passengers. Finally, in 2015, San Diego experienced its first increase in cruise calls and passenger throughput since 2008 with cruise calls increasing to 77 and passenger throughput increasing by 26% to 214,671 passengers.

Of the 77 cruise ship calls in San Diego during 2015, approximately 40% were intransit calls. As shown in Table 1, the number of passengers arriving at the port or embarking on cruises totaled 74,729 while the number of passengers that ended their cruise or disembarked was 75,543. There were 64,399 passengers that arrived in San Diego as intransit passengers. These passengers arrived in San Diego and departed on the same day as their cruise continued. Thus, the port processed a total of 214,671 passengers throughout 2015.

The principal cruise lines operating at the port are: Holland America Cruise Line, Princess Cruises and Disney Cruise Line. Combined these three cruise lines accounted for 75% of the cruise calls and 79% of the total passenger throughput at the port. Holland America accounted for the most cruise calls, 29, and the highest volume of passenger throughput, 67,357 passengers. The majority of these cruises were Panama Canal cruises between San Diego and Fort Lauderdale. On these cruises a group of passengers embarked in Fort Lauderdale and then disembarked in San Diego. Then a new group of passengers embarked in San Diego and disembarked in Fort Lauderdale. A few passengers remained on the ship and returned to Fort Lauderdale and are considered intransit passengers.

Table 2 – Cruise Passenger Embarkations at the Port of San Diego

| Cruise Line | Cruise Calls | Passenger Throughput | Embarks | Debarks | Intransit |
|------------------------------------|--------------|----------------------|---------------|---------------|---------------|
| Holland America Cruise Line | 29 | 67,357 | 31,717 | 30,287 | 5,353 |
| Princess Cruises | 18 | 51,087 | 28 | 61 | 50,998 |
| Disney Cruise Line | 11 | 50,816 | 25,044 | 25,158 | 614 |
| All Other Cruise Lines | 19 | 45,411 | 17,940 | 20,037 | 7,434 |
| | 77 | 214,671 | 74,729 | 75,543 | 64,399 |

Princess Cruises produced the second highest level of cruise activity. During 2015 Princess cruise ships made 18 calls and generated a throughput of 51,087. As the data in Table 1 indicate, the calls made by the Princess ships were intransit calls. Most of these calls are part of southern Pacific coastal cruises that originate and terminate at other California ports. These itineraries generally include calls at Ensenada and ports on the Baja Peninsula.

Disney Cruise line generated 11 cruise calls and a throughput of 50,816 passengers at the port during 2015. As indicated in the table most of these calls were turnaround cruise calls. Prior to and following the **Disney Wonder's deployment in the Alaska market, the Disney Wonder offered a number of 2,3, and 5-day cruises to the Baja Peninsula from San Diego.**

All other cruise lines, including Royal Caribbean, Celebrity, Regent Seven Seas, Silversea and Crystal among others, made 19 cruise calls at San Diego during 2015 and generated a passenger throughput of 45,411 passengers, most, of which, were generated by turnaround cruises.

PASSENGER DEMOGRAPHICS AND CRUISE ATTRIBUTES

The demographic and spending characteristics of cruise passengers in San Diego were derived from a report prepared for the San Diego Tourism Authority by CIC Research.⁸ At the time of this analysis the most recent report was based upon surveys of passengers in 2013. This report indicates that passengers on cruise ships calling at the Port of San Diego came from around the globe and all income groups. The primary demographic characteristics of San Diego cruise passengers surveyed in 2013 are shown in Table 2 and were as follows.

Table 3 – Major Demographic Characteristics of San Diego Cruise Passengers, 2013

| San Diego Cruise Visitors | |
|--|-----------------------|
| Place of Residence | |
| Southern California | 30.8% |
| Northern California | 12.7% |
| Other Pacific States | 7.3% |
| Mountain States | 19.8% |
| Midwestern States | 11.1% |
| Eastern States | 5.1% |
| Foreign | 13.2% |
| Median Household Income | |
| | \$98,700 |
| Less than \$60,000 | 15.8% |
| Between \$60,000 and \$100,000 | 35.3% |
| Between \$100,000 and \$150,000 | 32.3% |
| More than \$150,000 | 16.6% |
| Median Age | |
| | 53 |
| Percent Under 25 | 3.5% |
| Percent Between 25 and 44 | 26.9% |
| Percent Between 45 and 64 | 45.4% |
| Percent 65 and Older | 24.2% |
| Average Size of a Cruise Party | |
| | 2.2 Passengers |
| Percent of Cruise Visitors with Overnight Stay | 20.4% |
| Average Length of Overnight Stay | 2.1 Nights |
| Percent Traveling with Children | 2.4% |
| Average Days Away from Home | 11.3 Days |
| First Time Visitors | 21.1% |

Source: Visitors to San Diego – 2013: Profile of Cruise Passengers & Port Tidelands Hotel Guests, San Diego Tourism Authority and CIC Research, Inc., August 19, 2014.

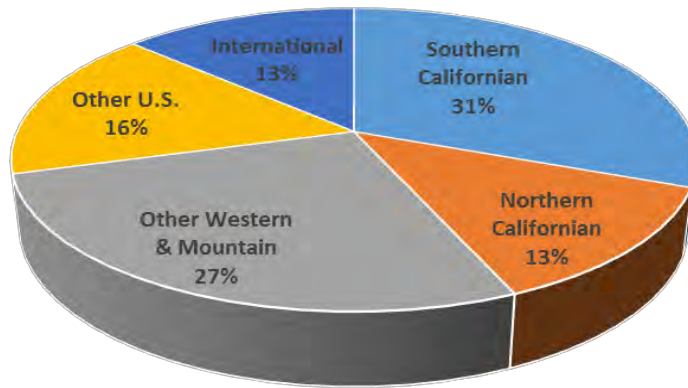
As shown in Figure 3, the report indicated that the majority of the cruise passenger visitors to San Diego⁹ were US residents (87%). The 13% of passengers who were residents of foreign countries were primarily residents of Canada (70%) and Mexico (19%).

⁸ Visitors to San Diego – 2013: Profile of Cruise Passengers & Port Tidelands Hotel Guests, San Diego Tourism Authority and CIC Research, Inc., August 19, 2014.

⁹ A San Diego visitor is not a resident of S.D. County and is not here for daily employment.

In total, surveyed passengers came from 35 states. The majority of US-resident cruise passengers came from California, 44% of all passenger visitors and 51% of US-resident passenger visitors. Of these visitors from California, 70% resided in Southern California and 30% resided in Northern California. Residents of the other western and mountain states accounted for 27% of all cruise passenger visitors and 31% of US-resident visitors.

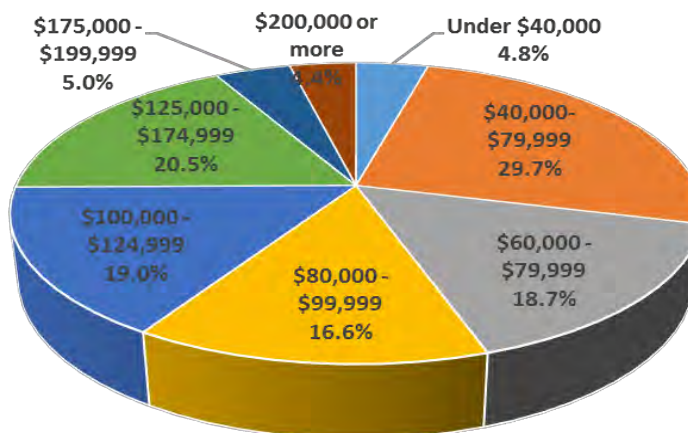
Figure 3 – Place of Residence of San Diego Cruise Passengers, 2013



Source: Visitors to San Diego – 2013: Profile of Cruise Passengers & Port Tideland Hotel Guests, San Diego Tourism Authority and CIC Research, Inc., August 19, 2014.

The median household income of cruise passengers visiting San Diego was \$98,700. As shown in Figure 4, nearly half (48.9%) of the interviewed cruise passengers reported having household incomes in excess of \$100,000 while 4.4% reported an income above \$200,000. Only 4.8% reported a household income under \$40,000.

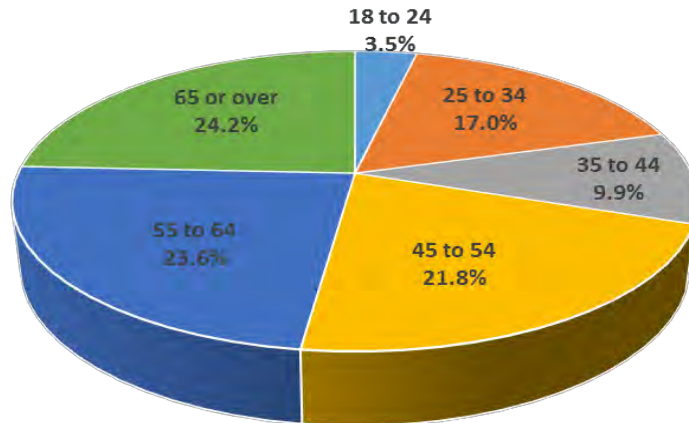
Figure 4 – Household Income of San Diego Cruise Passengers by Income Class, 2013



Source: Visitors to San Diego – 2013: Profile of Cruise Passengers & Port Tideland Hotel Guests, San Diego Tourism Authority and CIC Research, Inc., August 19, 2014.

The survey respondents reported that the median age of a San Diego cruise passenger in 2013 was 51 years of age. As shown in Figure 5, nearly one-fourth (24.2%) of the passengers were 65 years of age or older. Almost half (45.6%) were between the ages of 45 and 64 while only 3.5% were under the age of 25.

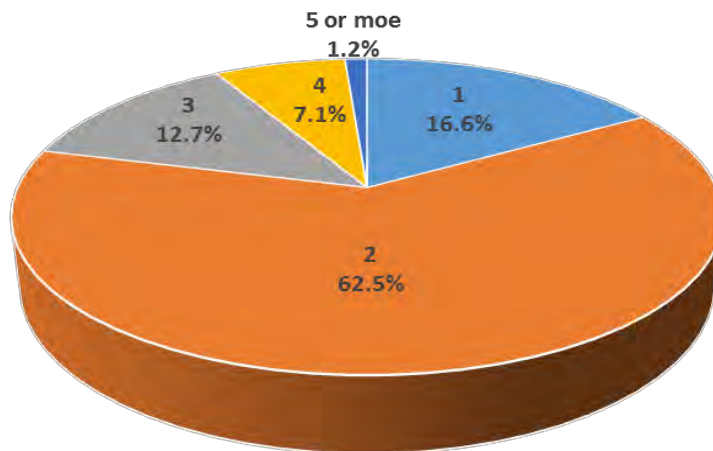
Figure 5 – Age Distribution of San Diego Cruise Passengers, 2013



Source: Visitors to San Diego – 2013: Profile of Cruise Passengers & Port Tidelands Hotel Guests, San Diego Tourism Authority and CIC Research, Inc., August 19, 2014.

The average San Diego cruise party was similar to what you find at most ports. The average size of a San Diego cruise party was 2.2 passengers with the most common size of a cruise party being two passengers (62.5%). Just over eight percent (8.3%) of the San Diego cruise parties consisted of four or more cruise passengers (see Figure 6).

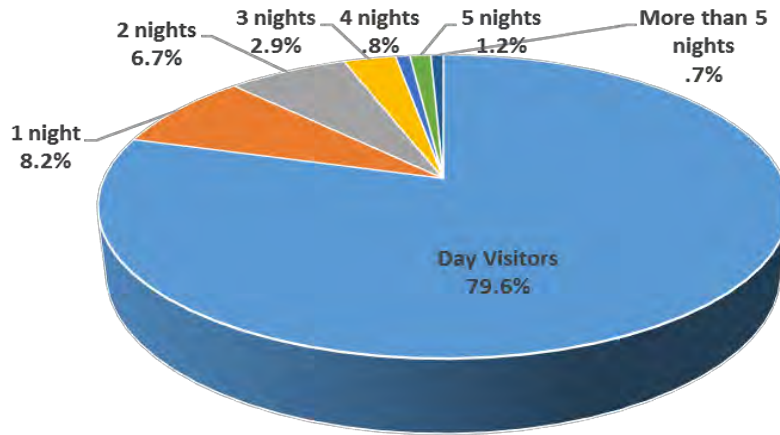
Figure 6 – Size of San Diego Cruise Parties, 2013



Source: Visitors to San Diego – 2013: Profile of Cruise Passengers & Port Tidelands Hotel Guests, San Diego Tourism Authority and CIC Research, Inc., August 19, 2014.

As shown in Figure 7, 20.4% of San Diego cruise passengers stated that they stayed overnight in San Diego county prior to their cruise or were planning an overnight stay following their cruise. The average length of stay of the cruise passengers was 2.1 nights. Of those passengers with an overnight stay, 40% spent one night in the county, 33% spent two nights and 27% spent three or more nights.

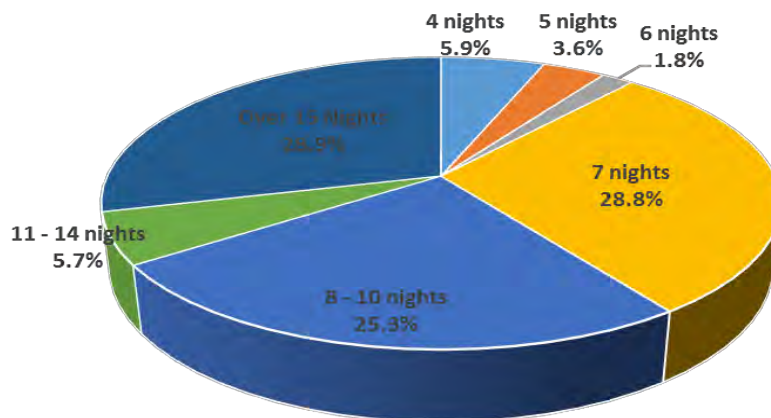
Figure 7 – Cruise Overnight Visits to San Diego, 2013



Source: Visitors to San Diego – 2013: Profile of Cruise Passengers & Port Tidelands Hotel Guests, San Diego Tourism Authority and CIC Research, Inc., August 19, 2014.

San Diego cruise passengers stated that they spent an average of 11.3 days away from home while on their cruise vacation. As shown in Figure 8, just over eleven percent (11.3%) spent between 4 and 6 days away from home. Another 28.8% spent 7 nights away from home while 25.3% spent between 8 and 10 nights away from home. Finally, 34.6% of San Diego cruise passengers spent 11 or more nights away from home while on their cruise vacation during 2013.

Figure 8 – Total Nights Away from Home by San Diego Cruise Passengers, 2013



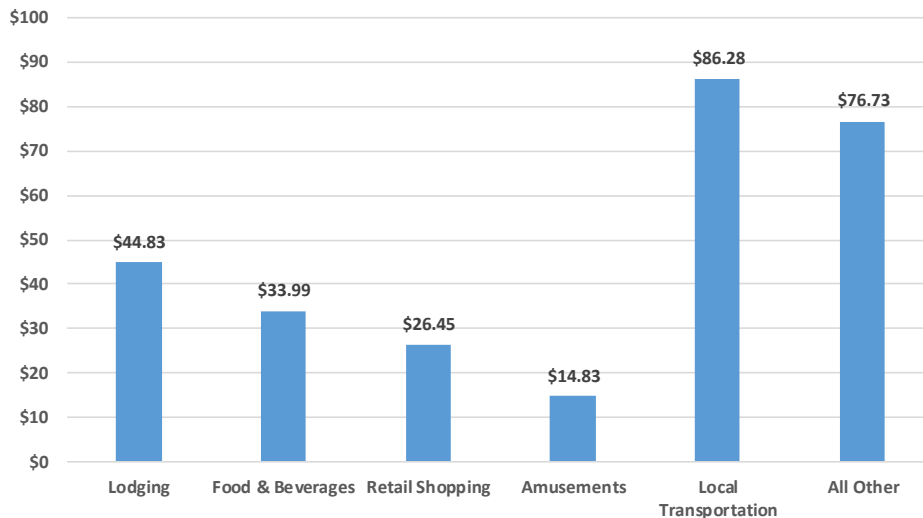
Source: Visitors to San Diego – 2013: Profile of Cruise Passengers & Port Tidelands Hotel Guests, San Diego Tourism Authority and CIC Research, Inc., August 19, 2014.

AVERAGE SPENDING BY CRUISE PASSENGERS AND CREW IN SAN DIEGO

The survey sponsored by the San Diego Tourism Authority discussed in the previous section also collected data on cruise passenger spending in San Diego. The report presented average spending by both embarking and intransit passengers for ten categories during 2013. BREa updated these average expenditure rates utilizing Consumer Price Indices (CPI) for the San Diego-Carlsbad MSA published by the Bureau of Economic Analysis (BEA). Inflation rates for the 2013-2015 period for each category were calculated from these data. The 2013 survey estimates were then adjusted to reflect these inflation rates. The result was that the average total spend of \$279.34 by embarking passengers in 2013 was increased to \$283.11 for 2015, an increase of 1.3%. Similarly, the average spend of intransit passengers was increased from \$71.93 in 2013 to an estimated \$74.38 for 2015, an increase of 3.4%.

As noted above and shown in Figure 9, turnaround cruise passengers in San Diego spent an average of \$283.11 during their visit in 2015.¹⁰ These passengers spent an average of \$44.83 for lodging per visit. Another \$33.99 and \$26.45 was spent on average for food and beverages and retail shopping, respectively. Passengers also spent an average of \$14.83 for amusements and recreation, including tours. Turnaround passengers also spent \$86.28, 30% of total expenditures on local transportation, including car rental and parking. Finally, another \$76.73 was spent on other purchases, including, groceries and airport generated expenditures.

Figure 9 – Average per Passenger Spending San Diego by Turnaround Passengers, 2015
Average per Passenger Expenditures = \$283.11



As shown in Figure 9, intransit cruise passengers in San Diego spent an average of \$74.38 during their visit. On average these passengers spent an average of \$17.68 and \$22.08 was spent on average for food and beverages and retail shopping, respectively. Passengers also spent an

¹⁰

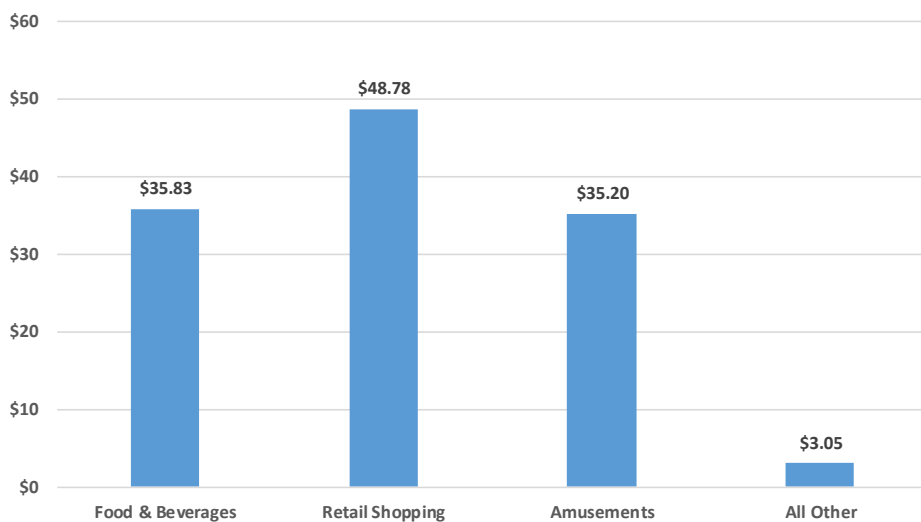
average of \$26.42, 36% of total expenditures, for amusements and recreation, including tours. Intransit passengers also spent an average of \$5.64, on local transportation. Finally, another \$2.55 was spent on other purchases.

Figure 10 – Average per Passenger Spending San Diego by Intransit Passengers, 2015
Average per Passenger Expenditures = \$74.38



Since no surveys of crew were conducted during the 2013 survey period, BREA utilized data on average crew spending at U.S. ports. As shown in Figure 11, it was estimated that crew who visited San Diego spent an average of \$122.85 during their onshore visit. Most of the expenditures were for retail goods (\$48.78 per crew member or 40% of the total). Crew also spent an average of \$35.83 for food and beverages, \$35.20 for amusements, including tours and local transportation and \$3.05 for other goods and services.

Figure 11 – Average per Crew Spending San Diego, 2015
Average per Crew Expenditures = \$122.85



ECONOMIC IMPACT OF THE SAN DIEGO CRUISE SECTOR

The objective of the economic impact analysis was to quantify the final sales or output, employment and employee earnings generated by the San Diego cruise sector. The direct and indirect economic impacts of the cruise sector were estimated with the following data:

- actual passenger boardings and visits and cruise ship calls in San Diego during 2015;
- results from the CIC Research 2013 San Diego cruise passenger surveys;
- estimates of direct cruise line spending among businesses in the San Diego-Carlsbad MSA collected by BREA from the cruise lines that visited the Port of San Diego;
- publicly available data on employment and wages by industry in San Diego; and
- input/output multipliers specific to the San Diego-Carlsbad MSA.¹¹

The economic impacts of the cruise sector, which includes the cruise lines, their passengers, crew and suppliers arise from two principal sources:

1. spending by cruise passengers and crew that visit San Diego as a result of cruises that originate and/or terminate in San Diego; and
2. purchases by the cruise lines for goods and services from businesses in the San Diego MSA in support of their San Diego and global cruises.

As shown in Table 4, the 77 cruise ship calls at the Port of San Diego generated a throughput of 214,671 passengers. Holland America Cruise Line accounted for 31% of the total. Princess Cruises and Disney Cruise Line each accounted for another 23% of the passenger throughput. In addition to the three major cruise lines that sail to and from San Diego, additional calls were made by cruise lines with fewer calls that carried just over 45,000 passengers, or 21% of the total passenger throughput.

Table 4 – Cruise Passenger Embarkations at the Port of San Diego

| Cruise Line | Cruise Calls | Passenger Throughput | Share |
|-----------------------------|--------------|----------------------|-------|
| Holland America Cruise Line | 29 | 67,357 | 31.4% |
| Princess Cruises | 18 | 51,087 | 23.8% |
| Disney Cruise Line | 11 | 50,816 | 23.7% |
| All Other Cruise Lines | 19 | 45,411 | 21.1% |
| | 77 | 214,671 | |

¹¹ The San Diego - Carlsbad MSA consists solely of San Diego county.

Cruise Passenger and Crew Visits and Spending

Cruise passengers and crew impact the San Diego economy through their expenditures for transportation, lodging, sightseeing, food and beverages and other retail items. This section provides the major impacts of passenger and crew visits and spending as derived from the 2013 survey of San Diego cruise passengers and updated to account for inflation from 2013 through 2015.

Passengers

The CIC Research cruise passenger analysis indicated that 13.5% of San Diego cruise passengers were residents of San Diego. Thus, 86.5% of passenger embarking on cruises from San Diego are defined as San Diego visitors. As a result, we have estimated that there were 64,641 cruise passenger visits (or $.865 \times 74,729$ passenger embarkations).

As shown in previously in Figure 9, San Diego roundtrip cruise passenger visitors spent an average of \$283.11 with San Diego businesses during 2015. In aggregate, all turnaround passengers spent a total \$18.3 million (see **Figure 12**). Cruise visitors spent \$5.1 million (28% of total expenditures) on lodging and food beverages. Retailers of clothing, jewelry and souvenirs benefitted from \$1.71 million in spending by cruise visitors (9% of total expenditures). Expenditures for local transportation, including car rental and parking, totaled \$5.58 million, or 30% of total expenditures of turnaround passengers. The remaining \$5.92 million was spent on a variety of services, including entertainment, amusements and airport generated expenditures.

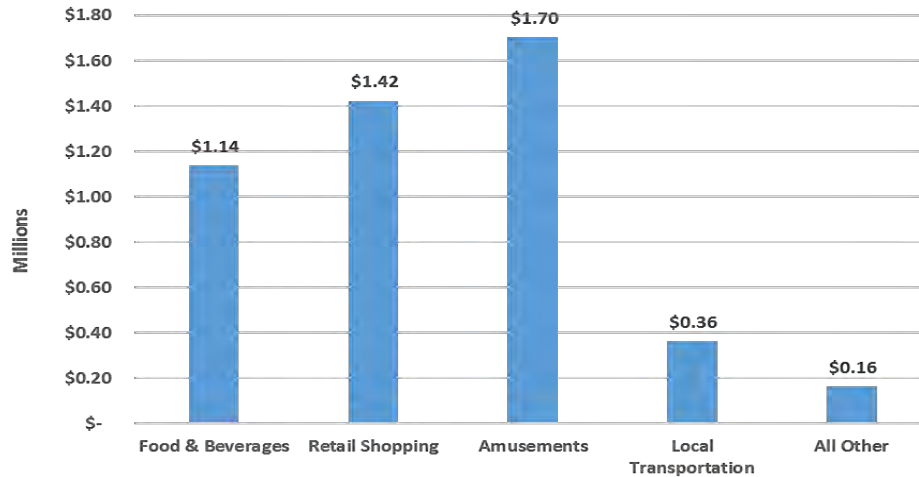
Figure 12 – Total Expenditures in San Diego by Turnaround Cruise Passengers, 2015
Total Expenditures = \$18.31 Million



As shown in previously in Figure 10, San Diego intransit cruise passenger visitors spent an average of \$74.38 with San Diego businesses during 2015. Based upon the average expenditure per intransit cruise passenger we have estimated that the nearly 64,400 intransit cruise passengers that

visited San Diego during 2015 spent a total of \$4.79 million with San Diego businesses. (see Figure 13) Cruise visitors spent \$1.14 million (24% of total expenditures) on food beverages. Retailers of clothing, jewelry and souvenirs benefitted from \$1.42 million in spending by cruise visitors (30% of total expenditures). Expenditures for amusements, including tours, totaled \$1.70 million, or 35% of total expenditures of in-transit passengers. The remaining \$0.52 million was spent on a variety of services, including local transit and entertainment.

Figure 13 – Total Expenditures in San Diego by Intransit Cruise Passengers, 2015
Total Expenditures = \$4.79 Million



Crew

The 77 cruise ship calls to the Port of San Diego carried an estimated 66,341 crew. Of these, an estimated 40%, or 26,536 crew, visited the San Diego area during 2015. As shown previously in Figure 11, the average member of the crew spent \$122.85 during his or her visit to San Diego. Based upon the average expenditure per crew member, we have estimated that the 26,536 crew visits generated \$3.26 million in spending with San Diego area businesses during 2015 (see Figure 14). Crew spent \$0.95 million (29% of total expenditures) on food beverages during their onshore visit. Retailers of clothing, jewelry and souvenirs benefitted from \$1.30 million in spending by cruise visitors (40% of total expenditures). Expenditures for amusements, including tours, totaled \$0.93 million, or 29% of total expenditures of turnaround passengers. The remaining \$0.08 million was spent on a variety of services, including local transit and entertainment.

Figure 14 –Expenditures in San Diego by Crew, 2015
Total Expenditures = \$3.26 Million



Cruise Line Spending

BREA maintains an extensive data base on cruise line spending for more than 70 operating and administrative categories by cruise line, state and metropolitan area. BREA's analysis of cruise line expenditures by vendor showed that the cruise lines with ships sailing from San Diego spent an estimated \$20.47 million with businesses in San Diego in direct support of those and global cruises. As shown in Table 5, cruise ships visiting the Port of San Diego generated \$16.28 million in "local" expenditures by the cruise lines. Cruise lines spent an additional \$4.19 million in "global" expenditures in support of administrative and global cruise operations with businesses located in San Diego.

As indicated in Table 5, \$8.04 million, 39% of these cruise line expenditures, was paid to businesses in the San Diego MSA for goods and equipment in support of hotel operations, including restaurant and bar operations onboard the cruise ships. These included expenses for food and beverages, linens and bedding supplies, in-cabin personal consumables, cleaning supplies and other housekeeping supplies and equipment. Another \$2.03 million, 10% of the total was spent on supplies and equipment for onboard entertainment and general maintenance equipment. Expenditures for port and navigation fees, passenger transportation and security totaled \$6.23 million, 30% of total cruise line expenditures. Finally, and as noted previously, cruise lines spent \$4.19 million on goods and services that supported general administrative operations and global cruise operations. Of these, legal and professional services (\$1.28 million) and onboard entertainment (\$1.88 million), such as set design, AV equipment and entertainers, accounted for 75% of these national expenditures.

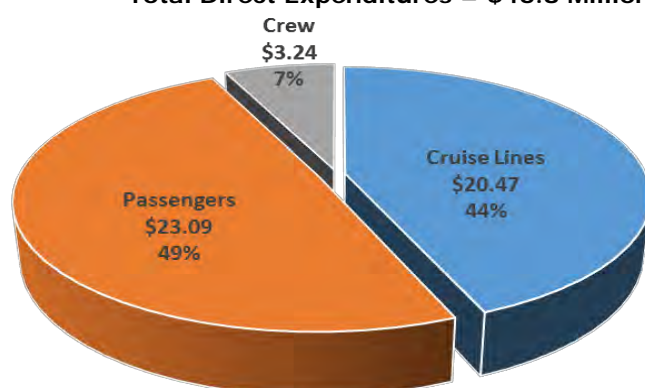
Table 5 –Direct Cruise Sector Expenditures in San Diego, 2015

| Cruise Sector Spending | |
|---|----------------------|
| Category | (\$ Millions) |
| Hotel Operations & Equipment | \$ 0.71 |
| Restaurant & Bar Operations (incl. F&B) | \$ 7.33 |
| Entertainment Equipment | \$ 0.45 |
| Onboard Maintenance & Equipment | \$ 1.58 |
| Transportation (Port Fees, Passenger Transit, etc.) | \$ 5.71 |
| Security & Inspections | \$ 0.52 |
| Total Cruise Line Spending for Local Calls | \$16.28 |
| Onboard Equipment | \$ 0.73 |
| Legal & Professional Services | \$ 1.28 |
| Travel Agents | \$ 0.30 |
| Onboard Entertainment | \$ 1.88 |
| Total Cruise Line Spending for Global Operations | \$ 4.19 |
| Aggregate Cruise Line Spending | \$20.47 |

Total Cruise Sector Spending in San Diego

Combining the spending by the cruise lines, passengers and crew, the cruise sector spent \$46.8 million in the San Diego area during 2015 (see Figure 22). The cruise lines direct expenditures accounted for 51% of all spending and totaled \$366.5 million for the year. Expenditures in San Diego by embarking passengers accounted for 39% of the total and reached \$284.6 million. Finally, crew spent just over \$73 million, 10% of the total, with San Diego area businesses. Thus, the 721 cruises that called at the Port of San Diego generated an average of just over \$1 million per call in spending with San Diego businesses.

Figure 15 –Total Cruise Sector Expenditures in San Diego, 2015
Total Direct Expenditures = \$46.8 Million



Direct Economic Impact of Cruise Sector Spending

To begin the economic impact analysis, the \$46.8 million in direct expenditures of the cruise sector in San Diego were organized by industry as shown in Table 6.¹² As indicated in the table the most heavily impacted sector of the San Diego economy was the wholesale & retail trade sector, accounting for 36% of the direct spending impacts. Wholesalers primarily provided food and beverage products to cruise ships while retailers benefited from the retail spending by passengers and crew for clothing, jewelry and other souvenirs.

Table 6 – Total Cruise Sector Direct Expenditures in San Diego by Industry, 2015
Total Direct Expenditures = \$46.8 Million

| Direct Cruise Sector Expenditures | | |
|-----------------------------------|----------------|-------|
| Sector | (\$ Millions) | Share |
| Manufacturing | \$ 3.04 | 6.5% |
| Wholesale & Retail Trade | \$17.02 | 36.3% |
| Transportation & Warehousing | \$ 6.61 | 14.1% |
| Financial & Business Services | \$ 7.06 | 15.1% |
| Lodging | \$ 3.27 | 7.0% |
| Restaurants & Bars | \$ 4.29 | 9.2% |
| Amusements & Recreation | \$ 5.48 | 11.7% |
| Other Services & Government | \$ 0.06 | 0.1% |
| Total Direct Expenditures | \$46.83 | |

Combined, the lodging and restaurant and bar sectors with \$16.2 million in direct expenditures accounted for 35% of total local spending. These expenditures were primarily generated by passengers with overnight stays in San Diego. The financial and business services sector benefited from \$7.06 million in direct expenditures, 15% of the total. The expenditures were generated by the global expenditures for legal and professional services and local expenditures for auto rentals by cruise passengers. The transportation and warehousing industry accounted for another 14% of local expenditures and totaled \$6.61 million during 2015. This spending included expenditures for port fees, navigation services and passenger and crew ground transportation. The amusement and recreation primarily benefited from passenger and crew spending for shore excursions and other amusement expenditures. This spending totaled \$5.48 million and accounted for nearly 12% of total direct expenditures. Finally, spending with manufacturers for equipment and other services totaled \$4.1 million, nearly 7% of total direct expenditures.

¹² BREa maintains an economic impact model of the cruise industry. This model has been developed over many years by BREa as a result of its research for cruise lines and ports. This model allocates all cruise line, passenger and crew expenditures to specific industries and then develops employment and wage estimates based upon industry-specific productivity, employment and wage data. These data are collected from federal, state and local government agencies. The model was modified for this study to include economic data specific to the San Diego MSA. Industry-specific RIMS II multipliers for the San Diego-Carlsbad MSA, produced by the Bureau of Economic Analysis, were used to estimate the indirect economic impacts by industry for the San Diego area.

As shown in Table 7, the \$46.8 million in direct expenditures by the cruise lines and their passengers and crew supported 333 annualized FTE jobs in San Diego paying \$13.6 million in employee earnings during 2015. Spending by cruise lines for onboard supplies was primarily responsible for the 11 FTE jobs and \$0.6 million in income in the Manufacturing sector. Passenger and crew expenditures at area hotels and restaurants were responsible for the 82 FTE jobs and \$2.2 million in compensation in the Lodging and Food & Beverage Services industries. The cruise lines' expenditures for port services and other transportation services generated 82 FTE jobs also paying \$2.2 million in employee earnings in the Transportation & Warehousing sector. Passenger and crew spending for retail goods, as well as, the wholesale distribution of products purchased by the cruise lines supported the 75 Wholesale & Retail Trade FTE jobs and their \$4.3 million in earnings. Finally, the cruise industry expenditures of \$12.6 million for Other Services, including Financial and Business Services, and Government generated 83 FTE jobs and \$4.2 million in employee income.

Table 7 – Direct Economic Impact of the San Diego Cruise Sector - 2015

| Sector | Direct Spending (\$ Millions) | Earnings (\$ Millions) | Direct Employment |
|--|--------------------------------------|-------------------------------|--------------------------|
| Manufacturing | \$ 3.04 | \$ 0.64 | 11 |
| Wholesale & Retail Trade | \$17.02 | \$ 4.34 | 75 |
| Transportation & Warehousing | \$ 6.61 | \$ 2.16 | 82 |
| Financial & Business Services | \$ 7.06 | \$ 1.79 | 30 |
| Lodging | \$ 3.27 | \$ 1.05 | 45 |
| Food & Beverage Services | \$ 4.29 | \$ 1.18 | 37 |
| Other Services & Government | \$ 5.54 | \$ 2.47 | 53 |
| Total | \$46.83 | \$13.63 | 333 |

Total Economic Impact of Cruise Sector Spending

The total economic impact of the San Diego cruise sector is the sum of the direct and indirect impacts. The indirect economic benefits derived from the cruise sector are, in part, the result of the additional spending by the suppliers to the cruise industry. For example, food processors must purchase raw foodstuffs for processing; utility services, such as, electricity and water, to run equipment and process raw materials; transportation services to deliver finished products to the cruise lines or wholesalers; insurance for property and employees and so forth. To estimate the indirect impacts economic multipliers specific to industries in the San Diego MSA were used. These multipliers reflect the industry mix within the three-county metropolitan area and account for the fact that a certain percentage of goods and services purchased by San Diego industries must be imported from outside the area and therefore do not generate economic activity within the metropolitan area. Using food processing as an example again, food processors in San Diego might purchase raw beef from meat packers in the Midwest. In this case the value of the beef is an import and does not generate economic benefits in San Diego.

In addition to the indirect impacts generated by the purchase of business goods and services by cruise industry suppliers, the employees of the suppliers generate indirect economic benefits through their purchases of consumer goods and services, including such goods as autos, food, clothing, furniture, health care and so forth.

The economic impact analysis showed that the San Diego cruise sector generated a total of 652 annualized FTE jobs in the San Diego MSA through the direct and indirect spending by businesses and their employees during 2015. As shown in Table 8, these workers produced an estimated \$82.1 million in total final sales or industry output. In addition, the impacted workers received earnings totaling \$35.9 million during the year.

Table 8 – Indirect and Total Economic Impact of the San Diego Cruise Sector - 2015

| Sector | Indirect Impacts | | | Total Impacts | | |
|----------------------------------|----------------------------|-------------------|----------------|---------------------------------|-------------------|----------------|
| | Total Final Sales (\$ Mil) | Earnings (\$ Mil) | Total FTE Jobs | Total Final Sales (\$ Millions) | Earnings (\$ Mil) | Total FTE Jobs |
| Natural Resources & Construction | \$1.49 | \$0.50 | 5 | \$1.49 | \$0.50 | 5 |
| Manufacturing | \$0.48 | \$0.47 | 2 | \$3.52 | \$1.11 | 13 |
| Wholesale & Retail Trade | \$2.29 | \$0.73 | 14 | \$19.31 | \$5.07 | 89 |
| Transportation & Warehousing | \$5.47 | \$3.77 | 68 | \$12.08 | \$5.93 | 150 |
| Financial Services | \$6.10 | \$2.13 | 22 | \$6.10 | \$2.13 | 22 |
| Business & Professional Services | \$11.52 | \$7.81 | 62 | \$18.58 | \$9.60 | 92 |
| Lodging | \$1.76 | \$1.56 | 30 | \$5.03 | \$2.61 | 75 |
| Food & Beverage Services | \$0.42 | \$0.65 | 3 | \$4.71 | \$1.83 | 40 |
| Other Services & Government | \$5.70 | \$4.68 | 113 | \$11.24 | \$7.15 | 166 |
| Total | \$35.24 | \$22.30 | 319 | \$82.07 | \$35.93 | 652 |

The Wholesale & Retail Trade sector within the San Diego MSA benefitted from 13 annualized FTE jobs paying \$1.1 million in employee earnings. Approximately 85% of these impacts are the direct impacts that resulted from purchases of the cruise lines and reflect the exclusion of imported manufactured goods among the indirect impacts.

The Transportation & Warehousing sector added 150 annualized FTE jobs and \$5.9 million in employee income to the total economic impact of the San Diego cruise sector. Approximately half of these impacts are direct. This reflects the **importance of the cruise sector's direct impact** at the port and the other direct purchases of transportation services for passengers and cruise ship supplies.

The Wholesale & Retail sector benefitted from the demand for consumer goods created by the spending of workers in the cruise industry and its suppliers. This sector added 89 annualized FTE jobs paying \$5.1 million in income to the total economic impacts as a result of these consumer expenditures. Approximately 85% of the total impacts are direct impacts reflecting the importance of the direct spending by visiting passengers and crew, especially passengers embarking on cruises from San Diego.

The Business & Professional Services sector contributed 92 annualized FTE jobs and \$9.6 million in earnings to the San Diego **economy as a result of the cruise sector's total economic impacts**. Nearly two-thirds of these impacts were indirect and resulted from indirect business expenditures for variety of services including consulting services, especially computer consulting, equipment leasing, manpower services, and security and building maintenance services.

The Financial Services sector benefitted from 22 annualized FTE jobs and \$2.1 million in employee compensation as a result of the total economic impacts of the San Diego cruise sector. Virtually all of these impacts were indirect and resulted from business and consumer demand for banking, investment, insurance and housing services, to name a few.

Combined the lodging and food services sectors benefitted from 115 annualized FTE jobs and \$4.4 million in income as a result of the total economic impacts of the San Diego cruise sector. About 75% of these impacts were direct impacts generated by passenger and crew spending.

In conclusion, the 77 cruise ships that called at the Port of San Diego during the 2015 generated an estimated 652 annualized FTE jobs and \$35.9 million in employee earnings in the San Diego MSA. These economic impacts affected many businesses throughout the region. These included transportation companies, hotels, restaurants, retail establishments, food processors and security agencies to name a few.

APPENDIX: IMPACT OF SINGLE SHIP CALLS

The following analysis provides estimates of the direct expenditures and their subsequent aggregate economic impacts of single cruise calls at San Diego. Separate estimates are provided for intransit and turnaround calls. The direct expenditures are based upon the expenditures by cruise lines and their passengers and crew discussed in the body of this report. These aggregate annual expenditures are allocated to a single cruise ship call based upon the nature of the call and the average size of the ship as defined by passenger and crew capacity. The “global” cruise line expenditures of \$4.19 million are excluded from this analysis since they are not directly related to cruise calls in San Diego.

Intransit Call

Based upon data provided by the port on ship calls in San Diego during 2015, BREa has estimated that average intransit call is made by a cruise ship with 2,500 passengers and a crew of 1,078 members. Passenger and crew expenditures are made by those passengers and crew that disembark and visit San Diego. These visitation rates, based upon data maintained by BREa for U.S. port calls, are: 95% for passengers and 40% for crew. As a consequence, the following passenger and crew onshore expenditures in San Diego are based upon 2,375 passenger visits and 431 crew visits.

As shown in **Table A-1**, the 2,806 passenger and crew visits generated by the average intransit cruise ship engenders \$241,240 in onshore expenditures. Amusements & Tours account for one-third of these expenditures with an estimated \$81,447. Retail spending generates a very similar level of passenger and crew expenditures with \$78,248. Spending for food and beverages generates \$60,757 per call while other purchases generates another \$20,788.

Table A-1 – Passenger and Crew Expenditures Generated by an Intransit Call

| Passenger & Crew Spending | |
|---|-----------|
| Cruise Characteristics - Intransit Cruise Ship | |
| Cruise Ship Calls | 1 |
| Passenger and Crew Visits | 2,806 |
| Passengers | 2,375 |
| Crew | 431 |
| Passenger & Crew Expenditures (\$ Millions) | \$241,240 |
| Amusements & Tours | \$81,447 |
| Food & Entertainment | \$60,757 |
| General Retail (Clothing, Jewelry, Souvenirs, etc.) | \$78,248 |
| Other Purchases (Parking, Museums, Local Transit) | \$20,788 |

As shown in **Table A-2**, cruise line expenditures generated by an intransit call totals \$83,789. These expenditures are concentrated by spending for port services, including port agents, port fees, security, stevedores among others. They account for 88% of total cruise line expenditures and total \$74,081. The remaining 12% of expenditures are for a variety of other services and supplies, including maintenance and limited hotel supplies.

Combining the passenger, crew and cruise line spending. Total direct expenditures generated by an intransit call total \$325,029. Passenger and crew expenditures account for about 75% of the total with cruise lines accounting for the remaining 25%.

Table A-2 – Total Direct Expenditures Generated by an Intransit Call

| Cruise Sector Spending | |
|--|------------------|
| Category | |
| Transportation (Port Fees, Port Agents, Transit, etc.) | \$74,081 |
| Other Services & Supplies | \$9,708 |
| Total Cruise Line Spending | \$83,789 |
| | |
| Passenger & Crew Expenditures (\$ Millions) | \$241,240 |
| | |
| Total Cruise Sector Expenditures | \$325,029 |

As shown in **Table A-3**, the \$325,029 in direct expenditures generated by an intransit call generates an estimated \$567,030 in total final sales throughout San Diego county. This output is produced by 5.21 annualized FTE employees who are paid \$163,030 in earnings. The Financial and Business Services sector accounts for the highest level of the total output with \$232,340 in final sales. The Other Services and Government sector accounts for the most jobs and earnings with 1.88 annualized FTE jobs paying \$55,620 in earnings.

Table A-3 – Total Economic Impacts Generated by an Intransit Call

| Sector | Direct Spending | Total Final Sales | Earnings | Total FTE Employment |
|-------------------------------|------------------|-------------------|------------------|----------------------|
| Transportation & Warehousing | \$84,480 | \$96,050 | \$31,890 | 1.13 |
| Financial & Business Services | \$10,390 | \$232,340 | \$52,030 | 1.01 |
| Accommodation & Food Services | \$60,760 | \$87,450 | \$23,490 | 1.19 |
| Other Services & Government | \$169,399 | \$151,190 | \$55,620 | 1.88 |
| Total | \$325,029 | \$567,030 | \$163,030 | 5.21 |

Turnaround Call

Based upon data provided by the port on ship calls in San Diego during 2015, BREa has estimated that average turnaround call is made by a cruise ship with 1,400 passengers and a crew of 725 members. Passenger and crew expenditures are made by those passengers and crew that disembark and visit San Diego. These visitation rates, based upon data maintained by BREa for U.S. port calls, are: 100% for turnaround passengers and 40% for crew. As a consequence, the following passenger and crew onshore expenditures in San Diego are based upon 1,400 passenger visits and 290 crew visits.

As shown in **Table A-4**, the 1,690 passenger and crew visits generated by the average turnaround cruise ship engenders \$431,977 in onshore expenditures. Accommodations and Food & Entertainment account for 28% of these expenditures with an estimated \$120,739. Retail spending generates a \$51.171 in passenger and crew expenditures. Spending for Other Pur-

chases, primarily auto rental, parking and local transit, generates \$260,067 per call, 60% of the total.

Table A-4 – Passenger and Crew Expenditures Generated by a Turnaround Call

| Passenger & Crew Spending | |
|--|------------------|
| Cruise Characteristics - Turnaround Cruise Ship | |
| Cruise Ship Calls | 1 |
| Passenger and Crew Visits | 1,690 |
| Passengers | 1,400 |
| Crew | 290 |
| Passenger & Crew Expenditures (\$ Millions) | \$431,977 |
| Lodging | \$62,756 |
| Food & Entertainment | \$57,982 |
| General Retail (Clothing, Jewelry, Souvenirs, etc.) | \$51,171 |
| Other Purchases (Parking, Museums, Local Transit) | \$260,067 |

As shown in **Table A-5**, cruise line expenditures generated by a turnaround call totals \$1.11 million. These expenditures are concentrated by spending for port services, including port agents, port fees, security, stevedores among others. They account for 76% of total cruise line expenditures and total \$844,201. The purchase of food beverages and equipment & supplies, primarily for hotel operations, totals \$209,601, 29% of the total. The remaining 5% of expenditures are for a variety of other services and supplies, primarily sanitation services.

Combining the passenger, crew and cruise line spending. Total direct expenditures generated by a turnaround call total \$1.54 million. Passenger and crew expenditures account for about 28% of the total with cruise lines accounting for the remaining 72%. Thus, the proportional split between passenger & crew expenditures and cruise line expenditures are reversed relative to an intransit call.

Table A-5 – Total Direct Expenditures Generated by a Turnaround Call

| Cruise Sector Spending | |
|--|--------------------|
| Category | |
| Equipment and Supplies | \$56,900 |
| Food & Beverages | \$152,701 |
| Transportation (Port Fees, Port Agents, Transit, etc.) | \$844,201 |
| Other Services | \$52,451 |
| Total Cruise Line Spending | \$1,106,253 |
| Passenger & Crew Expenditures (\$ Millions) | \$431,977 |
| Total Cruise Sector Expenditures | \$1,538,230 |

As shown in **Table A-6**, the \$1.54 million in direct expenditures generated by a turnaround call generates an estimated \$1.93 million in total final sales throughout San Diego county. This output is produced by 12.6 annualized FTE employees who are paid \$525,850 in earnings. The Transportation & Warehousing and Financial and Business Services sectors account for the highest level of the total output with \$1.1 million in final sales each. These two sectors also accounted for the highest level of

employee earnings with more than \$250,000. The Other Services and Government sector accounts for the most jobs with 5.06 annualized FTE jobs paying \$163,260 in earnings.

Table A-6 – Total Economic Impacts Generated by a Turnaround Call

| Sector | Direct Spending | Total Final Sales | Earnings | Total FTE Employment |
|-------------------------------|--------------------|--------------------|------------------|----------------------|
| Wholesale & Retail Trade | \$213,610 | \$248,420 | \$70,190 | 1.08 |
| Transportation & Warehousing | \$987,191 | \$1,102,851 | \$271,633 | 2.44 |
| Financial & Business Services | \$74,300 | \$1,079,440 | \$252,190 | 4.84 |
| Accommodation & Food Services | \$120,740 | \$146,380 | \$40,210 | 1.64 |
| Other Services & Government | \$1,129,580 | \$455,750 | \$163,260 | 5.06 |
| Total | \$1,538,230 | \$1,929,990 | \$525,850 | 12.62 |



BREA specializes in custom market analyses for clients throughout the private and public sectors. These unique market analyses integrate economic, financial, and demographic trends with primary market research, proprietary client data, and advanced statistical and modeling techniques. This approach results in comprehensive and actionable analysis, databases and models, designed to support planning, sales and marketing, and education within client organizations.

Dr. Moody, President of BREA, has more than twenty-five years of experience in consulting and forecasting with a wide range of international product and service companies, including consumer products, leisure, retailing, gaming, business services, telecommunications, and utility and financial services. Typical consulting assignments provide critical analysis and insight into market dynamics, product demand, economic trends, consumer behavior and public policy.

BREA has provided specialized consulting support, including market research, economic impact studies and demand analyses, to the cruise lines, port service providers and industry associations. **Among BREA's recent clients are: Port of Philadelphia and Camden, Tampa Port Authority, Port of San Diego, Royal Caribbean Cruises Ltd., Carnival Corp., P&O Ports of North America, and the International Council of Cruise Lines.** Since studies are designed to meet the specific needs of each client, they can incorporate many dimensions of the market and include a variety of ancillary services.

BREA provides the following services:

Market Research: design and implementation of primary market research instruments using telephone, mail, and intercept surveys. Test instruments are designed to collect information on product demand, attributes of consumers and users, perceived product attributes, and customer satisfaction.

Economic Impact Studies: thorough analysis of industries and consumption behavior and their contribution to or impact on national and regional (state, metropolitan areas, counties, etc.) economies.

Statistical and Econometric Modeling: developing quantitative models relating market and product demand to key economic factors and demographic market/consumer attributes. Models can be used for forecasting, trend analysis and divergence/convergence analysis.

Market Studies and Trend Analyses: detailed descriptions of markets (defined as products, regions, industries, consumer segments, etc.) and comprehensive analyses of underlying market forces (such as economic and financial conditions, competitive environment, technology, etc.).