

**THE LOCAL AND REGIONAL ECONOMIC
IMPACTS OF THE PORT OF CHICAGO**

PREPARED FOR:
THE ILLINOIS INTERNATIONAL PORT DISTRICT

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TABLE OF CONTENTS

I. OVERVIEW OF THE ANALYSIS AND SUMMARY OF RESULTS	1
1. <u>ECONOMIC IMPACT STRUCTURE</u>	2
2. <u>COMMODITIES INCLUDED IN THE ANALYSIS</u>	7
3. <u>DATA COLLECTION</u>	8
4. <u>IMPACT SUMMARY</u>	9
II. EMPLOYMENT IMPACTS.....	10
1. <u>TOTAL EMPLOYMENT IMPACT</u>	10
2. <u>DIRECT JOB IMPACTS</u>	11
2.1 Job Impacts by Sector	11
2.2 Employment by Commodity	13
3. <u>GEOGRAPHIC DISTRIBUTION OF DIRECT JOB IMPACTS</u>	14
4. <u>INDUCED JOBS</u>	15
5. <u>INDIRECT JOBS</u>	16
III. REVENUE, INCOME AND TAX IMPACTS.....	17
1. <u>REVENUE IMPACTS</u>	17
2. <u>PERSONAL INCOME IMPACTS</u>	20
3. <u>LOCAL PURCHASES</u>	20
4. <u>TAX IMPACTS</u>	20

EXECUTIVE SUMMARY

The Port of Chicago consists of public marine terminals owned by the Illinois International Port District (IIPD) as well as private marine terminals within the corporate city limits of Chicago. The Port of Chicago's public marine terminals include facilities at Lake Calumet and Iroquois Landing. Primary commodities handled by the public and private docks include steel, cement, liquid bulk, coal, salt, aggregates, sugar, scrap and other dry bulk commodities. It is the purpose of this study to quantify the regional economic impacts generated by the cargo, barge and vessel activity at these marine terminals.

In calendar year 2002, nearly 30,000 jobs in the Chicago metropolitan region and the state of Illinois were in some way related to the activity at the Port of Chicago. Of the 30,000 jobs:

- 3,367 are **direct** jobs, in that these jobs are generated by activities at the Port, and if such activities should cease, these jobs would be discontinued over the short term. It is these jobs that are most directly dependent upon the barge and vessel and cargo activity at the Port of Chicago. These jobs are with the terminal operators, stevedores, International Longshoreman's Association trucking firms, railroads, steamship agents, freight forwarders and customhouse brokers, warehousemen, federal government agencies, towing companies, pilot organizations, and marine construction companies. Nearly seventy-three percent of these jobs are held by residents of Illinois. Of those, nearly 35% are held by residents of the City of Chicago. Activity at the IIPD's owned marine terminals created 47% of these direct jobs.
- 1,741 are **induced** jobs, or those jobs supporting the local purchases made by the 3,367 individuals holding the direct jobs due to port activity. Should the direct jobs be lost from the economy, the induced jobs supporting the purchases of the direct jobs would also be lost. These jobs are with local grocery stores, retail outlets, restaurants, transportation services, local government services, schools, hospitals, etc. The IIPD's public terminals are responsible for 800 of these 1,741 jobs.
- The firms dependent upon the marine activity in the Port of Chicago made \$248.3 million of local purchases for office supplies, equipment, utilities, communications, maintenance and repair services, transportation services, professional services, and goods and services. These purchases supported 3,423 **indirect** jobs in the Chicago economy. The public terminals account for about 72% of these indirect jobs.
- In addition to the direct, induced and indirect job impacts, 21,000 are with tenants of the Port operated Foreign Trade Zone (FTZ). These jobs are to be considered **related** to the Port of Chicago, but the degree of dependence on the port is difficult to estimate. The majority of the of these 21,000 are not dependent upon cargo moving over the marine terminals within the Port District, but are related to the Port since the Port is the operator of the FTZ.

Marine activity created nearly \$398 million of personal wage and salary income for Chicago area residents.

- The 3,367 directly employed individuals received \$125.6 million of personal wage and salary income, for an average salary of nearly \$37,300. As the result of using a portion of this income for local purchases (which creates the induced jobs), \$140.9 million of additional income and consumption expenditures were created in the state.
- Those 3,423 indirectly employed received \$131.9 million of indirect income.

Businesses providing maritime services in the Port of Chicago received \$685.3 million of revenue.

- The \$685.3 million of revenue received by the businesses providing the services in the Port of Chicago does not include the value of the cargo moving over the marine terminals, since the value of the cargo is determined by the demand for the cargo, not the use of the marine terminals.
- Of the \$685.3 million, \$248.3 million was used for local purchases by those firms directly dependent upon port activity, and \$125.6 million was paid out in terms of direct salaries to the area residents employed by these firms. It is to be emphasized that the value of sales or output by the directly dependent shippers/consignees is not included in the business revenue impact, even though the direct jobs and personal income with these shippers/consignees is included as a local impact.

A total of \$39.8 million of state and local tax revenue was generated by maritime activity in the Port of Chicago in calendar year 2002.

- Of the \$39.8 million of taxes generated by the maritime activity, \$21.6 million was generated by the public facilities.

I. OVERVIEW OF THE ANALYSIS AND SUMMARY OF RESULTS

Martin Associates was retained by the Illinois International Port District (IIPD) to measure the local and regional economic impacts generated by maritime activity at the public and private marine terminals located at the Port of Chicago. These terminals include the public terminals leasing property from the IIPD located along Lake Calumet and Iroquois Landing as well as the private terminals located along the Calumet River and within the corporate city limits of Chicago. These terminals handle imported steel products, cement, salt, coal, aggregates and other dry bulk cargoes, sugar and liquid bulk.

This study focuses on impacts generated by marine cargo handled at the public and private marine facilities in the year 2002. 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. The models can also be used to evaluate the impacts of new terminal development, new /additional cargoes and for annual updates.

The methodology used in this analysis has been used by Martin Associates to estimate the economic impacts of seaport activity at more than 90 United States and Canadian ports, including:

- *Seattle*
- *Philadelphia*
- *Tacoma*
- *Longview*
- *Vancouver, BC*
- *Vancouver, WA*
- *Los Angeles (containers only)*
- *Long Beach*
- *Oakland*
- *Sacramento*
- *Houston*
- *Corpus Christi*
- *South Jersey Port Corporation*
- *13 U.S. Great Lakes Ports*
- *Baton Rouge*
- *Port Everglades*
- *Wilmington, NC*
- *Morehead City, NC*
- *Baltimore*
- *Philadelphia/Camden*
- *Wilmington, DE*
- *Montreal*
- *Halifax*
- *Portland*

This chapter presents an overview of the economic impact analysis by defining the following:

- The types of economic impacts estimated

- The economic sectors for which impacts have been estimated
- The commodities/commodity types for which impacts have been estimated.

In addition, a summary of the data sources used in the analysis is presented.

1. ECONOMIC IMPACT STRUCTURE

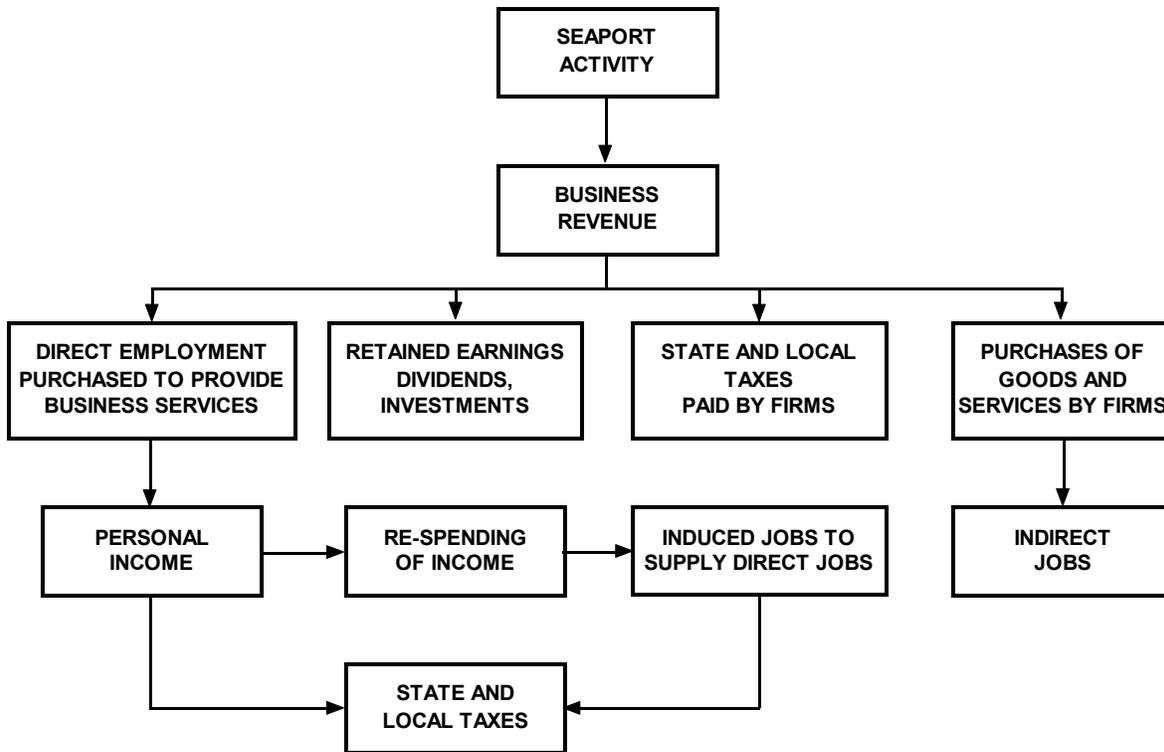
Marine cargo and vessel activity at deepwater marine terminals contribute to the local, regional, and national economies by providing employment and income to individuals, tax revenues to local and state governments, customs fees to the federal government, and revenue to businesses engaged in handling, shipping, and receiving cargo via the port. Exhibit 1 illustrates the flows of economic impacts throughout the economy. As this exhibit shows, activity at a seaport (i.e., the handling of cargo and the servicing of vessels) initially creates business revenue to firms providing those cargo handling and vessel services. This revenue is in turn used for several purposes:

- To hire employees to provide the services
- To pay stockholders dividends, retire debt, and invest
- To buy goods from other firms
- To pay federal, state, and local taxes.

The hiring of employees generates personal income. This personal income is spent throughout the state, local and national economies to purchase goods and services. This respending of income is known as the multiplier effect, which in turn creates induced jobs throughout the economy. Finally, state and local taxes are paid by those directly employed due to port activity and those employed as a result of the in-state purchases of goods and services by those individuals directly employed.

As can be seen from Exhibit 1, and the previous discussion, the flow of economic impacts throughout an economy creates four separate and non-additive types of impacts.

Exhibit 1
Flows of Economic Activity
Through the Economy



These four types of impacts are:

- Employment Impact - the number of full-time equivalent jobs generated by activity at the public and private marine terminals located within the IIPD. This consists of jobs directly generated by port activity as well as induced jobs, or jobs created in-state due to the purchase of goods and services by those individuals directly dependent upon port activity. In addition, indirect jobs, or those jobs generated in the local economy due to the local purchases of goods and services by firms directly dependent upon maritime activity are also estimated.
- Income Impact - the level of earnings associated with the jobs created by port activity, and adjusted to reflect respending throughout the economy.
- Revenue Impact - the sales generated by firms engaged in handling and transporting cargo through the marine terminals. This impact includes national as well as local and state revenue. The value of shipments through the port facilities is not included as a revenue impact for the purposes of this analysis.

- Tax Impact - the state and local tax revenues generated by port activity. These are taxes paid by individuals and firms directly dependent upon the maritime activity.

Shipments and receipts of cargo through the public and private marine terminals at the Port of Chicago generate economic activity in various business sectors of the state and local economies. Specifically, the following economic sectors are involved in providing cargo and vessel handling services at the public and private terminals. These are the:

- Surface Transportation Sector
- Maritime Service Sector
- Dependent Shippers/Consignees
- Port Administration
- Banking/Insurance/Law Sector.

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

(1) The Surface Transportation Sector

The surface transportation sector consists of both the railroad and trucking industries. These sectors are responsible for moving the various cargoes between the terminals and their inland origins and destinations. Many local and national trucking firms serve the marine terminals, as do numerous individual owner-operators.

(2) The Maritime Service Sector

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

- Cargo Marine Transportation
- Vessel Operations
- Cargo Handling
- Linehaul Barge Operations on the Calumet River and Chicago Ship & Sanitary Canal as well as Laker operations on the Great Lakes
- Federal, State, and Local Government Agencies.

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

- Cargo Marine Transportation - Participants in this category are involved in arranging for inland and water transportation for export or import freight through the marine terminals. The freight forwarder/customhouse broker is the major participant in this category. The freight forwarder/customhouse broker arranges for the freight to be

delivered between the marine 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. For bulk cargo, arrangements are often made by the shipper/receiver, and the cargo passes over private docks.

- 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 district; the agents arrange for pilot services and towing, for medical and dental care of the crew, and for ship supplies. The agents are also responsible for vessel documentation. In addition to the steamship agents arranging for vessel services, those providing the services include:
 - Chandlers - supply the vessels with ship supplies (food, clothing, nautical equipment, etc.)
 - Towing firms - provide the tug service to guide the vessel to and from port and also provide power to barge operations
 - Bunkering firms - provide fuel to the vessels
 - Marine surveyors - inspect the vessels and the cargo
 - Launch services - provide transportation for the crew between land and vessel
 - Chemical testing services - test cargo, such as coal, for proper chemical composition, water content, etc.
 - Shipyards/marine construction firms - provide repairs, either emergency or scheduled, as well as marine pier construction and dredging. Also included in this category are one-time impacts generated by the construction of marine facilities.
- Cargo Handling - This category involves the physical handling of the cargo at the Port between the land and the vessel. Included in this category are the following participants:
 - Longshoremen - are members of the International Longshoremen Association (ILA), and are involved in the loading and unloading of cargo from the vessels, as well as handling the cargo prior to loading and after unloading
 - Stevedoring firms - manage the longshoremen and cargo-handling activities
 - Terminal operators - are often stevedoring firms who operate the maritime

terminals where cargo is loaded and off-loaded

- Warehouse operators - store cargo after discharge or prior to loading and consolidate cargo units into shipment lots
- Container leasing and repair firms - provide containers to steamship lines and shippers/consignees and repair damaged containers
- Container consolidators - consolidate containerized cargo as well as full containers in order to achieve favorable transportation rates for their customers
- Barge Operators – Participants in this sector move dry and liquid bulk cargoes along the Calumet River and the Chicago Ship & Sanitary Canal.
- 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. U.S. Customs, Immigration and Naturalization Service, U.S. Department of Labor, U.S. Department of Agriculture, and U.S. Department of Commerce employees are involved. In addition, both civilian and military personnel with the U.S. Coast Guard and the U.S. Army Corps of Engineers have been included. Finally, the city police and fire departments dedicated to port activity are part of this category.

(3) Shippers/Consignees

This sector includes shippers/consignees totally dependent on the public and private marine terminals. These shippers/consignees would most likely shut down operations or relocate if the marine terminals were not available for their use. While dependent shippers often have private river terminals for the shipment and receipt of cargo such as petroleum refineries receiving crude petroleum (product) by vessel and barge and shipping product over the marine terminals. Other dependent shippers/consignees have a manufacturing facility near the public marine terminals and rely on the receipt of waterborne raw materials for production processes. Because of this difference, employment, income and tax impacts are estimated for dependent shippers/consignees only.

In addition, the Port of Chicago operates a Foreign Trade Zone that supports more than 21,000 jobs in the Chicago area.

(4) Port Administration

This sector includes those individuals employed by the Illinois International Port District administrative office.

(5) Banking/Insurance/Law Sector

While this sector is not directly involved in cargo or ship operations, it nonetheless does provide services such as financing export/import transactions and insuring cargo and vessels. Also included in this sector are legal firms specializing in maritime law.

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, some dry bulk cargo requires a large area for open storage, while steel coils require warehousing. Liquid bulk cargoes require tank storage.

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 via public and private facilities at the Port of Chicago.

- Containerized cargo
- Steel, including coils, plates, structures, billets, and pipe
- Grain
- Coal
- Cement
- Aggregates
- Salt
- Scrap
- Sugar
- Other dry bulk
- Liquid bulk

It should be emphasized that commodity-specific impacts are not estimated for each of the five economic sectors described in the last section. Specific impacts could not be allocated to individual commodities with any degree of accuracy for the banking/insurance/law sector, marine construction and the government sector.

3. DATA COLLECTION

This Economic Impact Study of the Port of Chicago is based on a telephone survey of members of each of the five economic sectors. Participants were identified from the tenants lists provided by the IIPD, the *Journal of Commerce*, "Port Telephone Tickler", as well as internal tenant lists. Telephone interviews were used to achieve a 100 percent response rate in all sectors. Table 1 summarizes the number of firms interviewed.

Table 1
Summary of Interviews

Number of Interviews by Industry	
Sector	Totals
Lines/Agents	10
Government	4
Tug & Barge Operators	11
Warehouse	35
Marine Surveyors	14
Banking/Insurance/Law	19
Dependent Users	2
Maritime Services	4
Railroads	9
Port Maritime Tenants	6
Port Industrial Tenants	9
FTZ Tenants	10
Terminals	
Private	20
Public	7
IIPD/Port of Chicago	3
TOTALS	163

In addition to data collected from the 163 interviews, published data was collected from several sources. These publications include:

- Census of Wholesale Trade
- Census of Retail Trade
- Census of Construction
- Census of Service Industries
- Annual Survey of Manufacturers.

Other published data was obtained from the U.S. Bureau of Census, County Business Patterns; U.S. Bureau of Economic Analysis, Regional Income Division; and U.S. Bureau of Labor Statistics, "Consumer Expenditure Survey, 2001/2".

The economic relationships and methodology have been modeled using Microsoft Excel software. The models have been designed to update the port impact assessment on an annual basis, as well as to test sensitivities of impacts to changes in commodity tonnage, labor productivity, labor work rules, vessel calls (by type of vessel including salty vs. laker vs. barge), pilotage and tug assist assumptions. Also, the models are designed to test the impacts of new facilities development.

4. IMPACT SUMMARY

The resulting economic impacts are presented in Table 2. The impacts for total activity at both public and private facilities are detailed, as are the impacts for activity at public facilities owned by the Illinois International Port District.

Table 2
Summary of Economic Impacts Generated by
Port Activity in 2002

	PUBLIC FACILITIES	PRIVATE FACILITIES	TOTAL
JOBS			
DIRECT	1,586	1,781	3,367
INDUCED	800	941	1,741
INDIRECT	2,464	959	3,423
TOTAL	4,849	3,681	8,530
PERSONAL INCOME (\$1,000)			
DIRECT	\$56,846	\$68,713	\$125,560
INDUCED/CONSUMPTION	\$63,827	\$77,151	\$140,978
INDIRECT	\$95,658	\$36,242	\$131,900
TOTAL	\$216,332	\$182,107	\$398,439
LOCAL PURCHASES (\$1,000)	\$167,236	\$81,087	\$248,323
BUSINESS REVENUE (\$1,000)	\$402,164	\$283,152	\$685,316
STATE/LOCAL TAXES (\$1,000)	\$21,633	\$18,211	\$39,844
FTZ JOBS	21,000		21,000

*Totals may not add due to rounding

II. EMPLOYMENT IMPACTS

In this chapter, the employment generated by maritime activity at the public and private marine terminals in the Illinois International Port District is documented. The chapter is organized as follows:

- First, the total employment that is in some way influenced by the activities at the public and private marine terminals is estimated.
- Second, the subset of total employment that is judged to be totally dependent on maritime activity is analyzed in the following ways:
 - ✓ Direct jobs are estimated in terms of key economic sectors, e.g., surface transportation sector.
 - ✓ Direct jobs are estimated for each of the key commodities/commodity groups.
- Third, the direct jobs are estimated by place of residence.
- Fourth, induced jobs generated by local purchases made by those directly employed as a result of port activity are described.
- Fifth, indirect jobs created by local purchases by the firms directly dependent on maritime activity are presented.

The impacts presented in this chapter are for the year 2002.

1. **TOTAL EMPLOYMENT IMPACT**

It is estimated that nearly 30,000 residents of the Chicago area are influenced by cargo and vessel activity at the public and private marine terminals, as well as the Foreign Trade Zone operated by the Port of Chicago. Of the 30,000 jobs:

- 3,367 direct jobs are generated by cargo moving over the public and private marine terminals. Of these 3,367 direct jobs, 1,586 jobs are directly dependent upon cargo moving over the public facilities. These jobs are classified as direct jobs and if activity at the public marine terminals were to cease, these jobs would be discontinued over the short term.
- 1,741 are employed by providing goods and services to the 3,367 individuals directly involved with port activity. The Port's public facilities are responsible for 800 of the 1,741 induced jobs. Consequently, employment in this group is as directly dependent

upon port activity as the first group.

- Firms directly dependent on maritime activity at the public and private marine terminals within the Port District made \$248.3 million of local purchases for office supplies, parts and equipment, maintenance and repair services, business services, utilities, communications services and fuel. These local purchases supported 3,423 indirect jobs in the local economy.
- An additional 21,000 jobs are with tenants of the Port operated Foreign Trade Zone and Subzones. Key employers in the FTZ include Abbott Laboratories Inc., PDV/Citgo Midwest Refining and Northrop Grumman Corporation. These jobs are considered to be related to the Port of Chicago, but the degree of dependence on the Port is difficult to estimate. The majority of these 21,000, are not dependent upon cargo moving over the marine terminals within the Port District, but are related to the Port since it is the operator of the Foreign Trade Zone. No further income, tax or revenue impacts are estimated for these related FTZ tenants.

The next section of this chapter is dedicated to the direct impact category of 3,367 jobs.

2. DIRECT JOB IMPACTS

As a result of port activity, 3,367 full-time jobs were directly created by activity at both public and private marine terminals within the Illinois International Port District¹. Of these 3,367 direct jobs, 1,586 jobs were created by maritime activity at the public port facilities owned by the IIPD which include Emesco Marine, Ceres, Reserve Marine Terminal, Cemex, Arrow Terminals, Kinder Morgan and Metal Management. The balance, 1,781 direct jobs, is created by the movement of cargo and vessels at the private marine terminals. Key private facilities include KCBX, Lafarge Cement, Carbose Lime, Holcim (Dundee Cement), International Salt, Nideria and SH Bell.

In this section the direct jobs are analyzed in terms of:

- Distribution by economic sector
- Distribution by commodity group
- Distribution by place of residency.

These distributions are described in more detail below.

2.1 Job Impacts by Sector

¹ Jobs are measured in terms of full-time equivalent workers. If a worker is employed only 50% of the year, the job is reported as 0.5 direct jobs.

Table 3 presents the distribution of the 3,367 direct jobs among the following economic sectors and detailed job categories within those sectors:

- Maritime service sector
- Surface transportation sector
- Dependent Shippers/Consignees
- Port Administration
- Banks and insurance sector.

Table 3 indicates that the majority of impacts are created in firms supplying maritime services. Overall, 41% of the direct jobs created by public and private marine terminals are with maritime services sector firms, and the majority of these services sector jobs are with terminal operators, employees of barge lines and towing companies, and freight forwarders. For public terminals, about 30% of the direct jobs are created with the firms in the maritime services sector. The majority of these jobs are with terminal operators, barge line employees, and members of the ILA. With respect to the private terminals, 51% of the 1,781 direct jobs are employed by firms in the maritime services sector. The majority of these maritime services jobs are with terminal operations, including jobs with salt & cement terminals, other dry bulk terminals and terminals handling stone and aggregates. Other key jobs created by the private terminals include jobs with the U.S. and Canadian Laker fleet operating on the Great Lakes, freight forwarders handling steel imports, and barge operators.

Overall, jobs with the trucking firms and railroads accounted for 24% of the 3,367 direct jobs. The majority of the rail jobs are created by moving coal, other dry bulks and steel cargoes.

Table 3
Employment Impacts by Job Category

	PUBLIC	PRIVATE	TOTAL
SURFACE TRANSPORTATION			
RAIL	40	77	116
TRUCK	85	617	702
MARITIME SERVICES			
TERMINAL EMPLOYEES	176	403	579
ILA	82	12	94
TOWING	0	2	3
PILOTS	2	2	5
AGENTS	3	6	9
SURVEYORS/CHANDLERS	4	4	8
FORWARDERS	10	105	115
WAREHOUSE&CONTAINER	1	1	2
GOV'T, UNIONS	39	39	78
MARINE EQUIPMENT	60	5	65
LAKER	0	116	116
BARGE	87	213	300
PORT AUTHORITY	17	0	17
SHIPPER/CONSIGNEES	970	170	1,140
BANKING/INSURANCE/LAW	10	10	20
TOTAL	1,586	1,781	3,367

2.2 Employment by Commodity

Most of the 3,367 direct jobs considered to be generated by port activity can be associated with the handling of specific commodities or commodity groups. Employment with certain types of firms and organizations such as state, federal and local government agencies; the insurance and banking sector; and marine construction firms, is extremely difficult to assign to specific commodity groups, and if such an assignment is made, it is often done so arbitrarily. As a result, employment in these groups (which totaled 392 jobs) was not allocated to commodity groups.

Table 4 presents the employment impacts in terms of commodity/commodity group for total maritime activity, as well as for activity at the public and private facilities.

Table 4
Distribution of Direct Job Impact by Commodity

Commodities	Public	Private	Totals
Containers	89	0	89
Steel	951	235	1,185
Grain	0	71	71
Coal	0	150	150
Cement	23	142	165
Aggregates	0	114	114
Other Dry Bulk	36	756	792
Liquid Bulk	111	21	132
Salt	0	91	91
Scrap	25	148	172
Sugar	14	0	14
Not Allocated	338	54	392
			0
Total	1,586	1,781	3,367

*Totals may not add due to rounding

This table indicates that in the year 2002, imported steel products generated the largest number of direct jobs, 1,185 jobs; 792 direct jobs are generated by the movement of dry bulk cargoes; and 165 jobs are created by the handling of cement. For the steel generated jobs, the majority are with local users and steel processors. With respect to the impact of public facilities, the majority of the jobs are generated by steel products moving via the public facilities and used by local processors and steel distribution centers. The jobs created by containers at the public terminals are due to the use of empty marine containers to move bagged grains to the West Coast by rail. At the Port, the trucks and rail cars moving the bagged grains from the mills are unloaded and then stuffed into the marine containers for the intermodal move to the West Coast, and ultimately to Asian destinations.

The majority of the jobs associated with the private terminals are generated with the dry bulk cargoes handled at these facilities. Most of these jobs supported by the dry bulk cargoes are with local truckers, as well as barge/tow operators.

3. GEOGRAPHIC DISTRIBUTION OF DIRECT JOB IMPACTS

The distribution of the direct jobs by place of residence is a useful measure of the geographic importance of the seaport to the local economy. The majority of the firms responding to the interviews provided Martin Associates with the Zip Code distribution of their workforce. Based on these Zip Codes, the direct jobs were allocated to a city and county level of detail.

Table 5 shows the distribution of the direct jobs by county.

Table 5
Distribution of Direct Jobs
by Place of Residence

	PUBLIC		PRIVATE		TOTAL
	SHARE	JOBS	SHARE	JOBS	
CHICAGO	40.97%	650	28.92%	515	1,165
COOK	14.98%	237	13.09%	233	471
DUPAGE	1.51%	24	3.12%	56	80
LAKE	0.92%	15	1.90%	34	48
WILL	9.46%	150	14.09%	251	401
OTHER IL	2.36%	37	13.81%	246	283
OTHER US	29.80%	473	25.08%	447	919
TOTAL	100.00%	1,586	100.00%	1,781	3,367

4. **INDUCED JOBS**

The regional purchases by the 3,367 direct job holders with the direct income earned from port activity creates additional jobs throughout the Chicago metropolitan area. In calendar year 2002, \$125.6 million was received as wage and salary income by those 3,367 directly employed by activity at the public and private marine terminals. As the result of the respending of a portion of this income for purchases in the Chicago region, an additional 1,741 induced jobs were generated throughout the regional economy. Of these 1,741 induced jobs, the public maritime facilities were responsible for about 800 induced jobs, while the earnings received by those employed by the private terminal activity supported 941 induced jobs.

These induced jobs are estimated based on the current expenditure profile of residents in the Chicago metropolitan area, as estimated by the U.S. Bureau of Labor Statistics, "Consumer Expenditure Survey". This survey indicates the distribution of consumer expenditures over key consumption categories for Chicago area residents. The consumption categories are:

- Housing
- Food at Restaurants
- Food at Home
- Entertainment
- Health Care
- Home Furnishings
- Transportation Equipment and Services.

The estimated consumption expenditures generated as a result of the respending impact is distributed across these consumption categories. Associated with each consumption category is the relevant retail and wholesale industry. Jobs to sales ratios in each industry are then computed

for the Chicago area, and induced jobs are estimated for the relevant consumption categories. It is to be emphasized that induced jobs are only estimated at the retail and wholesale level, since these jobs are most likely generated in the local economy area. Further levels of induced jobs are not estimated since it is not possible to defensibly identify geographically where the subsequent rounds of purchasing occur.

"The Consumer Expenditure Survey" does not include information to estimate the job impact with supporting business services, legal, social services and educational services. To estimate this induced impact, a ratio of employment in the state of Illinois in these key service industries to total state employment is developed. This ratio is then used with the direct and induced consumption jobs to estimate induced jobs with business/financial services, legal, educational and other social services.

5. INDIRECT JOBS

The firms directly dependent upon the vessel and cargo activity at the private and public marine terminals made \$248.3 million of purchases from local suppliers of parts and equipment, business services, maintenance and repair services, communications and utilities, office equipment, and fuel. These local purchases supported 3,423 local indirect jobs. If maritime activity were to cease, these indirect jobs would also be lost. To estimate these indirect jobs, actual local expenditures by port-dependent firms were estimated from the telephone surveys. The local expenditures were used as inputs into a regional input-output model developed for the Chicago metropolitan area for Martin Associates by the U.S. Bureau of Economic Analysis, Regional Input-Output Modeling System.

III. REVENUE, INCOME AND TAX IMPACTS

The movement of cargo via the public and private marine terminals within the Illinois International Port District generates revenue for each of the five economic sectors. For example, revenue is received by surface transportation firms (both railroads and trucks) as a result of moving export cargo and distributing the imported commodities inland after receipt at the marine terminals. The firms in the maritime service sector receive revenue from arranging for transportation services, cargo handling, providing services to vessels in port and repairs to vessels calling the terminals. The banking/insurance/admiralty law sector receives revenue from financial and legal services provided to users of the marine terminals. The IIPD receives revenue from leases and terminal operations. Excluded is revenue received from the Port's Harborside International Golf Course operations. In addition, revenue is received by shippers/consignees from the sales of cargo shipped or received via the marine cargo facilities and from the sales of products made with raw materials received via water. Since this chapter is concerned with the revenue generated from providing maritime services, the shipper/consignee revenue (i.e., the value of the cargo shipped or received through the terminals) will be excluded from the remaining discussion. Similarly, steamship lines revenue from the ocean linehaul portion of the cargo movements is excluded from the revenue impact, since very few vessels calling the terminals are American flag vessels, and it is not likely that a large portion of the revenue from ocean transportation remains in the local or even national economy.

The revenue generated by port activity consists of many components. For example, gross revenue is used to pay employee salaries and taxes, it is distributed to stockholders, and it is used for the purchases of equipment and maintenance services. Of these components, only three can be isolated geographically with any degree of accuracy. The personal income component of revenue can be traced to geographic locations based on the residence of those receiving the income. The local purchases by firms dependent upon maritime activity at marine terminals are identified through the interviews and used to estimate the indirect job impacts. Finally, state and local taxes paid by individuals and businesses can be traced to a geographic location based on the residency of the individuals directly employed and the location of the firms dependent on maritime activity. The balance of the revenue is distributed in the form of non-local payments to firms providing goods and services to the five sectors, for the distribution of company profits to shareholders and to payment of federal taxes. Many of these firms and owners are located outside of the Chicago region, and, thus, it is difficult to trace the ultimate location of the distributed revenue (other than personal income, taxes and local purchases).

1. REVENUE IMPACTS

In calendar year 2002, maritime activity at public and private marine facilities generated \$685.3 million of total revenue. Activity at the public facilities generated \$402.2 million of revenue, while activity at the private terminals created \$283.2 million of revenue. Table 6 presents the revenue impact generated by impact category for maritime activity at public and

private terminals.

Table 6
Total Revenue Generated by
Port Activity
(1,000 Dollars)

	PUBLIC	PRIVATE	TOTAL
SURFACE TRANSPORTATION			
RAIL	\$14,092	\$50,430	\$64,521
TRUCK	\$7,349	\$58,109	\$65,459
MARITIME SERVICES			
TERMINAL EMPLOYEES	\$10,353	\$21,185	\$31,538
TOWING	\$153	\$808	\$961
PILOTS	\$2,526	\$2,204	\$4,729
AGENTS	\$40	\$35	\$76
SURVEYORS/CHANDLERS	\$1,440	\$1,440	\$2,880
FORWARDERS	\$1,196	\$12,489	\$13,685
WAREHOUSE&CONTAINER**	na	na	na
GOV'T, UNIONS	na	na	na
MARINE EQUIPMENT	\$3,388	\$385	\$3,773
LAKER	\$0	\$21,256	\$21,256
BARGE	\$5,470	\$51,294	\$56,764
PORT AUTHORITY	\$3,239	na	\$3,239
SHIPPER/CONSIGNEES	\$350,898	\$61,498	\$412,395
BANKING/INSURANCE/LAW	\$2,020	\$2,020	\$4,040
TOTAL	\$402,164	\$283,152	\$685,316

*Totals may not add due to rounding

** Revenue from Warehouse Operations included with Terminal Operations

Firms in the surface transportation sector received \$130 million of revenue. Of this \$130 million of revenue, the distribution was nearly equal between truck and rail. The revenue generated by the surface transportation sector is based on the relevant modal (rail or truck) rate for a commodity multiplied by the tonnage of that commodity moved to and from the marine terminals by the specified mode. The share of each commodity transported by rail and truck was estimated from interviews with the terminal operators handling the respective commodities.

The relative modal shares were then applied to the port tonnage (or units) of the specific cargo. Average rail rates were obtained from Norfolk Southern, Union Pacific and BNSF railroads as well as from importers and shippers/consignees. These rates were multiplied by the tonnage of each commodity carried by rail to estimate revenue accruing to railroads. The trucking revenue was based on interviews with terminal operators, steamship lines, and shippers/consignees.

About \$135.6 million of revenue was received by firms in the maritime service sector.

Forty-two percent was received by the barge operators, while twenty-three percent of the maritime service sector revenue was received by terminal operators, 16% by the laker operations and 10% by firms providing freight forwarding and customhouse brokering services. The revenue accruing to the maritime service sector was estimated from interview results with terminal operators who provided stevedoring revenue per ton (or unit) estimates for each commodity. Revenue impacts for other maritime service sector categories are based on the interviews and include agency revenue per vessel call, freight forwarders revenue per ton of breakbulk and bulk cargo, revenue from the sale of bunkers, revenue from marine construction activity, revenue per pilotage assignment and tug assist, and revenue per vessel for line handling.

The Illinois International Port District received about \$3.2 million in revenues, from Port tariffs and revenue generated by marine terminal leases, (excluding revenue from Harborside International Golf Course operations).

The \$4 million in revenue was generated by the local banks, law firms and insurance brokers as a result of international financial transactions and the provision of marine and cargo insurance and legal services, and is based on the surveys.

Table 7 shows the revenue impact by commodity for cargo moving over public and private facilities.

Table 7
Revenue Impacts by Commodity
(1,000 of Dollars)

Commodities	Public	Private	Totals
Containers	\$ 3,945	\$ -	\$ 3,945
Steel	\$ 286,922	\$ 80,685	\$ 367,607
Grain	\$ -	\$ 16,424	\$ 16,424
Coal	\$ -	\$ 48,579	\$ 48,579
Cement	\$ 3,325	\$ 5,417	\$ 8,742
Aggregates	\$ -	\$ 7,022	\$ 7,022
Other Dry Bulk	\$ 8,866	\$ 94,869	\$ 103,735
Liquid Bulk	\$ 8,634	\$ -	\$ 8,634
Salt	\$ 19	\$ 18,960	\$ 18,978
Scrap	\$ 754	\$ 8,791	\$ 9,545
Sugar	\$ 4,361	\$ -	\$ 4,361
Not Allocated	\$ 85,338	\$ 2,405	\$ 87,743
			\$ -
Total	\$ 402,164	\$ 283,152	\$ 685,316

*Totals may not add due to rounding

Steel products generated the largest revenue impact -- \$367.6 million, followed by other dry bulk cargoes and coal movements.

2. PERSONAL INCOME IMPACTS

In the previous section of this chapter, the total revenue generated by port activity was identified. As described earlier, the personal income received by those directly dependent upon port activity is one of the components of revenue that can be traced to the Chicago metropolitan area. The income impact is estimated by multiplying the average annual earnings of each port participant, i.e., railroad employees, truckers, steamship agents, freight forwarders, bankers, insurance agents, etc., by the corresponding number of jobs in each category. The individual annual earnings in each category multiplied by the corresponding job impact resulted in \$125.6 million in personal income. This represents an average annual salary of about \$37,291. Of the \$125.6 million of income received, about \$56.9 million was generated by cargo moving over the public facilities.

Based on data developed by the U.S. Bureau of Economic Analysis, it is estimated that for every one dollar earned by Chicago area residents as a result of jobs directly generated by port activity, an additional \$1.12 of income would be created as a result of re-spending the income for purchases of regionally produced goods and services. This re-spending generated an additional \$141 million of local personal income and consumption expenditures in local business and service providers. This additional re-spending of the direct income generates the induced job impact, 1,741 jobs, described in the previous chapter. It is important to note that the \$141 million of re-spending impact includes a consumption impact as well as an income impact, and dividing the re-spending impact by the induced jobs will result in an overestimate of induced wages received by the induced job holders.

The indirect jobholders received \$131.9 million of personal wages and salaries. Combining the direct, induced and indirect income impacts, maritime cargo activity at the public and private terminals created \$398.4 million of wages and salaries and local consumption expenditures. The public terminals created \$95.7 million of the total \$131.9 million personal wage and salary income impact.

3. LOCAL PURCHASES

The firms directly dependent upon the maritime activity at the public and private terminals made \$248.3 million of local purchases. These local purchases were for maintenance and repair services, utilities, communications services, office products, parts and equipment, fuel, etc. The \$248.3 million of local purchases supported the 3,423 indirect jobs.

4. TAX IMPACTS

State and local tax impacts are based on state and local tax burdens for Illinois and Indiana residents, which are developed from data provided by the Tax Foundation. The tax burdens are the total state and local taxes collected divided by total state income.

The state and local taxes for which estimates have been developed include:

- State and local personal and corporate income tax
- Property tax
- State fuel tax
- Local sales taxes
- Property taxes.

Maritime activity at the public and private marine terminals generated \$39.8 million of state and local taxes. Operations at the public terminals created \$21.6 million in state and local tax revenue, while private terminal operations created \$18.2 million.