

**APPENDIX A:
THE LOCAL AND REGIONAL ECONOMIC IMPACTS OF PORT OF
CLEVELAND**

Martin Associates

**April 5, 2011
Calendar Year 2008**

**Martin Associates
941 Wheatland Avenue
Suite 203
Lancaster, PA 17603**

Port of Cleveland’s Strategic Action Plan: Technical Appendices
Appendix A: The Local and Regional Economic Impacts of Port of Cleveland

TABLE OF CONTENTS

EXECUTIVE SUMMARY	A-3
I. INTRODUCTION AND OVERVIEW.....	A-6
1. IMPACT DEFINITIONS.....	A-7
2. METHODOLOGY	A-8
2.1. Data Collection	A-8
2.2. Direct Impacts	A-9
2.3. Induced Impacts	A-9
2.4. Indirect Impacts.....	A-10
2.5. Related Impacts.....	A-10
2.6. Tax Impacts	A-10
3. SUMMARY OF RESULTS.....	A-11
II. ECONOMIC IMPACTS OF PORT OF CLEVELAND MARITIME CARGO ACTIVITY.....	A-13
1. IMPACT STRUCTURE	A-13
1.1. The Surface Transportation Sector.....	A-13
1.2. The Maritime Services Sector.....	A-13
1.3. Related Shipper/Consignees.....	A-15
1.4. Cleveland–Cuyahoga County Port Authority	A-15
2. COMMODITIES INCLUDED IN THE ANALYSIS.....	A-15
3. MARITIME CARGO EMPLOYMENT IMPACTS	A-16
3.1. Direct Maritime Cargo Job Impacts	A-16
3.1.1. Job Impacts by Category.....	A-17
3.1.2. Direct Job Impacts by Commodity	A-18
3.1.3. Distribution of Direct Cargo Jobs by Place of Residence	A-19
3.2. Induced Jobs.....	A-19
3.3. Indirect Jobs.....	A-19
3.4. Related User (Shipper/Consignee) Jobs	A-20
4. TOTAL ECONOMIC OUTPUT AND BUSINESS REVENUE IMPACTS.....	A-20
Source: Martin Associates, 2010	A-21
5. PERSONAL EARNINGS IMPACT	A-22
6. TAX IMPACTS.....	A-22
III. ECONOMIC IMPACTS OF CLEVELAND HARBOR SYSTEM.....	A-23
IV. ECONOMIC IMPACTS OF DEVELOPMENT FINANCE PROGRAM.....	A-25
V. CONCLUSION.....	A-28

Port of Cleveland's Strategic Action Plan: Technical Appendices
Appendix A: The Local and Regional Economic Impacts of Port of Cleveland

EXECUTIVE SUMMARY

As part of the Cleveland-Cuyahoga County Port Authority (CCCPA) Strategic Plan, Martin Associates was retained to measure the local, regional, and state economic impacts generated by maritime activity at the Port of Cleveland's lakeside docks, specifically Docks 20-30 as well as the Cleveland Bulk Terminal (CBT).

This study focuses on impacts generated in calendar year 2008. 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.

Commercial cargo activity at the Port of Cleveland generates significant impacts in the local and regional Northeast Ohio area. More than 10,800 jobs and \$66.9 million in state and local tax receipts annually are tied to the Port of Cleveland. When private commercial terminals along the Cuyahoga River System are factored in, the numbers rise to more than 17,800 jobs in the State of Ohio and \$112.3 million in state and local taxes.

This study is based on interviews conducted in 2010 with 250 companies providing services to the cargo and vessels handled at the Port of Cleveland terminals. These represent 99 percent of the companies in the Cleveland port community. As part of this economic impact assessment, Martin looked at four types of jobs:

- Direct jobs with local firms providing support services to the lakefront and river terminals. These jobs are dependent on the local maritime economy.
- Induced jobs created locally and throughout the regional economy due to purchases of goods and services by those directly employed.
- Indirect jobs generated in the local economy as the result of local purchases by the firms directly dependent upon seaport activity.
- Related user jobs are held throughout the state with manufacturing and wholesale and retail distribution firms using the seaport terminals for the shipment and receipt of cargo.

The economic impacts generated by the cargo terminals are summarized in Exhibit E-1.

Port of Cleveland's Strategic Action Plan: Technical Appendices
Appendix A: The Local and Regional Economic Impacts of Port of Cleveland

Exhibit E-1 CY2008 Local and Regional Economic Impacts Generated by the Port of Cleveland*

CATEGORY	CARGO
JOB	
DIRECT	2,042
INDUCED	2,445
INDIRECT	2,872
RELATED USER JOBS	3,455
TOTAL JOBS	10,814
PERSONAL INCOME (1,000)	
DIRECT	\$86,878
CONSUMPTION AND RESPENDING	\$293,153
INDIRECT	\$123,796
RELATED USER INCOME	\$139,773
TOTAL PERSONAL INCOME	\$643,600
VALUE OF ECONOMIC ACTIVITY (1,000)	
BUSINESS SERVICES REVENUE	\$150,917
TENANT/DEPENDENT SHIPPER REVENUE	\$985,581
RELATED USER OUTPUT	\$301,527
TOTAL VALUE OF ECONOMIC ACTIVITY	\$1,438,026
LOCAL PURCHASES (1,000)	\$229,164
STATE & LOCAL TAXES (1,000)	
DIRECT, INDUCED AND INDIRECT	\$52,398
RELATED USER TAXES	\$14,536
TOTAL STATE AND LOCAL TAXES	\$66,934

* Totals may be rounded.

Source: Martin Associates, 2010

The cargo activity at the Port of Cleveland generated the following estimated impacts in the regional economy in CY2008:

- 10,814 jobs in Ohio are in some way related to the cargo and mixed use activity at the Port of Cleveland. Of the 10,814 total jobs:
 - **2,042 direct jobs** are generated by the cargo activity.
 - As a result of local and regional purchases by those 2,042 individuals holding direct jobs, an additional **2,445 induced jobs** are supported in the regional economy.

Port of Cleveland's Strategic Action Plan: Technical Appendices
Appendix A: The Local and Regional Economic Impacts of Port of Cleveland

- **2,872 indirect jobs** were supported by \$229.2 million of local purchases by businesses supplying services at the cargo terminals and mixed use areas, and by businesses dependent upon Port of Cleveland for the shipment and receipt of cargo.
- The import and export cargo moving via the Port of Cleveland cargo terminals supports **3,455 related user jobs** with the state's manufacturing, retail and wholesale, and distribution industries, and the in-state industries supporting the movement and distribution of all commodities, primarily concentrated with iron ore and steel imports used in primary steel manufacturing and steel processing.
- **Approximately \$643.6 million of wages and salaries were generated by the Port of Cleveland cargo activity in 2008.**
 - **\$86.9 million of direct wages and salaries** were received by those 2,042 directly employed.
 - As a result of re-spending this direct job holder income, an **additional \$293.2 million of income and consumption expenditures were created**, and supported the 2,445 induced jobs.
 - The 2,872 indirect job holders received **\$123.8 million of indirect wages**.
 - The 3,455 related user job holders generated **\$139.8 million in personal income**.
- **The 2008 cargo activity at the Port of Cleveland generated \$1.4 billion in economic value to the State of Ohio.**
 - Businesses providing services to the cargo terminals received **\$150.9 million of revenue**. Revenue from **dependent shippers and consignees totaled nearly \$986 million**.
 - In addition, the cargo activity in the Port supports an additional **\$301.5 million of related economic output** in the state, the majority of which is created by the in-state industries supporting the primary steel making and processing industries.
- Local businesses and suppliers to the cargo and mixed use industries at the Port of Cleveland made **\$229.2 million of local purchases**.
- **\$66.9 million of state and local taxes** were generated by activity at the Port of Cleveland including **\$14.5 million generated by the related users** throughout the state.

Port of Cleveland's Strategic Action Plan: Technical Appendices
Appendix A: The Local and Regional Economic Impacts of Port of Cleveland

I. INTRODUCTION AND OVERVIEW

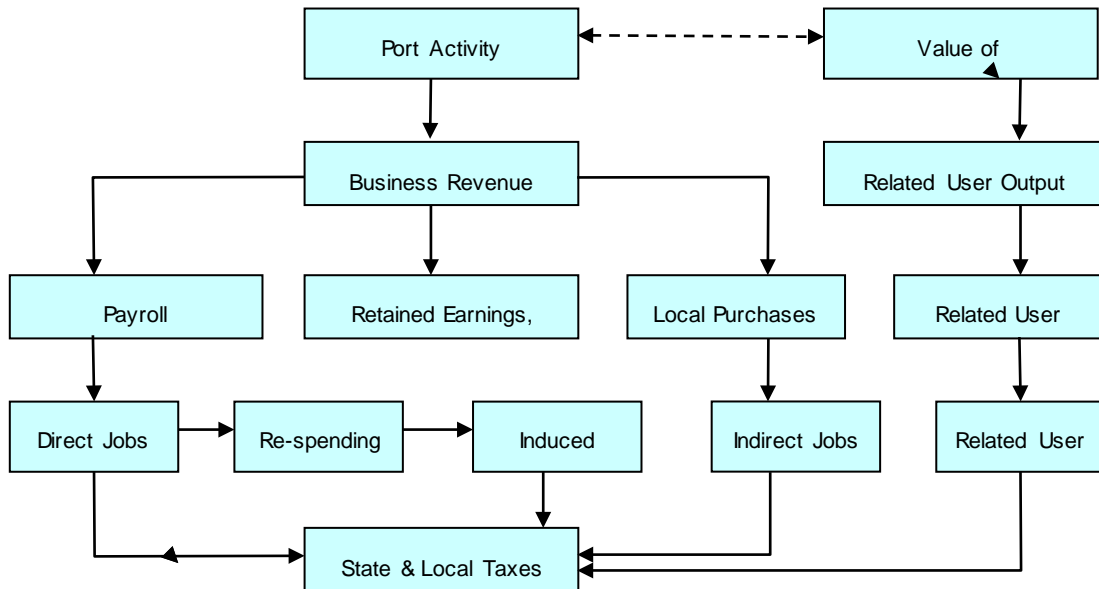
As part of the Cleveland-Cuyahoga County Port Authority (CCCPA) Strategic Plan, Martin Associates was retained by the CCCPA to measure the local, regional, and state economic impacts generated by maritime activity at the Port of Cleveland's public Lakeside docks, specifically Docks 20-30 as well as the Cleveland Bulk Terminal (CBT). Cargoes that generate economic impact include: iron ore, cement, aggregates, limestone, steel, and general cargo.

The study employs methodology and definitions that have been used by Martin Associates to measure the economic impacts of seaport activity at more than 250 ports in the United States and Canada, and at the leading airports in the United States. It is to be emphasized that only measurable impacts are included in this study. 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 Cleveland terminals and the firms providing cargo services at the Port. Specific re-spending models have been developed for the Cleveland area to reflect the unique economic and consumer profiles of the regional economy. To further underscore the defensibility of the study, standardized impact models, such as the MARAD Port Kit are not used. Instead, the resulting impacts reflect the uniqueness of the individual Port operations, as well as the surrounding regional economy.

Exhibit I-1 on the following page graphically demonstrates how seaport activity impacts the local and regional economies. As this exhibit indicates, the ocean cargo and vessel activity initially generate business revenue to the firms supplying services to the cargo handling industry. This revenue is used to purchase employment (employ direct jobs) to provide these services, to pay stockholders and for retained earnings, and to purchase goods and services from local, national, and international firms (creating indirect jobs with these firms). Also, these businesses pay taxes from the business revenue generated from marine cargo activity.

**Port of Cleveland's Strategic Action Plan: Technical Appendices
Appendix A: The Local and Regional Economic Impacts of Port of Cleveland**

Exhibit I-1 Flow of Economic Impacts of Port of Cleveland Activity through the Economy



Source: Martin Associates, 2010

The employees hired by the firms receive wages and salaries (personal income), a portion of which is saved, while another portion is used to buy goods and services such as food, housing, clothing, health care, etc. These purchases create a re-spending impact throughout the economy, known as the personal income multiplier. As a result of these local purchases, additional jobs (known as induced jobs) are created in the local economy. Finally, taxes are paid by individuals employed with the firms providing the services to the seaport terminals.

As demonstrated by this chart, four categories of impacts are measured:

- Jobs;
- Employee earnings;
- Business revenue; and
- State and local taxes.

1. IMPACT DEFINITIONS

The impacts are measured separately for the Port's cargo activity.

The impacts are measured in terms of:

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

Port of Cleveland's Strategic Action Plan: Technical Appendices
Appendix A: The Local and Regional Economic Impacts of Port of Cleveland

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 ceased. Direct jobs created by maritime cargo activity at the terminals are those jobs with the firms directly providing cargo handling and vessel services, including trucking companies, terminal operators and stevedores, members of the International Longshoremen's Association (ILA), non-union dockworkers, freight forwarders, and customhouse brokers, vessel agents, vessel and barge crewmembers, pilots, and tug assist companies.
 - **Induced jobs** are created in the Cleveland area by the purchases of goods and services by those individuals directly employed by companies tied to local maritime activity. These jobs are based on the local purchase patterns of Cleveland- area residents. The induced jobs are 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 Cleveland area as the result of purchases for goods and services by the firms directly impacted by Port of Cleveland activity, including the tenants, terminal operators, and the firms providing services to cargo operations. The indirect jobs are measured based on actual local purchase patterns of the directly dependent firms, and occur with such industries as utilities, office supplies, contract service providers, maintenance and repair, and construction.
 - **Related shipper/consignee (related user) jobs** with firms using the cargo terminals to ship and receive cargo. These jobs are not entirely dependent upon the Port activity, but reflect the importance of the Port to local firms. While the facilities and services provided in the seaport are a crucial part of the infrastructure allowing these jobs to exist, they would not necessarily be immediately displaced if marine cargo were to cease. These jobs include jobs associated with iron ore and primary steel mill operations (specifically ArcelorMittal), as well as salt, aggregates, and limestone.
- **Personal income impact** consists of wages and salaries received by those directly employed by Port activity, and includes a re-spending impact that measures the personal consumption activity in the Cleveland area of those directly employed as the result of Port of Cleveland 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 river cargo activity. **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 Cleveland cargo activity.

2. METHODOLOGY

2.1. Data Collection

The impacts of Port of Cleveland presented in this report were estimated based on telephone and personal interviews with 250 firms in the Cleveland area. This represents the universe of the cargo related businesses (with the exception of trucking and freight forwarding firms) operating at the Port of Cleveland and along the Cuyahoga River, as defined by the Port of Cleveland services directory, the

Port of Cleveland's Strategic Action Plan: Technical Appendices
Appendix A: The Local and Regional Economic Impacts of Port of Cleveland

Cuyahoga River Community Planning Organization – Remedial Action Plan, the Flats Oxbow Organization, and Cleveland Industrial Retention Initiative. It is to be emphasized that a 99% response rate was achieved from these firms located in these directories and occupant listings. The direct impacts are measured at the firm level of detail, and aggregated to develop the impacts for the Port of Cleveland. Each firm surveyed provided Martin Associates with detailed employment levels (both full time and part time), annual payroll, local purchases, and the residence of the employees. To estimate the CY2008 impacts data was collected from the Lake Carriers Association, and the US Army Corps of Engineers Waterborne Commerce Statistics, and the Cleveland-Cuyahoga County Port Authority.

2.2. Direct Impacts

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

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

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

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

2.3. Induced Impacts

Induced impacts are those generated by the purchases of the individuals employed as a result of cargo activity. For example, a portion of the personal earnings received by those directly employed due to activity at the seaport is used for purchases of goods and services, both in-state, as well as out-of-state. These purchases, in turn, create additional jobs in the State of Ohio, which are classified as induced. To estimate these induced jobs, a personal earnings multiplier for the State of Ohio 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 Cleveland/Akron Metropolitan area residents, as developed from the U.S. Bureau of Labor Statistics, Consumer Expenditure Survey, 2006-2007). These purchases are next converted into retail and wholesale induced jobs in the regional economy.

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

Port of Cleveland's Strategic Action Plan: Technical Appendices
Appendix A: The Local and Regional Economic Impacts of Port of Cleveland

2.4. Indirect Impacts

Indirect jobs are generated in the local economy as the result of purchases by firms that are directly dependent upon activity at the marine cargo terminals. 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 250 firms interviewed. These local purchases were then combined with employment-to-sales ratios in local supplying industries, developed from U.S. Bureau of Economic Analysis, Regional Input-Output Modeling System for the State of Ohio. These jobs-to-sales ratios capture the numerous spending rounds associated with the supply of goods and services. Special care has been exercised to avoid double counting the indirect impacts, and to specifically include only the expenditures by the directly dependent firms that are, in fact, local.

2.5. Related Impacts

Related impacts measure the jobs with shippers and consignees moving cargo through the marine terminals. These jobs are classified as related jobs, since the firms using the seaport facilities for the movement of marine cargo can and do use other seaports. Related impacts for the Port facilities were estimated by multiplying the value of the cargo moving via the marine terminals with jobs-to-sales ratios specific to the exporters and importers.¹

2.6. Tax Impacts

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

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

Port of Cleveland's Strategic Action Plan: Technical Appendices
Appendix A: The Local and Regional Economic Impacts of Port of Cleveland

3. SUMMARY OF RESULTS

Exhibit I-2 provides cargo results for the economic impact analysis of the Port of Cleveland.

Exhibit I-2 CY2008 Economic Impact of Port of Cleveland Cargo Activity*

CATEGORY	CARGO
JOBS	
DIRECT	2,042
INDUCED	2,445
INDIRECT	2,872
RELATED USER JOBS	3,455
TOTAL JOBS	10,814
PERSONAL INCOME (1,000)	
DIRECT	\$86,878
CONSUMPTION AND RESPENDING	\$293,153
INDIRECT	\$123,796
RELATED USER INCOME	\$139,773
TOTAL PERSONAL INCOME	\$643,600
VALUE OF ECONOMIC ACTIVITY (1,000)	
BUSINESS SERVICES REVENUE	\$150,917
TENANT/DEPENDENT SHIPPER REVENUE	\$985,581
RELATED USER OUTPUT	\$301,527
TOTAL VALUE OF ECONOMIC ACTIVITY	\$1,438,026
LOCAL PURCHASES (1,000)	\$229,164
STATE & LOCAL TAXES (1,000)	
DIRECT, INDUCED AND INDIRECT	\$52,398
RELATED USER TAXES	\$14,536
TOTAL STATE AND LOCAL TAXES	\$66,934

*Totals may be rounded.

Source: Martin Associates, 2010

In CY2008, the Port of Cleveland supported 10,814 jobs in the State of Ohio. Of those, 2,042 jobs are directly created by port activities, while an-additional 2,445 induced jobs are generated in the Cleveland area as a result of local purchases made by those directly employed due to Port of Cleveland cargo activity. There are 2,872 indirect jobs supported in the Northeast Ohio area as the result of \$229.2 million of local purchases. In addition, the cargo moving via Port of Cleveland terminals supports 3,455 jobs throughout the State of Ohio. The majority of these jobs are associated with the services related to primary steel manufacturing and steel processing.

Port of Cleveland's Strategic Action Plan: Technical Appendices
Appendix A: The Local and Regional Economic Impacts of Port of Cleveland

The 2,042 direct jobs received \$86.9 million of direct wage and salary income, for average earnings of \$42,540 per direct employee. As a result of local purchases with this \$86.9 million of direct wages and salaries, an additional \$293.2 million of income and local consumption expenditures were created in the Cleveland area. It is this re-spending impact that supported the 2,445 induced jobs.² The indirect job holders received \$123.8 million in personal income. In total, \$643.6 million of personal income was created as the result of Port of Cleveland operations, including the \$139.8 million received by those employed with the related users of the Port.

Local businesses received \$150.9 million of sales revenue from providing services to the cargo activity. The dependent users located within the Harbor generated an additional \$985.6 million in economic activity. This does not include the value of the cargo moving via the Port. The cargo activity at the Port supported an additional \$301.5 million of total economic output in the state. It is to be emphasized that only the economic activity associated with the raw materials and finished products that move via the Port of Cleveland terminals is included.

As a result of the cargo activity at the Port of Cleveland, a total of \$66.9 million of state and local tax revenue was generated.

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

² 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 Cleveland area. Hence, the average salary would be overestimated.

II. ECONOMIC IMPACTS OF PORT OF CLEVELAND MARITIME CARGO ACTIVITY

1. IMPACT STRUCTURE

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

- Surface Transportation Sector;
- Maritime Services Sector;
- Related Shippers/Consignees Sector; and
- Cleveland-Cuyahoga County Port Authority.

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

1.1. The Surface Transportation Sector

The surface transportation sector consists of trucking firms and railroads 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 ocean transportation. This function performed by freight forwarders and customhouse brokers is most prevalent for containerized and general cargo commodities.
- Vessel Operations
This category consists of several participants. The steamship agents provide a number of services for the vessel as soon as it enters the port. The agents arrange for medical and dental care of the crew, for ship supplies, as well as payment of various expenses including port charges (where applicable). The agents are also responsible for vessel documentation. In addition to the steamship agents arranging for vessel services, those providing the services include:
 - Chandlers – supply the vessels with ship supplies (food, clothing, nautical equipment, etc.);
 - Towing firms – provide the tug service to guide the vessel to and from port;

Port of Cleveland's Strategic Action Plan: Technical Appendices
Appendix A: The Local and Regional Economic Impacts of Port of Cleveland

- Vessel and barge crew members – those individuals aboard the vessels and barges to and from port;
- Pilots – assist in navigating the vessels to and from the Port and Cuyahoga River maritime terminals (iron ore transshipped to/ from CBT to ArcelorMittal);
- 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's Association (ILA), as well as those dockworkers with no union affiliation who 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. These include the U.S. Department of Homeland Security, which includes (but is not limited to) the U.S. Customs and Border Protection, U.S. Immigration and Customs Enforcement, U.S. Coast Guard, U.S. Department of Labor, U.S. Department of Agriculture, and the U.S. Army Corps of Engineers.

Port of Cleveland's Strategic Action Plan: Technical Appendices
Appendix A: The Local and Regional Economic Impacts of Port of Cleveland

1.3. Related Shipper/Consignees

Related jobs are with related shippers/consignees that are shipping and receiving cargo through the Port of Cleveland 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 Cleveland is considered in this related user impact. It is important to note that the majority of the iron ore handled at CBT is transshipped to a user (ArcelorMittal) via smaller vessels that are capable of navigating the Cuyahoga River.

1.4. Cleveland–Cuyahoga County Port Authority

The Cleveland-Cuyahoga County Port Authority includes those individuals employed by the City/County agency whose purpose is to oversee activity at the Port of Cleveland.

2. COMMODITIES INCLUDED IN THE ANALYSIS

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

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

- Steel Coils;
- Iron Ore;
- Sand/Aggregates;
- Limestone;
- Cement; and
- Other General Cargo.

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

Port of Cleveland's Strategic Action Plan: Technical Appendices
Appendix A: The Local and Regional Economic Impacts of Port of Cleveland

3. MARITIME CARGO EMPLOYMENT IMPACTS

The employment generated by maritime cargo activity at the Port of Cleveland is estimated.

- First, the total employment that is in some way related to the activities at cargo terminals is estimated from the CY2008 interview process of 250 harborfront and riverfront occupants as well as service providers and CY2008 data obtained by the CCCPA 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, ILA/dockworkers, steamship lines, steamship agents, chandlers, surveyors, etc.;
 - The direct job impact is estimated for each of the key commodities/commodity groups;
 - The direct job impact is estimated based on the residency of those directly employed;
- Induced and indirect jobs are estimated;
- Finally, jobs related to the maritime activity at the cargo terminals are described.

It is estimated that 10,814 jobs are directly or indirectly generated by port activities at the cargo terminals within the Port of Cleveland. Of those jobs:

- 2,042 jobs are directly generated by activities at the cargo terminals and if such activities should cease, these jobs would be discontinued over the short term.
- 2,445 jobs (induced jobs) are supported by the local purchases of the 2,042 individuals directly generated by port activity at the cargo terminals. An additional 2,872 indirect jobs were supported by \$229.2 million of purchases in the local and regional economy by firms providing direct cargo handling and vessel and barge services.
- 3,455 jobs are related to cargo loaded and discharged over the docks at the Port of Cleveland. These jobs are supported in the state's manufacturing, retail, wholesale, and distribution industries, as well as in the in-state industries supporting the movement, processing, and distribution of all commodities, particularly those connected to primary steel manufacturing and steel processing services within the state.

3.1. Direct Maritime Cargo Job Impacts

In CY2008, nearly 2.8 million tons of waterborne cargo moved via the Port of Cleveland terminals. As a result of this activity, 2,042 full-time jobs were directly created³. In this section the jobs are analyzed in terms of:

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

These distributions are developed in more detail below.

³ Jobs are measured in terms of full-time worker equivalents. If a worker is employed only 50 percent of the time by activity at a Port cargo terminal, then this worker is counted as .5 jobs.

Port of Cleveland's Strategic Action Plan: Technical Appendices
Appendix A: The Local and Regional Economic Impacts of Port of Cleveland

3.1.1. Job Impacts by Category

Exhibit II-1 presents the distribution of the 2,042 direct jobs by type of job. The exhibit indicates that the majority of direct jobs (1,557) are with dependent users primarily located on the Cuyahoga River, followed by line haul barge and vessel jobs (167) moving cargo to and from the terminals.

Exhibit II-1 Cargo Employment Impacts by Sector and Job Category

SECTOR		DIRECT JOBS
SURFACE TRANSPORTATION		
	RAIL	21
	TRUCK	73
MARITIME SERVICES		
	TERMINAL EMPLOYEES/DOCKWORKERS	25
	ILA	66
	TOWING	9
	PILOTS	8
	STEAMSHIP AGENTS	10
	MARITIME SERVICE PROVIDERS	72
	GOVERNMENT	9
	LINEHAUL BARGE & VESSEL	176
DEPENDENT SHIPPERS/CONSIGNEES		1,557
CCCPA		17
TOTAL		2,042

Source: Martin Associates, 2010

Port of Cleveland's Strategic Action Plan: Technical Appendices
Appendix A: The Local and Regional Economic Impacts of Port of Cleveland

3.1.2. Direct Job Impacts by Commodity

Most of the 2,042 jobs considered to be generated by port activity can be associated with the handling of specific commodities or commodity groups. Certain groups of workers, such as government employees, cannot be identified with a specific commodity. As a result, employment in these groups (which totaled 26) was not allocated to commodity groups. Exhibit II-2 presents the relative employment impacts in terms of commodity groups.

Exhibit II-2 Distribution of Direct Cargo Job Impact by Commodity

COMMODITY	DIRECT JOBS
STEEL COILS	194
AGGREGATE	24
LIMESTONE	56
IRON ORE	1,734
CEMENT	8
NOT ALLOCATED	26
TOTAL	2,042

Source: Martin Associates, 2010

The movement of iron ore used in local steel manufacturing and finished steel coil support the largest number of direct jobs, 1,734 and 194 respectively. The majority of the remaining direct jobs are supported by the movement of limestone, aggregate, and cement.

Port of Cleveland's Strategic Action Plan: Technical Appendices
Appendix A: The Local and Regional Economic Impacts of Port of Cleveland

3.1.3. Distribution of Direct Cargo Jobs by Place of Residence

To underscore the geographic scope of the impacts generated by the cargo terminals, Exhibit II-3 presents the distribution of the 2,042 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 82% of the direct employees reside in Cuyahoga – 35% reside in Cleveland while another 47% live in other parts of Cuyahoga County.

Exhibit II-3 Distribution of Direct Cargo Jobs by Place of Residence

JURISDICTION	PERCENT	NUMBER
CLEVELAND	34.7%	708
CUYAHOGA	46.7%	955
LAKE	3.8%	78
LORAIN	5.3%	109
ASHTABULA	2.8%	57
GEAUGA	2.6%	53
MEDINA	0.5%	11
SUMMIT	3.3%	67
OTHER	0.3%	5
TOTAL	100.0%	2,042

Source: Martin Associates, 2010

3.2. Induced Jobs

The 2,042 individuals employed due to activity at the cargo terminals received wages and salaries, a part of which was used to purchase local goods and services such as food, housing, clothing, transportation services, etc. As a result of these local purchases, 2,445 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 2,042 workers 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 \$229.2 million of local and in-state purchases. These direct local purchases created an additional 2,872 indirect jobs in the local economy.

Port of Cleveland's Strategic Action Plan: Technical Appendices
Appendix A: The Local and Regional Economic Impacts of Port of Cleveland

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 3,455 jobs with regional steel processing and construction firms are related to cargo moving via the Port of Cleveland marine cargo terminals. It is to be emphasized that these jobs are only related jobs, not jobs dependent upon the Port of Cleveland.

4. TOTAL ECONOMIC OUTPUT AND BUSINESS REVENUE IMPACTS

The revenue impact is a measure of the *total economic activity* in the state that is generated by the cargo moving via the Port of Cleveland. In 2008, marine cargo activity at the Port generated a total of \$1.44 billion of total economic activity in the region. Of the \$1.44 billion, \$150.9 million is the direct business revenue received by the firms directly dependent upon the Port and providing maritime services and inland transportation services for the cargo handled at the marine terminals and the vessels calling the port. The remaining \$1.3 billion represents the revenue generated by the dependent shippers and consignees as well as the value of the output to the State of Ohio that is created due to the cargo moving via the Port of Cleveland marine terminals. This includes the value added at each stage of producing an export cargo, as well as the value added at each stage of production for the firms using imported raw materials, such as steel, and intermediate products that flow via the marine terminals and are consumed by industries within the state.

The balance of the discussion focuses on the \$150.9 million of direct business revenue generated from the provision of services to the cargo, vessels, and barges handled at the Port of Cleveland marine terminals.

Port of Cleveland's Strategic Action Plan: Technical Appendices
Appendix A: The Local and Regional Economic Impacts of Port of Cleveland

Exhibit II-4 shows the distribution of this revenue impact by category and economic sector. As this exhibit indicates the barge and laker transportation activities receive the largest share of the total revenue impact, \$97.1 million, followed by trucking firms that receive about \$10.8 million.

Exhibit II-4 Revenue Impact by Category and Economic Sector

SECTOR		REVENUE
SURFACE TRANSPORTATION		
	RAIL	\$8,695
	TRUCK	\$10,841
MARITIME SERVICES		
	TERMINAL EMPLOYEES/DOCKWORKERS	\$8,674
	TOWING	\$1,132
	PILOTS	\$10,255
	AGENTS	\$642
	MARITIME SERVICE PROVIDERS	\$8,950
	GOVERNMENT	NA
	BARGE AND LAKER	\$97,093
CCCPA		\$4,636
TOTAL		\$150,917

Source: Martin Associates, 2010

Similarly, Exhibit II-5 shows the direct revenue impact by commodity. It is to be emphasized that the revenue received by shippers/consignees from the sales of the products (value of the commodities) moving via the seaport terminals is not included, since product value is determined by the demand for the product, not the use of the cargo terminals.

Exhibit II-5 CY2008 Cargo Revenue Impacts by Commodity

COMMODITY	REVENUE (1000)
STEEL COILS	\$32,799
AGGREGATE	\$3,486
LIMESTONE	\$20,056
IRON ORE	\$89,226
CEMENT	\$715
NOT ALLOCATED	\$4,636
TOTAL	\$150,917

Source: Martin Associates, 2010

As this exhibit indicates iron ore and finished steel products combined generate the largest direct revenue impacts, followed by limestone.

Port of Cleveland’s Strategic Action Plan: Technical Appendices
Appendix A: The Local and Regional Economic Impacts of Port of Cleveland

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 \$86.8 million in personal wage and salary earnings. It is important to emphasize that the average annual earnings of a Port cargo-dependent job is about \$42,540. 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. This personal earnings multiplier is based on data supplied by the Bureau of Economic Analysis (BEA), Regional Input-Output Modeling System (RIMS II). The BEA estimates that for every one dollar earned by direct employees generated by activity at the cargo terminals, an additional \$3.37 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 \$4.37 was used to estimate the total income and consumption impact of \$293.2 million, inclusive of the re-spending effect. This additional re-spending of the direct income generated the 2,445 induced job impacts.

The 2,872 indirect job holders earned \$123.8 million in indirect wages and salaries. The 3,455 related shipper/consignees of the cargo moving via the Port’s terminals received about \$139.8 million of personal income.

Therefore, the total personal income impact and consumption impact created by Port of Cleveland cargo activity is estimated at just over \$643.6 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 cargo terminals. To estimate the per employee tax indices, total taxes received at each governmental level in Ohio 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 \$52.4 million of state, county, and local taxes. As a result of the economic activity created by the related shipper/consignees, an additional \$14.5 million of state and local taxes were generated for a total cargo tax impact of \$66.9 million. The State of Ohio receives approximately 56.4% of the tax revenues, while the local governments received 43.6% of the tax impact as illustrated in Exhibit II-6.

Exhibit II-6 Distribution of State and Local Tax Revenue

TAXES BY CATEGORY (Millions)	STATE	LOCAL	TOTAL
DIRECT, INDUCED & INDIRECT	\$29.7	\$22.7	\$52.4
RELATED USER	\$8.2	\$6.3	\$14.5
TOTAL	\$37.9	\$29.0	\$66.9

Source: Martin Associates, taxfoundation.org, 2010

Port of Cleveland's Strategic Action Plan: Technical Appendices
Appendix A: The Local and Regional Economic Impacts of Port of Cleveland

III. ECONOMIC IMPACTS OF CLEVELAND HARBOR SYSTEM

In addition to impacts created at the CCCPA's Cleveland Bulk Terminal and lakefront docks 20-30, there are numerous private terminals along the Cuyahoga River that also engage in waterborne commercial activity. The following discussion focuses on the total public and private system-wide commercial waterborne activity of the Cleveland Harbor.

**Exhibit III-1 CY08 Local and Regional Economic Impacts Generated
by the Cleveland Harbor System***

CATEGORY	TOTAL SYSTEMWIDE
JOBS	
DIRECT	3,743
INDUCED	4,315
INDIRECT	6,319
RELATED USER JOBS	3,455
TOTAL JOBS	17,832
PERSONAL INCOME (1,000)	
DIRECT	\$152,445
INDUCED	\$514,394
INDIRECT	\$273,238
RELATED USER INCOME	\$139,773
TOTAL PERSONAL INCOME	\$1,079,850
VALUE OF ECONOMIC ACTIVITY (1,000)	
BUSINESS SERVICES REVENUE	\$525,703
TENANT/DEPENDENT SHIPPER REVENUE	\$985,581
RELATED USER OUTPUT	\$301,527
TOTAL VALUE OF ECONOMIC ACTIVITY	\$1,812,812
LOCAL PURCHASES (1,000)	\$507,987
STATE & LOCAL TAXES (1,000)	
DIRECT, INDUCED AND INDIRECT	\$97,768
RELATED USER TAXES	\$14,536
TOTAL STATE AND LOCAL TAXES	\$112,304

*Total may not add due to rounding

Source: Martin Associates, 2010

Port of Cleveland's Strategic Action Plan: Technical Appendices
Appendix A: The Local and Regional Economic Impacts of Port of Cleveland

In CY2008, the Cleveland Harbor System supported 17,832 jobs in the State of Ohio. Of these jobs, 3,743 jobs are directly created by port activities, while an additional 4,315 induced jobs are generated in the Northeast Ohio area as a result of local purchases made by those directly employed due to Cleveland Harbor System cargo activity. There are 6,319 indirect jobs supported in the Northeast Ohio area as the result of \$508.0 million of local purchases. In addition, the cargo moving via Cleveland Harbor System public and private terminals support 3,455 jobs throughout the State of Ohio. The majority of these jobs are associated with the services related in support of primary steel manufacturing and steel processing.

The 3,743 direct jobs received \$152.4 million of direct wage and salary income, for average earnings of \$40,728 per direct employee. As a result of local purchases with this \$152.4 million of direct wages and salaries, an additional \$514.4 million of income and local consumption expenditures were created in the Northeast Ohio area. It is this re-spending impact that supported the 4,315 induced jobs.⁴ The indirect jobs holders received \$273.2 million in personal income. In total, \$1.1 billion of personal income was created as the result of Cleveland Harbor System operations, including the \$139.8 million received by those employed with the related users of the Port.

Local businesses received \$525.7 million of sales revenue from providing services to the cargo activity. The dependent users located within the Harbor System generated an additional \$985.6 million in economic activity. This does not include the value of the cargo moving via the terminals. The cargo activity of the Cleveland Harbor System supported an additional \$301.5 million of total economic output in the state. It is to be emphasized that only the economic activity associated with the raw materials and finished products that move via the commercial terminals is included.

As a result of the cargo activity at the Cleveland Harbor System, a total of \$112.3 million of state and local tax revenue was generated.

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 Cleveland area. Hence, the average salary would be overestimated.

Port of Cleveland's Strategic Action Plan: Technical Appendices
Appendix A: The Local and Regional Economic Impacts of Port of Cleveland

IV. ECONOMIC IMPACTS OF DEVELOPMENT FINANCE PROGRAM

Created in 1993, the Development Finance Authority fosters public-private partnerships to assist in the creation of jobs and community revitalization. The Development Finance Authority offers a portfolio of financing options tailored to fit individual needs. Since its inception, the Development Finance Authority has assisted area businesses in obtaining financing for community projects with construction activity totaling in excess of \$1.3 billion.

Exhibit IV-1 Summary of Development Finance Program Projects

Project Name	Port Authority Amount Financed	Estimated Construction Costs
Applied Industrial Technologies	18,835,000	15,251,500
Avery Dennison Corporation I	39,785,000	28,700,000
Avery Dennison Corporation II	6,000,000	4,842,000
Brush Wellman	5,155,000	10,000,000
Carnegie/89th Garage & Service Center	156,920,000	93,020,100
Carnegie/96th Research Building	32,000,000	36,157,500
City of Cleveland (Superior Avenue Streetscape)	2,965,000	2,695,000
City of Garfield Heights (City View)	8,850,000	7,743,500
Cleveland Bottle & Supply Company	1,500,000	1,625,000
Cleveland Bulk Terminal (CBT) Ore Loader	6,000,000	5,725,500
Cleveland Cavaliers	9,500,000	22,750,000
Cleveland Christian Home	5,130,000	1,250,000
Cleveland Museum of Art (Phase I)	90,000,000	116,400,000
Cleveland Museum of Art (Phase II)	75,000,000	116,200,000
Cleveland Stadium	159,345,000	247,000,000
Cleveland State University Fenn Tower Student Housing	34,385,000	30,062,900
Columbia National Group	6,020,000	3,510,500
Community Assessment Treatment Services	2,090,000	1,952,000
Council for Economic Opportunities in Greater Cleveland	4,440,000	5,644,500
Eaton Corporation	150,000,000	150,000,000
Eaton Corporation	2,000,000	Acquisition
Essroc Cement	3,795,000	2,542,500
Emerald Village	20,000,000	13,369,000
Euclid/93rd Garage and Office	48,415,000	44,858,500
Euclid Avenue Housing Corporation/CSU Parking Garage	14,500,000	13,300,000
Fairmount Montessori Association (Ruffing)	3,375,000	3,000,000
Goodyear Tire & Rubber	4,125,000	18,561,500
Heidtman Steel Products	4,250,000	9,105,000
Jergens, Inc.	5,720,000	3,700,000
Judson	31,500,000	9,972,000
Laurel School	16,000,000	15,700,000
Luigino's, Inc.	5,000,000	19,753,000
Marine Mechanical Corporation	8,500,000	1,350,000
MTD Consumer Group	20,500,000	16,000,000
MetroHealth Hospital	10,970,000	10,462,000
Myers University	5,725,000	3,060,000
Northeast Ohio Areawide Coordinating Agency	3,345,000	3,050,000
OfficeMax	20,330,000	15,620,500
Ohio Savings (OSF Properties)	16,000,000	18,103,000
Parma Community General Hospital	23,325,000	19,714,000
Preston Place	5,060,000	3,169,000
Rock and Roll Hall of Fame and Museum	38,995,000	57,700,000
Swagelok	21,000,000	18,087,000
Universal Heat Treatment	1,480,000	625,000
University Heights Public Parking Garage	40,600,000	20,572,500
Veterans Development, LLC	115,000,000	81,252,500
TOTALS	1,303,430,000	1,323,157,000

Source: CCCPA

Port of Cleveland's Strategic Action Plan: Technical Appendices
Appendix A: The Local and Regional Economic Impacts of Port of Cleveland

This financing mechanism has led to the retention and creation of jobs in the Northeast Ohio area. Martin Associates' real estate model was developed to estimate the regional economic contribution related to these projects. Data collected and used in the real estate model includes:

- Direct job estimates for each project (retained and created) supplied by CCCPA;
- Induced and indirect multipliers developed based on weighted average of jobs by type of activity and U.S. Bureau of Economic Analysis Regional Input-Output Modeling System II (RIMSII) data:
 - Industrial/Manufacturing;
 - Retail/Service;
 - Healthcare; and
 - Office/Research & Development;
- Average salaries developed from weighted averages by type of activity from U.S. Bureau of Census; and
- Average revenue per employee developed by weighted average of jobs by type of activity from the U.S. Bureau of Census.

It is important to emphasize that while the CCCPA Development Finance Program assisted in financing of these projects, the CCCPA is not solely responsible for the economic impacts created. Therefore, the local and regional economic impacts detailed in the balance of this section are considered related to CCCPA Financed Projects.

**Port of Cleveland's Strategic Action Plan: Technical Appendices
Appendix A: The Local and Regional Economic Impacts of Port of Cleveland**

**Exhibit IV-2 Economic Impact of Retained and Created Jobs Related to CCCPA Financed
Projects**

SECTOR	RETAINED AND CREATED JOBS
JOBS	
DIRECT	16,385
INDUCED	7,885
INDIRECT	19,052
TOTAL JOBS	43,322
PERSONAL INCOME (1,000)	
DIRECT	\$616,617
RESPENDING & LOCAL CONSUMPTION IMPACT	\$733,774
INDIRECT	\$762,095
TOTAL PERSONAL INCOME	\$2,112,485
VALUE OF ECONOMIC ACTIVITY (1,000)	
BUSINESS SERVICES REVENUE	\$2,785,450
LOCAL PURCHASES (1,000)	\$1,109,954
STATE & LOCAL TAXES (1,000)	
DIRECT, INDUCED AND INDIRECT	\$219,698

Source: Martin Associates, CCCPA, 2010

The CCCPA financed projects support 17,832 jobs in the Northeast Ohio. Of these jobs, it is estimated that 16,385 jobs are directly retained/created, while an additional 7,885 induced jobs are generated in the Northeast Ohio area as a result of local purchases made by those directly employed due to financed project's activity. In addition, there are 19,052 indirect jobs supported in the Northeast Ohio area as the result of \$1.1 billion of local purchases.

Port of Cleveland's Strategic Action Plan: Technical Appendices
Appendix A: The Local and Regional Economic Impacts of Port of Cleveland

The 16,385 direct jobs received \$616.6 million of direct wage and salary income, for average earnings of \$37,630 per direct employee. As a result of local purchases with this \$616.6 million of direct wages and salaries, an additional \$733.8 million of income and local consumption expenditures were created in the Northeast Ohio area. It is this re-spending impact that supported the 7,885 induced jobs.⁵ The indirect jobs holders received \$762.1 million in personal income. In total, \$2.1 billion of personal income was created as the result of CCCPA-financed project operations.

It is also estimated that the activity resulting from these financed projects creates a total of \$217.9 million of state and local tax revenue annually.

V. CONCLUSION

Commercial cargo activity at the Port of Cleveland generates significant impacts in the local and regional Northeast Ohio area. The Port of Cleveland is responsible for the creation of more than 10,800 jobs in the State of Ohio, and generates over \$66.9 million in state and local tax receipts annually. By including the private commercial terminals along the Cuyahoga River System, the total public and private commercial activity generated by the Cleveland Harbor System supports over 17,800 jobs in the State of Ohio and \$112.3 million in state and local taxes. These economic contributions for both the Port of Cleveland and the Cuyahoga River System are largely generated by the handling and transshipment of iron ore at the Cleveland Bulk Terminal ultimately destined for use in the ArcelorMittal steel mill along the Cuyahoga River.

Also, the CCCPA's Development Finance Authority, which fosters public-private partnerships to assist in the creation of jobs and community revitalization, has assisted area businesses in obtaining financing for community projects with construction activity totaling in excess of \$1.3 billion since 1993. The retained and created impacts related to this financing activity supports nearly 16,400 jobs in Northeast Ohio and \$219.7 million in state and local taxes.

⁵The 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 Cleveland area. Hence, the average salary would be overestimated.