

The Economic Impact of the New York-New Jersey Port Industry 2008



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analyses for informed decision-making

In Association with:

JACOBS

September 2009



Executive Summary

- The region's rich heritage of trade and commerce continues today at the Port of New York and New Jersey. The Port is the East Coast's leading gateway – handling a wide range of products arriving from overseas and facilitating the movement of US products to international markets.
- The Port is more than vessels and berths: it is a marine transportation system that also involves:
 - Trucks, railroads, pipelines, warehouses and distribution centers, and a wide range of services to ensure the efficient and secure movement of cargo.
 - Transit, supplies, entertainment services and visitor services to host the many cruise ships calling on our region.
- In 2008, this activity supported:
 - 164,930 direct jobs
 - 269,990 total jobs in the region
 - Over \$11.2 billion in personal income
 - Nearly \$36.1 billion in business income
 - Over \$5 billion in federal, state and local tax revenues



Introduction

- Since the Nation's formation, trade and commerce have been the cornerstone of the region's economy. Today, the New York-New Jersey Port continues to be the leading international gateway on the East Coast.
- This report describes the economic impacts associated with the maritime movement of goods and people through the Region. The report articulates the value of the maritime movements and how the regional economy is interwoven with the Port.
- The Port Industry extends beyond the physical movement of people and goods. The Industry requires cargo and passenger transportation providers, financial and insurance institutions, security firms, information services, freight forwarders, customhouse brokers, wholesalers and warehouses, and governmental agencies.
- The Port serves the regional, North America and world economies. The region strongly benefits from being a hub of commerce.



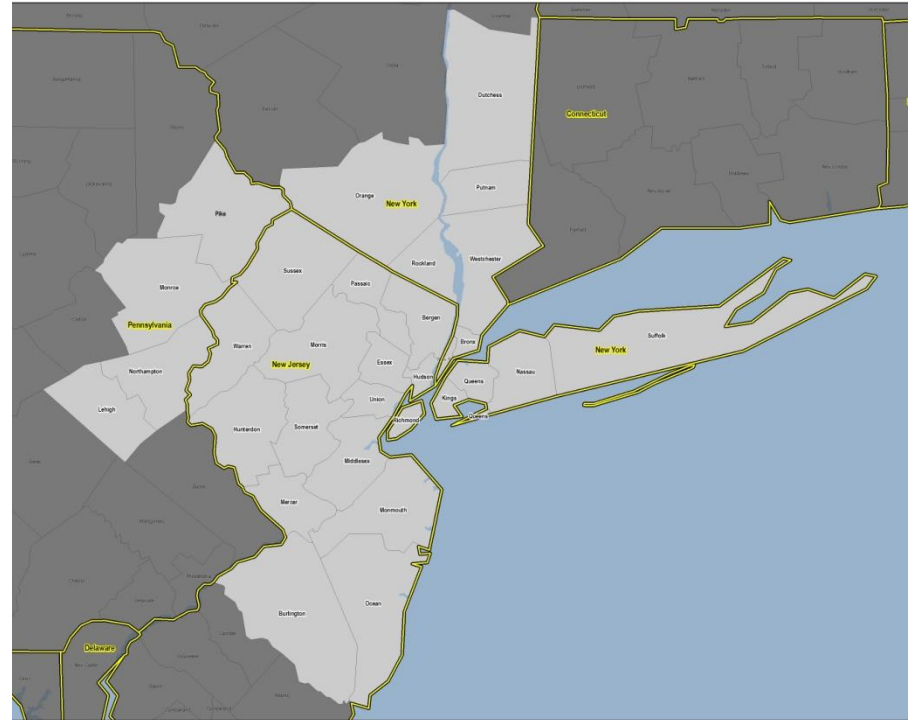
An Industry in the Midst of Change

- Since the last economic impact assessment, the Port Industry has experienced many changes. The surveys and research undertaken found:
 - Increased spending on security, environmental practices and fuel.
 - More use of data processing and information services, along with financial and insurance services. The extent of these activities directly related to cargo movement, particularly containerized cargo, was more fully articulated during the surveying for this economic impact assessment than in previous assessments.
 - More freight forwarders and customhouse brokers involved in maritime movement. For example, some international movements have shifted from air cargo to waterborne services.
 - More warehouses and distribution centers in southern New Jersey and eastern Pennsylvania that both receive and ship products through the Port of New York and New Jersey.



The Region

- The 2008 Assessment expands the regional definition to include counties in Southern New Jersey and Eastern Pennsylvania where warehouses and distribution centers are closely tied to the New York-New Jersey Port. The 31-County region includes:
 - 12 counties in New York State: Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, and Westchester
 - 15 New Jersey counties: Bergen, Burlington, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren
 - 4 PA counties: Northampton, Lehigh, Monroe and Pike Counties



The Value of Being a Major Gateway

- Cargo and passenger vessels are drawn to the Port because of the region's large and affluent population concentration.
 - With this critical mass of cargo, it is efficient to include import shipments to other North American markets to obtain economies of scale.
 - This critical mass of cargo also makes the region a premiere location for domestic distribution activities, as well as the financial, insurance and other support services needed for waterborne movements.
- The Port's extensive offering of overseas connections makes the region a logical choice for export movements, similar to selecting a major "hub" airport.
 - In turn, having a nearby maritime hub increases the attractiveness of the region for industrial and distribution activities and expands the international reach of businesses in the port's hinterland (including agricultural production).
- Historically, the region has been a center for trade and commerce.
 - With the mass of cargo and passenger movements through the Port, that tradition continues and supports more jobs off the Port than on the Port.
 - The Port made and continues to help define this region as a major international center.



Total Economic Impact of the Port Industry

- In 2008, the New York-New Jersey Port handled:
 - Nearly 5.3 million twenty foot equivalent containers (TEUs)
 - 60.9 million tons of bulk cargo
 - Nearly 315,000 tons of breakbulk cargo
 - Over 738,000 vehicles
 - Over 330 cruise vessel calls
- These cargo and passenger movements supported:
 - 164,930 direct jobs
 - 269,990 total jobs in the region
 - Over \$11.2 billion in personal income
 - Nearly \$36.1 billion in business income
 - Over \$5 billion in federal, state and local tax revenues
- The number of total jobs grew from 232,910 in 2004 to 269,990 in 2008.
 - While a portion of this growth reflects the larger area included in the region, this reflects an increase in cargo and passenger movements.
 - The impacts also reflect the increased activity in distribution activities and service industries in support of the cargo and passenger movements through the Port of New York-New Jersey.
- In comparison, the New York-New Jersey Port Industry in 1993, as measured for a slightly smaller region, supported 166,500 jobs and generated \$6.2 billion in personal income.



The Value of the Port to the Region

Maritime Movement or Industry	Direct Jobs	Total Jobs	Personal Income	Business Income	Federal Taxes	State Taxes	Local Taxes	Total Taxes
Containerized Cargo	34,926	53,663	\$ 2,287.7	\$ 6,541.3	\$ 700.9	\$ 142.6	\$ 164.2	\$ 1,007.7
Bulk Cargo	3,954	6,632	\$ 296.2	\$ 1,284.0	\$ 89.1	\$ 20.3	\$ 24.1	\$ 133.5
Breakbulk Cargo	157	249	\$ 10.8	\$ 32.5	\$ 3.3	\$ 0.7	\$ 0.8	\$ 4.8
Roll On/Roll Off Cargo	1,274	2,027	\$ 88.4	\$ 265.0	\$ 27.2	\$ 5.7	\$ 6.7	\$ 39.6
NY and NJ Cruise Operations	3,760	5,366	\$ 185.6	\$ 692.4	\$ 57.9	\$ 16.4	\$ 17.3	\$ 91.6
Warehousing and Distribution Centers	97,160	154,881	\$ 5,877.6	\$ 18,801.4	\$ 1,856.6	\$ 386.5	\$ 453.5	\$ 2,696.5
Headquarters and Water Transportation	6,500	17,521	\$ 978.7	\$ 4,237.0	\$ 293.2	\$ 67.9	\$ 81.2	\$ 442.3
Freight Forwarders and Customhouse Brokers	10,000	17,316	\$ 843.8	\$ 2,312.1	\$ 239.7	\$ 46.5	\$ 51.2	\$ 337.5
Banking	2,500	4,474	\$ 237.3	\$ 720.2	\$ 67.3	\$ 13.6	\$ 15.3	\$ 96.2
Insurance	3,100	5,312	\$ 294.9	\$ 774.3	\$ 89.5	\$ 18.9	\$ 22.0	\$ 130.4
Government	1,600	2,548	\$ 125.8	\$ 396.4	\$ 34.2	\$ 6.0	\$ 6.2	\$ 46.5
Total	164,931	269,989	\$ 11,226.6	\$ 36,056.6	\$ 3,458.8	\$ 725.2	\$ 842.6	\$ 5,026.6

All dollar amounts in millions of 2009 dollars.

Total jobs includes the full multiplier effect – direct, indirect and induced jobs in the region.

Business income is defined as gross business revenues generated in each of the geographically defined regions.

The economic impact assessment was conducted using the Rutgers Economic Advisory Service (RECON) Economic Impact Model, customized for the 31-County Region.

The Port Contributes Significant Economic Activity in New York, New Jersey and New York City

- The Port Industry was also assessed separately for the States of New York and New Jersey, along with New York City.
 - While most of the physical activity occurs in New Jersey, New York City has active maritime facilities, including two passenger ship terminals, the New York Container Terminal and the Red Hook Container Terminal.
 - The people who work at marine terminals live throughout the two States and in the City.
 - The service industries that are an integral part of maritime movement are also located throughout the area.
- The New York-New Jersey Port supports:
 - ***In New Jersey:*** Nearly 203,300 jobs, over \$8.9 billion in personal income, over \$28.9 billion in business activity, and over \$3.9 billion in tax revenues.
 - ***In New York:*** Over 44,800 jobs, nearly \$2.3 billion in personal income, nearly \$7.5 billion in business activity, and nearly \$1.4 billion in tax revenues.
 - ***In New York City:*** Over 31,800 jobs, nearly \$2.1 billion in personal income, nearly \$6.8 billion in business activity and nearly \$1.3 billion in tax revenues.



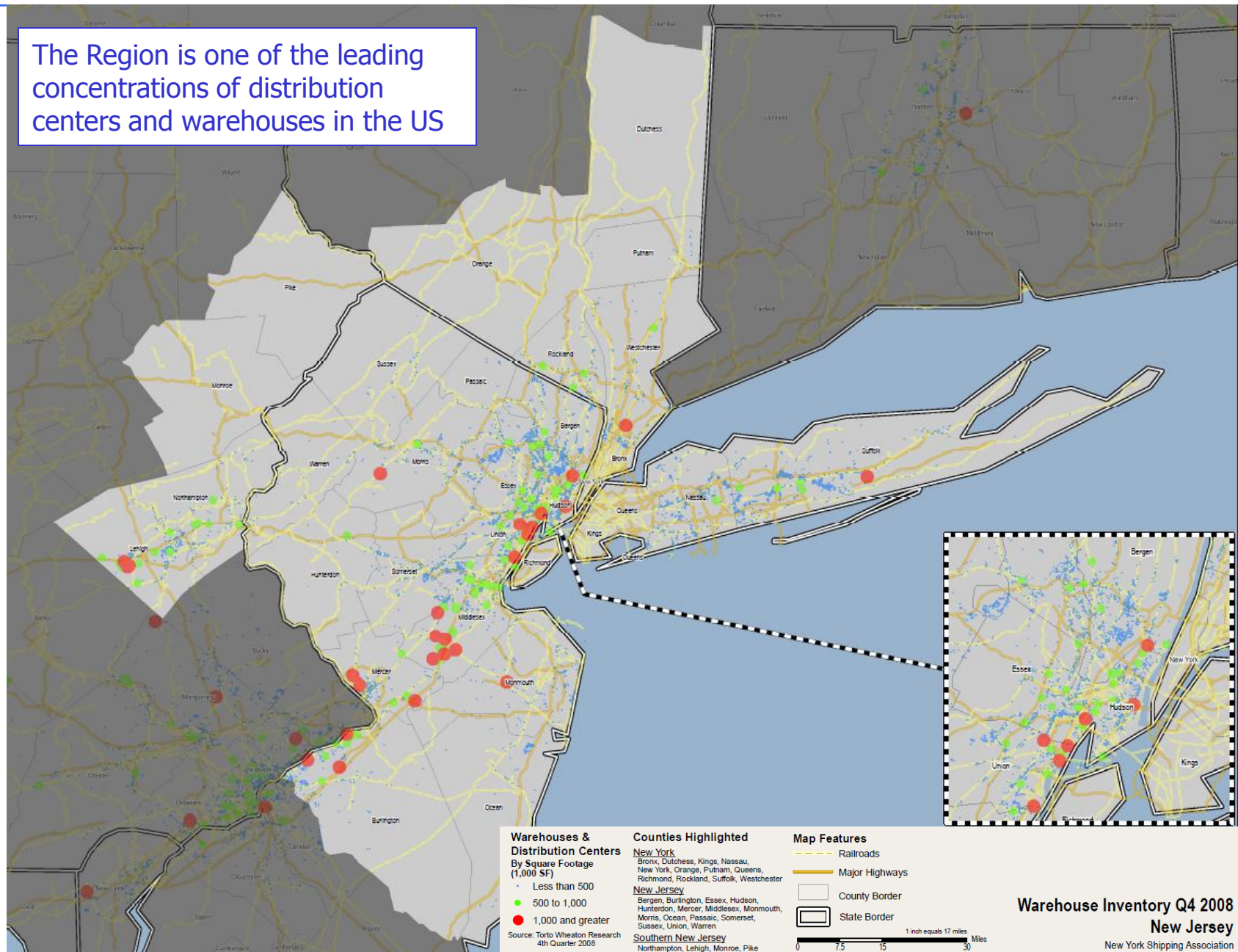
Warehouses and Distribution Centers

- The 31-county region had over 905 million square feet of warehousing and distribution space at the end of 2008.
 - Based on extensive field work and discussions, nearly 323 million square feet or 36 percent of this space is tied to international commerce and maritime movements.
 - Even with the significant productivity improvements since 2004, 97,160 people are estimated to work in these distribution centers and warehouses.
 - The region has one of the largest concentrations of such facilities in the US and is the leading location on the East Coast for the larger buildings that support multi-state and North American distribution.
 - Buildings with 500,000 square feet or more are shown as green dots on page 10.
 - Warehouses and distribution centers containing 1 million square feet or more are shown as red dots.



Source: CB Richard Ellis Torto Wheaton, 4th Quarter of 2008 and excludes other forms of industrial space, such as manufacturing or flex space.

The Region is one of the leading concentrations of distribution centers and warehouses in the US



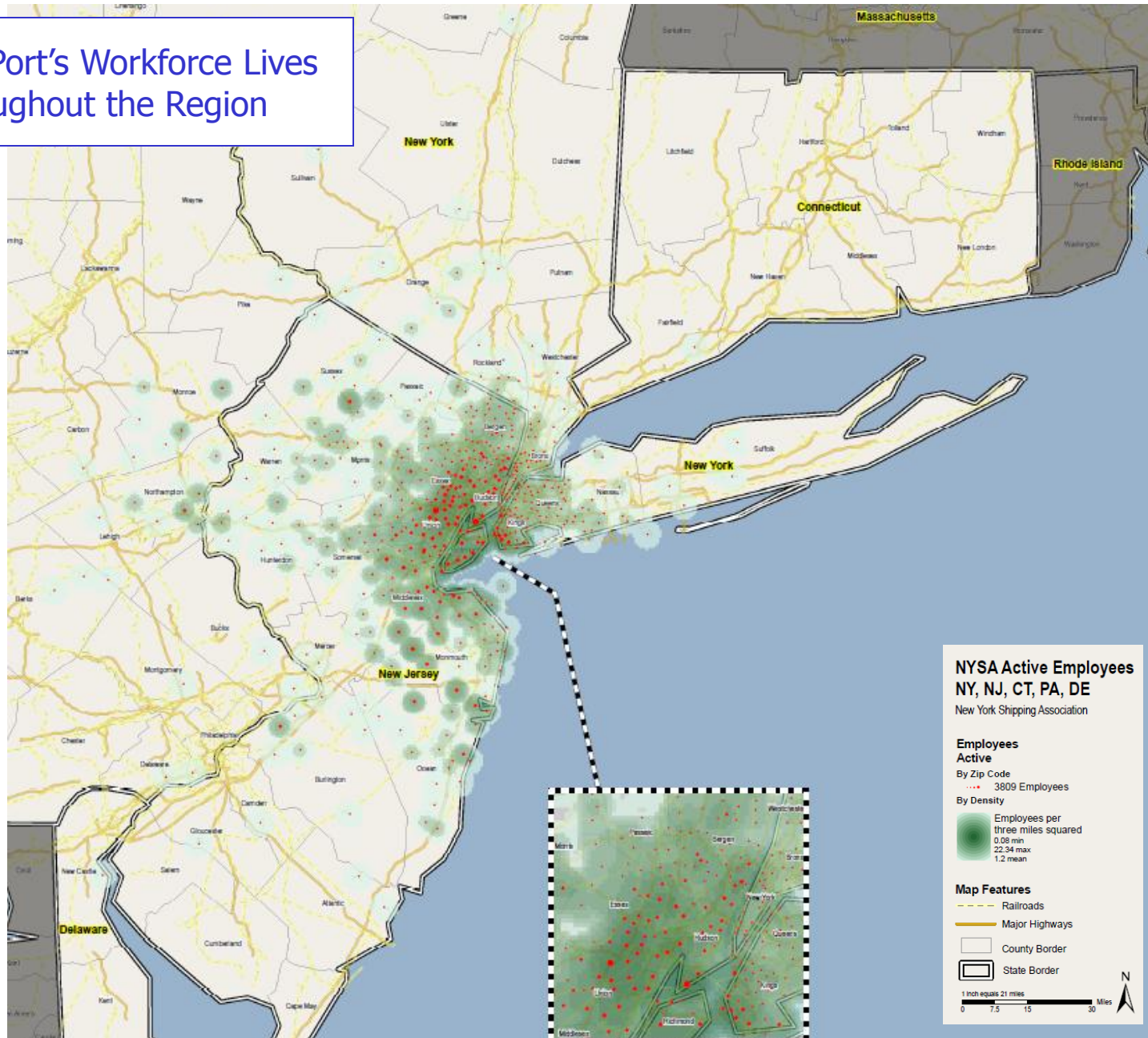
The Port Supports a Wide Range of Regional Jobs

- As shown on page 12, the workers at the maritime terminals live throughout the region. The impact of their jobs and income ripple through their local communities and the region.
- The Port of New York and New Jersey supports a wide range of occupations as its economic impact flows through the economy.
 - Many of the occupations relate to the physical and service professionals needed to move maritime cargo and passengers.
 - Additional occupations support the daily lives of the people working in the Port Industry and the businesses that support it.

Occupations	
Executive, administrative, and managerial occupations	26,809
Professional specialty occupations	9,845
Technicians and related support occupations	3,690
Marketing and sales occupations	21,189
Administrative support occupations, including clerical	67,526
Service occupations	24,456
Agriculture, forestry, fishing, and related occupations	1,441
Precision production, craft, and repair occupations	27,058
Production occupations, precision	2,437
Plant and system occupations	164
Transportation workers, operators, fabricators, and laborers	85,374
Total	269,989



The Port's Workforce Lives Throughout the Region



Definitions and Terminology



Cargo Movement Terms

- Containerized cargo handling refers to the handling of cargo loaded in maritime containers. Each container, which can handle a nearly complete range of commodities, is handled as a single unit. The most commonly used types of containers are either 20 or 40 feet in length. A common measure used in the maritime industry refers to a “twenty-foot equivalent unit” or TEU. A TEU equals one 20 foot container. A 40 foot container would equate to two TEUs.
- Breakbulk cargo handling is the traditional means of handling general cargo. It describes the handling of a broad variety of commodities as individual pieces or as palletized cargo. Breakbulk handling techniques are used to move such commodities as forest products, paper, bananas, fresh fruit, steel and cocoa beans.
- Bulk cargo handling refers to the handling, in a continuous operation, of dry and liquid uniform commodities, such as petroleum, petrochemicals, grain and coal. The cargo is not divided into individual units.
- Auto and vehicle transport describes the waterborne movement of motorized, wheeled units. Typically, vehicles and autos are “rolled on and rolled off” (RO/RO) vessels with multiple decks by terminal workers.

VESSEL ACTIVITIES	TERMINAL ACTIVITIES	TRANSACTION ACTIVITIES	INLAND MOVEMENT ACTIVITIES
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Pilotage, Tugs,
Provisions, Fuel, Crew
Shore Leave, etc.

Cranes, Stevedoring,
Yard Handling, Cargo
Manipulation,
Inspections, etc.

Banking, Insurance,
Data Processing, Freight
Forwarding,
Customhouse Brokers,
etc.

Trucking, Rail, Barge
and/or Pipeline

Cargo and Passenger Handling Terms

- **Waterside Services:**
 - Tugs
 - Pilots – navigation experts who board the vessel to facilitate travel and calling within the harbor and channels.
 - Line Handling – the port fee that covers the labor costs associated with tying up or releasing the mooring lines from a vessel.
 - Launch – the fee associated with use of launches to transport pilots, other personnel or supplies to or from a vessel.
 - Radio/Radar – the fees associated with radio and radar use and equipment.
 - Surveyors – the fees associated with insurance reviews of the vessel.
 - Dockage – the fees assessed a vessel to offset the use of the docking facility.
 - Lighterage – the expenditures associated with offloading or loading cargo from a smaller vessel to the vessel.
- **Cargo Packing**
 - Export Packing
 - Container Stuffing/Stripping
 - Cargo Manipulation/Lashing – activities that include strapping, blocking and arranging the cargo to minimize shifting and damage during transit.
- **Government Services**
 - Customs and Inspection (including agriculture)
 - Entrance/Clearance/Immigration
 - Quarantine
 - Security
- **Loading and Discharging**
 - Stevedoring
 - Clerking and Checking
 - Watching/Security
 - Cleaning/Fitting
 - Equipment Management, Maintenance and Leasing
- **Storage at the Maritime Terminals**
 - Wharfage -- the fee against the cargo that is discharged (or crosses the wharf) from the vessel while at dock. Wharfage fees may be flat rates applied on a per ton basis or a commodity specific rate such as \$45 per auto driven off a roll-on, roll-off (RO/RO) vessel.
 - Yard Handling
 - Demurrage – the fee associated with storing cargo at the terminal beyond the time specified in the transportation arrangements.
 - Warehousing
 - Auto and Truck Storage
 - Bulk Storage
 - Refrigerated Storage



Cargo Inland Movement

- Long Distance Truck – the fee charged by trucking firms for the inland movement of the cargo beyond the port region. Usually, long distance trucking rates are developed and drivers compensated on a mileage basis.
- Short Distance Truck – the fee charged by trucking firms for the inland movement of cargo to a destination or from an origin within the port region (such as a warehouse or manufacturing facility). Usually, shorter distance trucking rates are quoted and drivers compensated on a flat-rate basis.
- Barge – Barges are a means used for conveying cargo between vessels and ports/terminals other than the one where the vessel is docked.
- Rail – Inland rail movements are defined as including the truck drayage fee associated with moving the cargo from the terminal to the rail yard, along with the costs incurred by the railroad(s) for moving the shipment. Rail costs include expenditures associated with rail terminal operations, switching and line haul movements.
- Pipeline – Pipeline movements are generally associated with the movement of liquid bulk commodities.



Cruise Industry Definitions

- Cruise passenger movements refers to vessels that carry passengers on recreational cruises of various durations.
- Cruise passengers may also spend time in the metropolitan area before or after their voyages, generating additional economic impacts through their visitor expenditures. The cruise operations, based on surveying, reflect the various characteristics of the three terminals in New York and New Jersey and the cruise lines that call on this region.
- Inland transportation involving cruise passengers includes air, private car, bus, transit, limousines and taxies, and walking.

VESSEL ACTIVITIES	TERMINAL ACTIVITIES	PRE- AND POST- CRUISE VISITOR ACTIVITIES	INLAND MOVEMENT ACTIVITIES
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Pilotage, Tugs,
Provisions, Fuel, Crew
Shore Leave, etc.

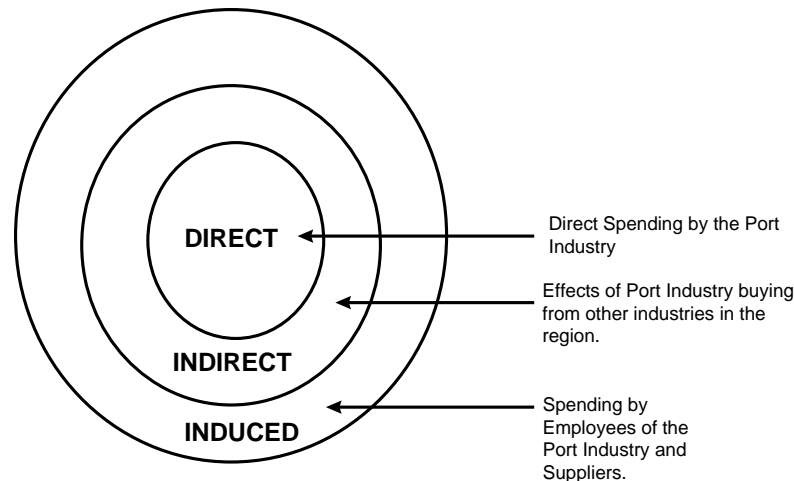
Stevedoring, Passenger
Services, Inspections,
Immigration, etc.

Hotels, Restaurants,
Local Attractions and
other visitor activities in
the port area.

Private car, taxi/limo,
bus/transit, airline,
walking, etc.

Economic Impact Definitions – What is a Multiplier?

- The economic impact assessment estimates the total impacts, which are defined to include:
 - **Direct** – the spending by the Port Industry. Direct effects are the focal point of an impact analysis.
 - **Indirect** – the purchases of goods and services by suppliers. By definition, the first round of indirect impacts includes the purchase of supplies and services that are required to produce the direct effects. Subsequent purchases of supplies and services generate other rounds of indirect impacts. Such purchases continue to ripple through the regional economy.
 - **Induced** – the purchases (on such items as food, clothing, personal services, vehicles, etc.) that arise, in turn, from the increase in the aggregate labor income of households.
- The total economic impact of the Port Industry consists of the direct, indirect and induced effects.



Economic Impact Measurements

- Employment effects – full-time equivalent jobs generated, including:
 - Direct employment: onsite full-time equivalent jobs or jobs in the Port Industry
 - Total employment: The total number of full-time equivalent jobs (direct, indirect and induced) generated in each of the geographically defined regions.
- Total Business income/revenue effects – generally defined as gross business revenues generated in each of the geographically defined regions.
- Total earnings/personal income effects – defined as wages, salaries, and proprietors' income only. It does not include non-wage compensation (e.g. pensions, insurance, and health benefits); transfer payments (e.g. welfare or social security benefits); or unearned income (e.g. dividends, interest, or rent). Wages are paid to workers at their place of work and spent at the workers' place of residence, which may be outside the region.
- Total local tax effects – defined as revenues collected by sub-state governments. These are collected mainly from property taxes on new worker households and businesses, but also from income, sales, and other major local taxes in some areas.
- Total State tax effects – revenues collected by state governments from personal and corporate income, state property, excise, sales, and other state taxes generated by changes in output or wages or by purchases by visitors to the region.
- Total Federal tax effects – defined as revenues collected by the federal government from corporate income, personal income, social security, and excise taxes.
- Occupational implications – the Rutgers RECON model identifies the employment implications in terms of specific occupations.



About the Approach

- Working closely with Port Partners, A. Strauss-Wieder, Inc.:
 - Conducted surveys of terminal operations, carrier operations, the service industries (including freight forwarders, customhouse brokers, security firms, banking firms, etc.).
 - Developed square footage estimates and the employment associated with Port-related warehousing and distribution centers.
 - Had industry experts review and validate the resulting expenditure patterns associated with the various cargo and passenger movements.
 - Used a customized version of the US Maritime Administration port economic impact model produced by Rutgers RECON to assess the cargo and passenger flows.
 - Used a customized version of the Rutgers RECON highly detailed economic impact model to assess the impacts of Port-related warehousing/distribution center, headquarter, freight forwarding and customhouse brokers, banking, insurance and governmental activities.



About the Economic Impact Model

- The RECON input-output model, provided and maintained by Rutgers University, is constantly refined and updated (both in terms of the underlying data and programming) and has been extensively reviewed and evaluated in academic forums. Versions of the model have been used in economic impact analyses for more than 30 years.
- The basic framework for input-output (I-O) analysis originated nearly 250 years ago when François Quesenay published *Tableau Economique* in 1758. Quesenay's "tableau" graphically and numerically portrayed the relationships between sales and purchases of the various industries of an economy. More than a century later, his description was adapted by Leon Walras, who advanced input-output (I-O) modeling by providing a concise theoretical formulation of an economic system (including consumer purchases and the economic representation of "technology").
- Wassily Leontief greatly advanced Walras's theoretical formulation and was awarded the Nobel Prize in 1973. Leontief first used his approach in 1936 when he developed a model of the 1919 and 1929 U.S. economies to estimate the effects of the end of World War I on national employment. Recognition of his work awaited wider acceptance and use of the approach. This meant development of a standardized procedure for compiling the requisite data (today's national economic census of industries) and enhanced capability for calculations (i.e., the computer). The federal government immediately recognized the importance of Leontief's development and has been publishing input-output tables of the U.S. economy since 1939.



Background on Input-Output Analysis

- I-O modeling focuses on the interrelationships among sectors in an economy. Within the I-O model, the economy of an area is mapped out in table form, with each industry listed across the top as a consuming sector (or market) and down the side as a producing sector.
- Input-output modeling is among the most accepted means for assessing economic impacts, as previously indicated. The approach provides a concise and accurate means for articulating the interrelationships among industry sectors. The models can be quite detailed. As noted previously, the current U.S. and RECON models currently has more than 500 industrial sectors. This level of detail provides a consistent and systematic approach, as well as a more accurately means for assessing the multiplier effects of changes in economic activity.
- I-O Analysis makes several key assumptions. First, the information used to create an input-output model is for *a given point in time*. The information in the model reflects a “snapshot” of the technical requirements and industry relationships at a given point in time. Because of this, input-output models are regularly updated.
- Regional input-output models, such as the one used by in this economic impact assessment, need to account for the percentage of the demand for an industry’s output or the requirements for a transportation project that can be readily supplied by firms within the specified region. Firms within the specified region may not be able to supply all the products needed. Therefore, goods and services may need to be purchased from outside of the specified region.
- The RECON Model uses *regional purchase coefficients* to account for these expenditure flows. A regional purchase coefficient (RPC) is defined as the proportion of the regional demand that can be expected to be supplied from producers within a given region.