

# The Economic Impact of the New York-New Jersey Port/Maritime Industry

# 2010



October 2011

Prepared by:

**A. Strauss-Wieder, Inc.**

*analyses for informed decision-making*

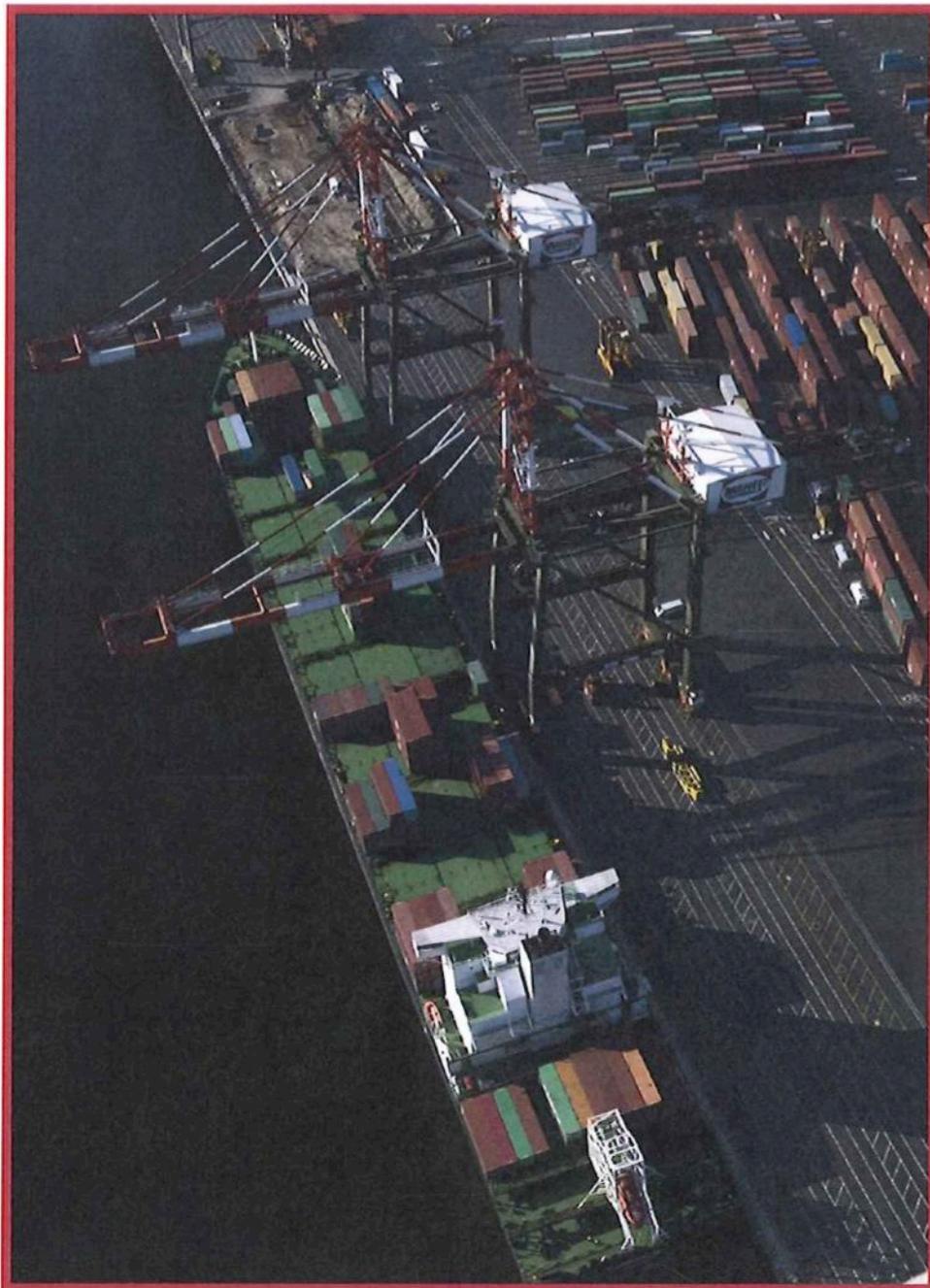
  
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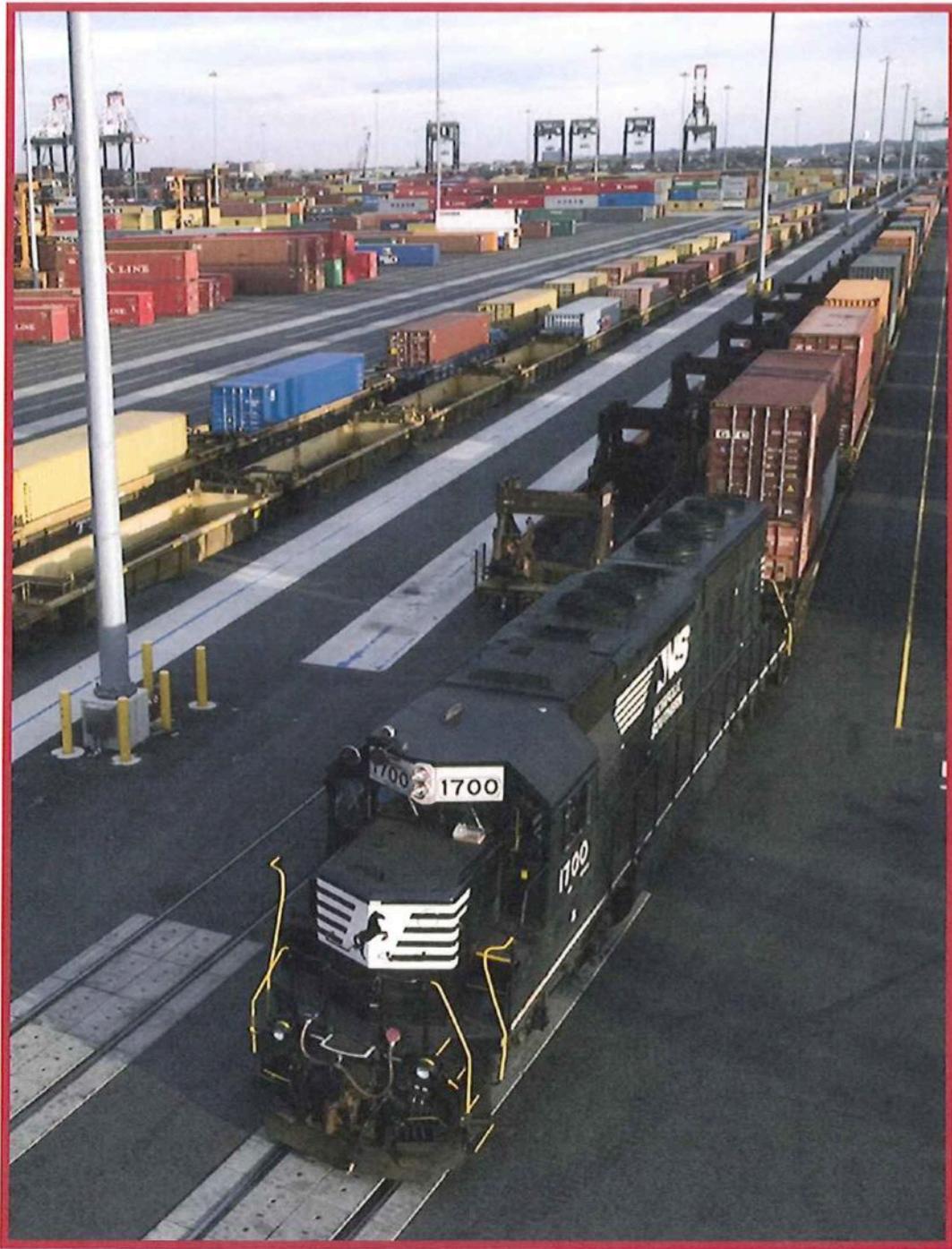


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# Executive Summary

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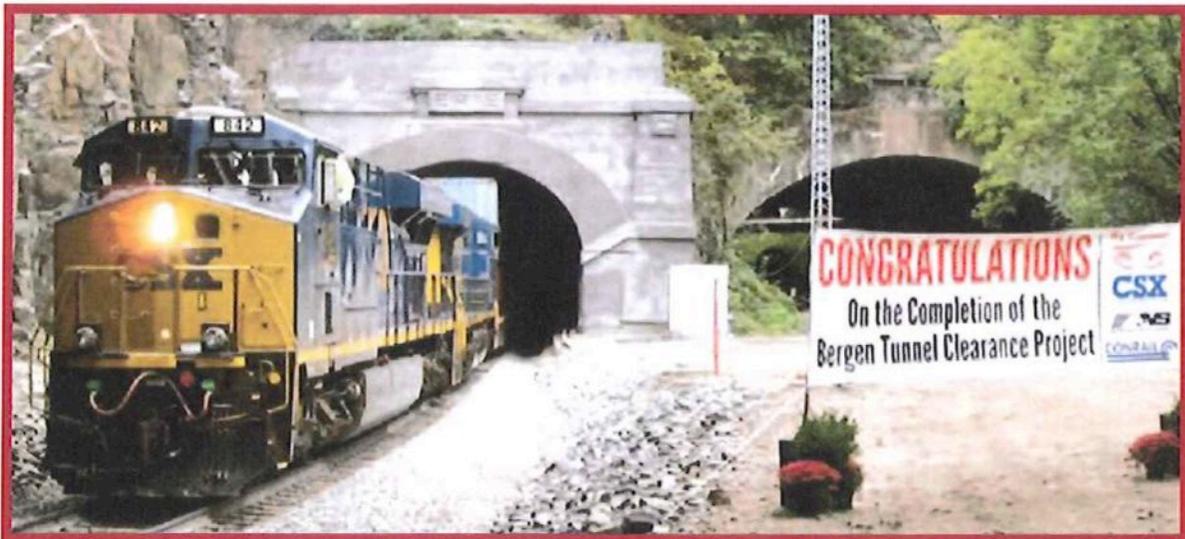
- Even with dynamic economic conditions, the Port moved to solidify and expand its position as a global hub of trade and commerce.
- In 2010, the New York-New Jersey Port Industry supported:
  - 170,770 direct jobs
  - 279,200 total jobs in the NY-NJ region
  - Nearly \$11.6 billion in personal income
  - Over \$37.1 billion in business income
  - Almost \$5.2 billion in federal, state and local tax revenues
    - Local and State Tax Revenue: \$1.6 billion
    - Federal Tax Revenue: \$3.6 billion
- Growth came from increases in containerized cargo movements and improving distribution space activity. Planned security improvements, in some cases involving increased staffing, were fully implemented.



## Invested Now and for the Future

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- Public agencies and private industry invested substantially in the Port since 2006, resulting in state-of-the-art facilities, deeper channels and multimodal access to North America.
- In the NY-NJ area, the Port-related construction and investment activity between 2006 and 2011 supported over the construction period:
  - 15,800 direct jobs or about **2,600 jobs annually**
  - 27,500 total jobs through the region or about **4,600 jobs annually**
  - Nearly \$1.3 billion in personal income
  - Over \$2.9 billion in business income
  - Almost \$570 million in federal, state and local tax revenues
    - Local and State Tax Revenue: \$190 million
    - Federal Tax Revenue: \$380 million



## Investing to Move Forward

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- In a time when public and private investments can fuel economic recovery, the NY-NJ Port anticipates an aggressive capital program.
- The impacts of expected 2012-2017 investments are anticipated to produce the following jobs and economic benefit over the construction period:
  - 20,150 direct jobs or about **3,400 jobs annually**
  - 41,300 total jobs throughout the region or about **6,900 jobs annually**
  - Over \$2.0 billion in personal income
  - Over \$4.4 billion in business income
  - Almost \$850 million in federal, state and local tax revenues
    - Local and State Tax Revenue: \$250 million
    - Federal Tax Revenue: \$600 million
- These numbers assume that the Bayonne Bridge work is completed by 2017.
- These impacts could increase when rail freight and additional roadway improvements are finalized.



## Introduction

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- The Port/Maritime Industry has been a core business of the Region since colonial times and continues to ensure that the area is an international center of commerce
- The New York-New Jersey Port/Maritime Industry is more than the vessels, terminals, trucks, railroads and warehouses that constitute our marine transportation system.
  - The Region is the “go to” place for private sector capital and investment for the maritime industry. Banks, investment groups, insurance companies, law firms and other service businesses fund vessel construction, terminal developments and facilitate the transactions critical to international commerce.
  - Four of the top five and eight of the top ten global container fleet operators have their North American headquarters in the Region.
  - Ship Owners, such as Navios Maritime Holdings and Scorpio Tankers, have chosen to locate in the Region since 2008.
- This report summarizes the economic impacts associated with:
  - The maritime movement of goods and people through the Region.
  - The substantial capital investments that have and continue to be made in the Region’s Port infrastructure.

## A Dynamic Industry in Dynamic Times

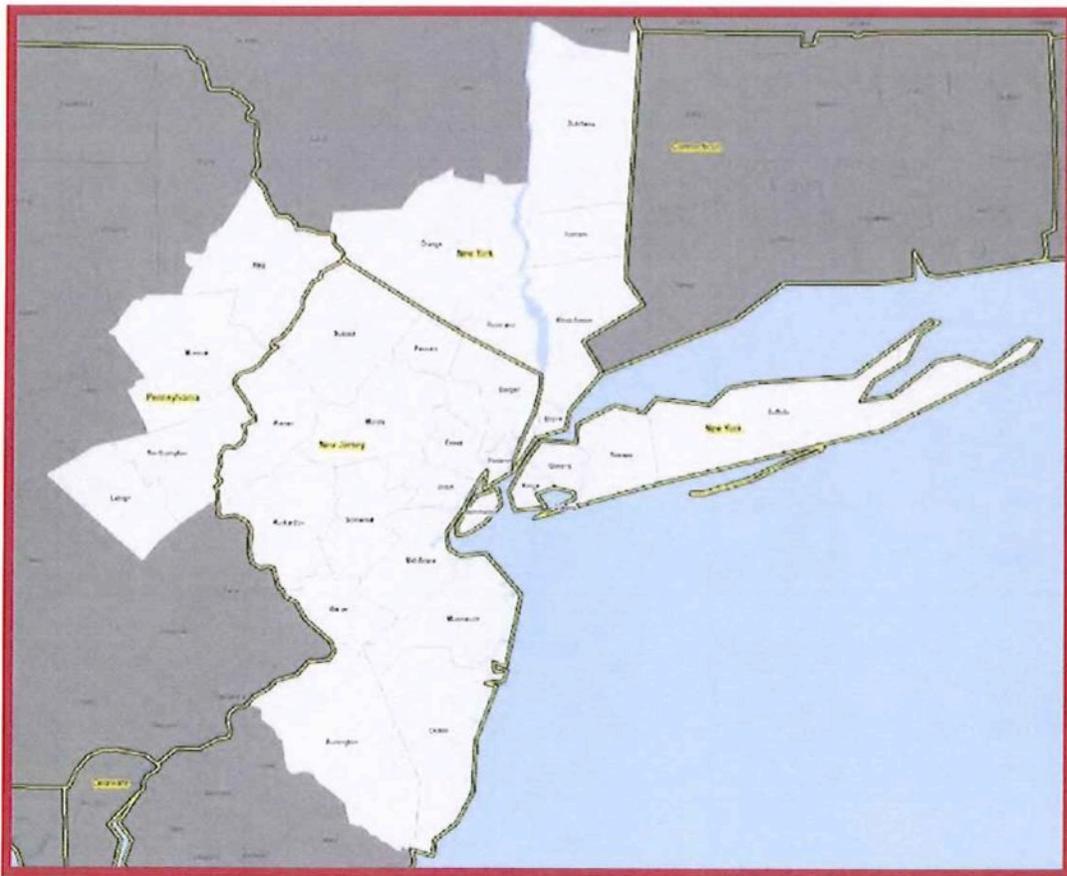
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- The economic climate has been turbulent since the last economic impact study performed in 2008. The “Great Recession” descended on the Nation. Countries throughout the world faced fiscal crisis. Fuel prices rose again.
- Yet, during these dynamic times, the New York-New Jersey Port Industry continued to invest and ensure the infrastructure needed for efficient global supply chains.
  - Deepening of the channels, significant terminal enhancements and expansions, state-of-the-art inland connections (such as Corbin Street Yard and the Liberty Corridor), and new terminals in the Jersey City/Bayonne area resulted.
  - Plans to address air draft issues and remaining choke points advanced.
- In 2010, container volumes exceeded 2008 levels. The warehousing and distribution industry, impacted by both an over-abundance of space and reduced consumer spending, saw activity and interest return. Both of these trends appear to be accelerating in 2011.



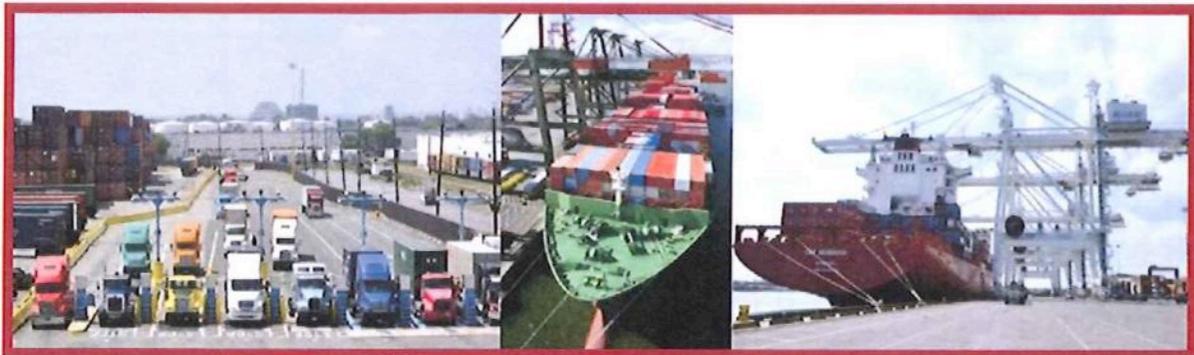
## The Region

- The 2010 study continues using the regional definition that includes 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



# Total Economic Impact of the Port/Maritime Industry

- In 2010, 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:
  - 170,770 direct jobs
  - 279,200 total jobs in the NY-NJ region
  - Nearly \$11.6 billion in personal income
  - Over \$37.1 billion in business income
  - Almost \$5.2 billion in federal, state and local tax revenues
- The number of total jobs grew from 269,990 in 2008 to 279,200 in 2010.
  - Growth came from increases in containerized cargo movements and improving distribution space activity. Planned security improvements, in some cases involving increased staffing, were fully implemented.
- 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/Maritime Industry 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	35,275	54,200	2,310.6	6,606.8	707.9	144.0	165.9	1,017.8
Bulk Cargo	3,519	5,902	263.6	1,142.7	79.3	18.1	21.5	118.9
Breakbulk Cargo	33	52	2.3	6.8	0.7	0.1	0.2	1.0
Roll On/Roll Off Cargo	1,199	1,905	93.1	249.1	25.6	5.4	6.3	37.2
NY and NJ Cruise Operations	3,694	5,267	182.0	676.7	56.8	16.1	16.9	89.8
Warehousing and Distribution Centers	103,100	164,350	6,236.9	19,950.8	1,970.1	410.1	481.2	2,661.4
Corporate Headquarters and Office Operations	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	2,250	4,027	213.6	648.1	60.6	12.3	13.8	86.6
Insurance and Legal	3,100	5,313	294.9	774.3	87.5	18.9	22.0	130.4
Government	2,100	3,344	165.1	520.3	45.0	7.9	8.1	61.0
<b>Total</b>	<b>170,769</b>	<b>279,198</b>	<b>\$ 11,574.4</b>	<b>\$ 37,124.8</b>	<b>\$ 3,568.2</b>	<b>\$ 747.3</b>	<b>\$ 888.3</b>	<b>\$ 5,103.8</b>

All dollar amounts in millions of 2011 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/Maritime Industry 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.
  - New York City is a global hub of maritime-related banking, insurance and investment – the critical services needed to drive the Port Industry throughout the World.
  - As a result of the twin historic strengths of the region in the waterborne movement of people and goods and financing the maritime industry, top maritime businesses locate their North American headquarters in the New York-New Jersey Region.
- The New York-New Jersey Port supports:
  - **In New Jersey:** Over 206,900 jobs, nearly \$9.1 billion in personal income, over \$29.3 billion in business activity, and nearly \$4 billion in tax revenues.
  - **In New York:** Nearly 46,400 jobs, over \$2.3 billion in personal income, nearly \$7.6 billion in business activity, and over \$1.4 billion in tax revenues.
  - **In New York City:** Nearly 33,000 jobs, over \$2.1 billion in personal income, \$6.9 billion in business activity and over \$1.3 billion in tax revenues.



## Public and Private Ship Owning Markets, part of the Region's Port/Maritime Industry, Generate Significant Activity

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- 71 listed shipping companies are trading on the New York public stock exchanges.
  - 13 are headquartered in New York.
- The 2010 trading volume of shipping company stocks totaled \$492 billion.
- 30 Ship owning firms are located in the New York-New Jersey region.
  - The public companies alone reported \$8.8 billion in revenue in 2010.
- Marine insurance coverage generated over \$2 billion in premium income in 2010.
- Maritime investment banking generated over \$1 billion in revenue in 2010.
- This concentration of enterprises makes the New York-New Jersey Region the “go to” place for private sector capital and investment for the port/maritime industry.

*Source: NYMar industry information.*



## The Port/Maritime Industry Supports a Wide Range of Regional Jobs

- 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 workers throughout the Region needed to move maritime cargo and passengers physically as well as through information and transactional flows.
  - 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	27,666
Professional specialty occupations	10,207
Technicians and related support occupations	3,808
Marketing and sales occupations	21,754
Administrative support occupations, including clerical	69,915
Service occupations	25,161
Agriculture, forestry, fishing, and related occupations	1,505
Precision production, craft, and repair occupations	28,019
Production occupations, precision	2,509
Plant and system occupations	163
Transportation workers, operators, fabricators, and laborers	88,490
<b>Total</b>	<b>279,198</b>

## Port-Related Construction and Investment Create Additional Economic Impact

- These impacts occur only when the construction and investment activity are taking place.
  - These impacts are separate from the ongoing economic value generated by the Port, yet add an additional stream of activity to the region.
  - When the activities are done, the workers move on to other areas and other projects.



- Both public agencies and private businesses substantially invested in the Port between 2006 and 2011, particularly in terminal improvements, inland connections and channel deepening.
- In the NY-NJ area, the construction and investment activity between 2006 and 2011 supported over the construction period:
  - 15,800 direct jobs or about **2,600 jobs annually**
  - 27,500 total jobs through the region during construction or about **4,600 jobs annually**
  - Nearly \$1.3 billion in personal income
  - Over \$2.9 billion in business income
  - Almost \$570 million in federal, state and local tax revenues



# The Port Industry Made Substantial Investments

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Capital Investments in the Port Completed Between 2006-2011

Project Type	Expenditure in Millions
Terminal Improvements (including berths, buildings and equipment)	\$ 1,097.4
Rail Improvements	\$ 539.8
Channel Deepening	\$ 456.4
Utilities	\$ 190.8
Property Acquisition	\$ 123.2
Roadway and Bridge Improvements	\$ 60.8
Information Technology Purchases	\$ 11.0
Security Equipment	\$ 4.3
Property demolition	\$ 3.6
Railroad locomotives	\$ 3.0
Navigation aid improvements	\$ 0.3
<b>TOTAL</b>	<b>\$ 2,490.8</b>

## And the Investments Continue

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- Additional and substantial investments are anticipated to be made in the Port.
  - Major investments are anticipated to address air draft issues and develop new terminal capacity.
  - Inland connections continue to be improved, and channels continue to be made ready for the new larger vessels.
- In the NY-NJ area, the construction and investment activity between 2012 and 2017 will produce over the construction period:
  - 20,150 direct jobs or about **3,400 jobs annually**
  - 41,300 total jobs through the region during construction or about **6,900 jobs annually**
  - Over \$2.0 billion in personal income
  - Over \$4.4 billion in business income
  - Almost \$850 million in federal, state and local tax revenues
- These numbers assume that the Bayonne Bridge work is completed by 2017. These numbers could increase when rail freight and additional roadway improvements are finalized

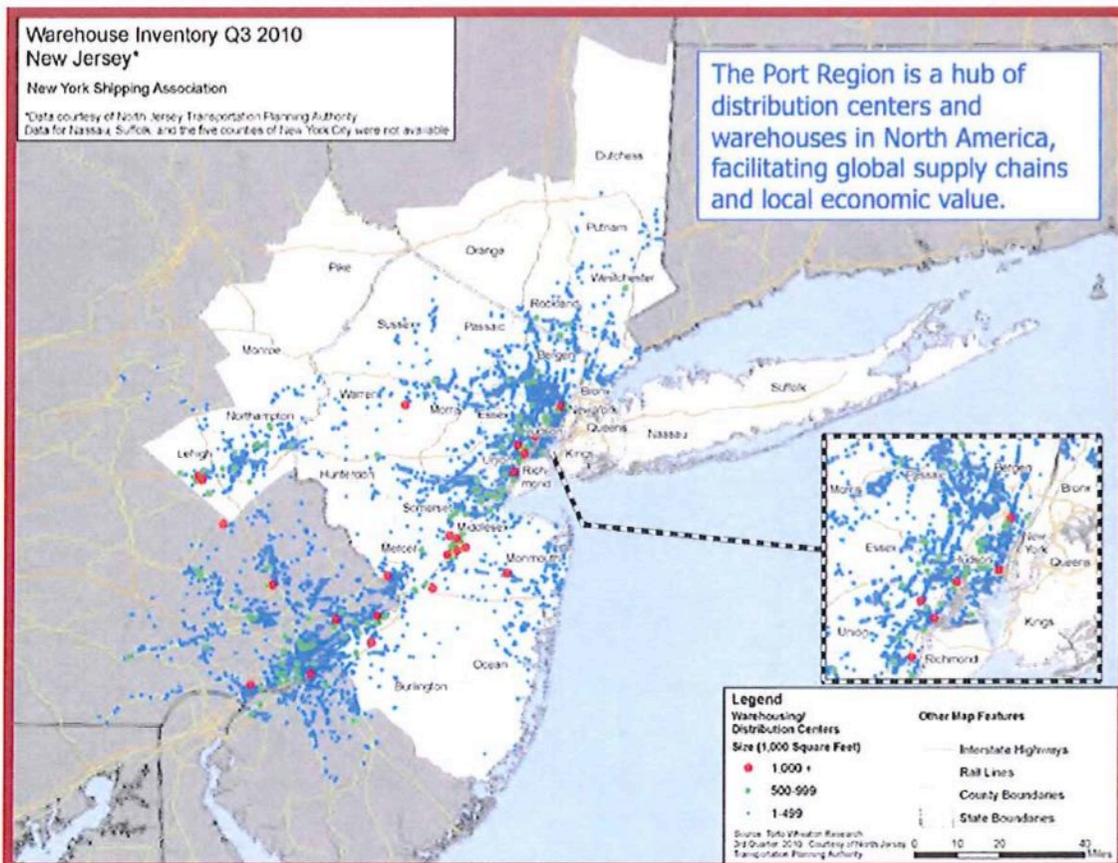


# Significant Investments Continue to be Made

## Projected Capital Investments in the Port Between 2012-2017

Project Type	Expenditure in Millions
Roadway and Bridge Improvements	\$ 1,492.5
Terminal Improvements (including berths, buildings and equipment)	\$ 979.9
Rail Improvements	\$ 696.8
Channel Deepening	\$ 257.5
Utilities	\$ 60.2
Security Equipment	\$ 17.0
Information Technology Purchases	\$ 7.7
Navigation aid improvements	\$ 0.1
<b>TOTAL</b>	<b>\$ 3,511.6</b>

*Bayonne Bridge Included*



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# Definitions and Terminology



## Cargo Movement Terms

- **Containerized cargo handling** refers to the handling of cargo loaded in maritime containers. Each container, which can accommodate 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 these vehicles 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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Plotage, Tugs,  
Provisions, Fuel, Crew  
Shore Leave, etc.

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

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

Trucking, Rail, Barge  
and/or Pipeline

# Cargo and Passenger Handling Terms

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## ■ 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 the 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

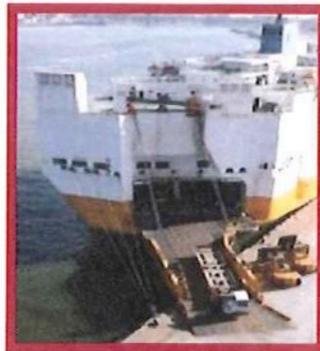
- Customs and Inspection (including agriculture)
- Entrance/Clearance/Immigration
- Quarantine
- Security

## ■ 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



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## Cargo Inland Movement

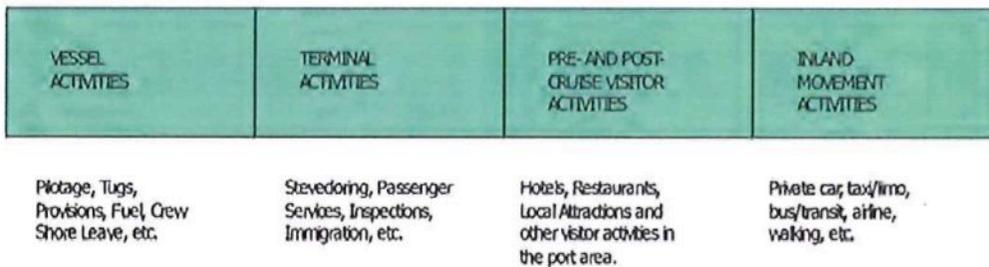
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- **Long Distance Truck** – the fee charged by trucking firms for the inland movement of the cargo beyond the port region. Usually, long distance trucking rates are developed and drivers compensated on a mileage basis.
- **Short Distance Truck** – 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.



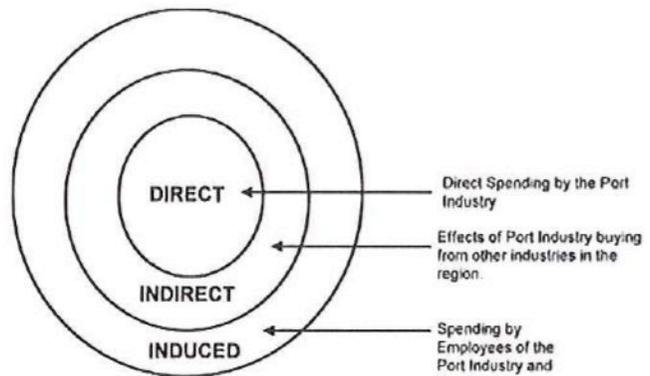
# Cruise Industry Definitions

- 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, taxis, and walking.



# 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 (of 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.



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## Economic Impact Measurements

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- **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 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 from 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

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- Working closely with Port Partners, A. Strauss-Wieder, Inc.:
  - Received and compiled information on capital investments from governmental agencies and port businesses.
  - Conducted surveys of 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.
  - Reviewed trends and conditions, field visited key nodes of distribution centers activities, and talked with industry professionals.
  - Used a customized version of the US Maritime Administration port economic impact model and the Rutgers RECON economic impact model to assess the impacts.



## About the Economic Impact Model

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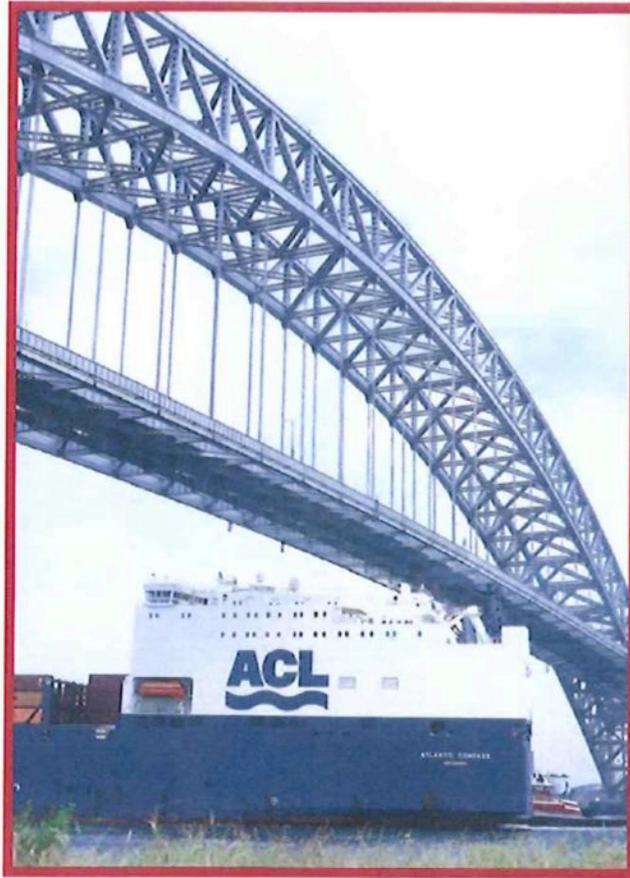
- The RECON input-output model, provided and maintained by Rutgers University, is constantly refined and updated (both in terms of the underlying data and programming) and has been extensively reviewed and evaluated in academic forums. Versions of the model have been used in economic impact analyses 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 have more than 500 industrial sectors. This level of detail provides a consistent and systematic approach, as well as a more accurate 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 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.





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