The Economic Impact of the Southern New Jersey Port Industry
2010

Prepared by:

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analyses for informed decision-making

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Prepared for:

DEPARTMENT OF TRANSPORTATION
THE STATE OF NEW JERSEY

Executive Summary

- The Southern New Jersey Port Complex plays a vital role in moving a wide range of products crucial in our daily lives – fruit and produce, plywood and steel, slag (concrete), cocoa beans, recycled metal and salt.
- In 2010, the Southern New Jersey Port Complex supported:
  - 1,101 direct jobs
  - 2,028 total jobs in New Jersey and 3,323 jobs in the US
  - $99.1 million in labor income in New Jersey
  - $298.1 million in net business income in New Jersey
  - $37 million in federal, state and local tax revenues in the State
    - Local and State Tax Revenue: $9.8 million
    - Federal Tax Revenue: $27.2 million
- The New Jersey impacts associated with the operation of the Port occurred in the southern region of the State. Customers of the Port extend across a multi-state area.
- The Southern New Jersey Port Complex continues to grow with the development of the new Paulsboro Marine Terminal and revitalization of the Port of Salem.

Investing in Waterborne Movement

- Public agencies and the private sector invested $65.6 million between 2006 and 2010 in the Southern New Jersey Port Complex.
- This work includes improvements to wharfs, buildings, road and rail infrastructure, as well as investments in the equipment needed to move cargo.
- The completed construction and investment activity supported over the construction period:
  - 335 direct jobs
  - 590 total jobs in New Jersey and 1,130 in the US
  - $30.6 million in labor income in New Jersey
  - $69.9 million in net business income in New Jersey
  - $11.4 million in federal, state and local tax revenues in the State
    - Local and State Tax Revenue: $2.4 million
    - Federal Tax Revenue: $9.0 million

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Investing for the Future

- Significant public and private sector investments will enable the Southern New Jersey Port Complex to accommodate a wide range of existing and emerging waterborne activities.
- Over $260.8 million is being invested. The improved facilities can more efficiently handle current commodities, as well as serve potential domestic marine highway and offshore wind farm activities.
- The impacts of expected 2011-2017 investments are anticipated to produce the following jobs and economic benefit over the construction period:
  - 1,210 direct jobs
  - 2,340 total jobs in New Jersey and 4,790 in the US
  - $129.1 million in labor income in New Jersey
  - $307.7 million in net business income in New Jersey
  - $48.2 million in federal, state and local tax revenues in the State
    - Local and State Tax Revenue: $9.7 million
    - Federal Tax Revenue: $38.5 million
- These impacts will increase with the recent awarding of a Tiger III grant to the South Jersey Port Corporation.

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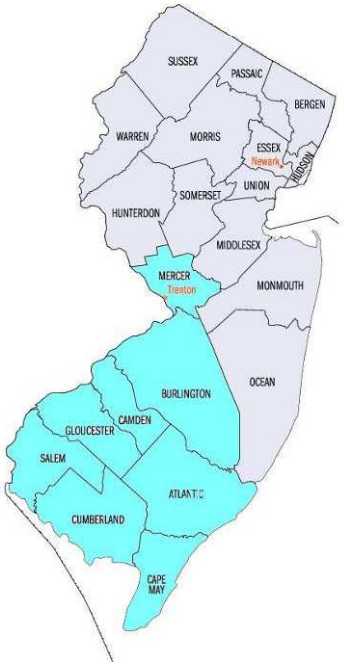
Introduction

- The Southern Port Complex contains a mix of maritime terminals, some with a rich history that dates to colonial times.
- At the same time, the terminals are investing to handle emerging maritime uses, including domestic marine highway services and offshore wind farms.
  - Intermodal Marine Lines, which anticipates offering marine highway services in the "M95" corridor, signed a memorandum of understanding with the South Jersey Port Corporation.
  - The Port of Salem is initiating bulk movements to the northern portion of New Jersey.
- 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.

The Regions

- The 2010 study assesses the impacts of the Southern New Jersey Port Complex on four areas:
  - Southern NJ, which includes Mercer, Burlington, Camden, Gloucester, Salem, Cumberland, Atlantic and Cape May counties.
  - The State of New Jersey
  - The Delaware Valley Regional Planning Commission (DVRPC) region
  - The US

DVRPC Region



Southern New Jersey Region

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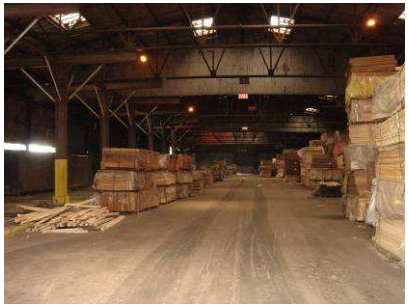
Moving a Broad Range of Commodities

- The Southern New Jersey Port Complex moves a wide range of products that are primarily handled as "breakbulk" and "bulk" cargo.
- Breakbulk movements include fruit, cocoa, plywood, and steel
- Bulk movements include cement, salt, recycled metal and urea.
- Containerized movements include Del Monte shipments.



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The Economic Impact of the Port on New Jersey

- In 2010, the Southern Port Complex handled:
  - Approximately 41,000 twenty foot equivalent containers (TEUs)
  - Nearly 480,000 tons of bulk cargo, including concrete, salt, recycled metal and urea
  - Nearly 2.2 million tons of breakbulk cargo, including fruit, cocoa, plywood and steel products
  - *These figures do not include the petro-chemical products moved by the Paulsboro Refinery and the private container terminal in Salem.*
- These cargo movements supported:
  - 1,101 direct jobs
  - 2,028 total jobs in New Jersey and 3,323 jobs in the US
  - $99.1 million in labor income in New Jersey
  - $298.1 million in net business income in New Jersey
  - $37 million in federal, state and local tax revenues in the State
    - Local and State Tax Revenue: $9.8 million
    - Federal Tax Revenue: $27.2 million
- The New Jersey impacts associated with the operation of the Port occur in the southern region of the State. The commodities handled by the Port serve customers throughout New Jersey and a multi-state area.
- The number of Port jobs decreased from the last impact analysis with the closure of such legacy businesses as the Sunoco Refinery. As new maritime activity develops, such as the opening of the Paulsboro Marine Terminal, Port jobs are anticipated to grow.

The Value of the Port to New Jersey, the DVRPC area and the Nation

	Geographical Level of Impacts			
	SJ Region	New Jersey	DVRPC	United States
Direct employment	1,101	1,101	1,101	1,101
Total employment	2,028	2,028	2,106	3,323
Labor income (in millions $)	$ 99.1	$ 99.1	$ 102.6	$ 143.4
Business activity (in millions $)	$ 298.1	$ 298.1	$ 316.3	$ 451.5
Local Tax revenues (in millions $)	$ 4.2	$ 4.2	$ 7.1	$ 8.9
State Tax Revenues (in millions $)	$ 5.7	$ 5.7	$ 5.9	$ 8.2
State and Local Taxes (in millions $)	$ 9.8	$ 9.8	$ 13.0	$ 17.1
Federal Tax Revenue (in millions $)	$ 27.2	$ 27.2	$ 31.6	$ 38.9
Total Tax Revenue (in millions $)	$ 37.0	$ 37.0	$ 44.6	$ 56.0

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 South Jersey and DVRPC Regions.

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The Port Supports a Wide Range of New Jersey Jobs

- Cargo movements at the Southern New Jersey Port Complex supports a wide range of occupations through the State's economy.
- These occupations reflect the range of jobs at the port as well as the:
  - Jobs in the businesses the supply goods and services to the Port.
  - Additional occupations that support the daily lives of the people working in the Port Industry and the businesses that support it.

Occupations	New Jersey
Executive, administrative, and managerial occupations	177
Professional specialty occupations	66
Technicians and related support occupations	25
Marketing and sales occupations	176
Administrative support occupations, including clerical	351
Service occupations	202
Agriculture, forestry, fishing, and related occupations	11
Precision production, craft, and repair occupations	223
Production occupations, precision	16
Plant and system occupations	2
Transportation workers, operators, fabricators, and laborers	779
Total	**2,028**

Investments Between 2006 and 2010

- The economic 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 and add an additional stream of activity to the region.
  - When the activities are done, the workers move on to other areas and other projects.

- In New Jersey, the $65.6 million in construction and investment activity between 2006 and 2010 supported over the construction period:
  - 335 direct jobs
  - 590 total jobs in New Jersey and 1,130 in the US
  - $30.6 million in labor income in New Jersey
  - $69.9 million in net business income in New Jersey
  - $11.4 million in federal, state and local tax revenues in the State
    - Local and State Tax Revenue: $2.4 million
    - Federal Tax Revenue: $9.0 million

Project Type	Expenditures in Millions	
Wharf	$	23.7
Rail	$	0.4
Rail Equipment	$	0.4
Building	$	23.4
Equipment - US	$	17.8
Total	**$**	**65.6**

Environmentally Sensitive Concrete Operation at the Port

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Significant Investments to Accommodate the Future

- The impacts of expected $260.8 million between 2011 and 2017 are anticipated to produce over the construction period:
  - 1,210 direct jobs
  - 2,340 total jobs in New Jersey and 4,790 in the US
  - $129.1 million in labor income in New Jersey
  - $307.7 million in net business income in New Jersey
  - $48.2 million in federal, state and local tax revenues in the State
    - Local and State Tax Revenue: $9.7 million
    - Federal Tax Revenue: $38.5 million
- These impacts do not reflect the recent awarding of a Tiger III grant to the South Jersey Port Corporation and the additional investment anticipated to occur.

Project Type	Expenditures in Millions	
Wharf	$	179.9
Road	$	13.0
Bridge	$	10.0
Rail Equipment	$	0.3
Building	$	5.5
Yard Improvements	$	1.0
Dredging	$	1.1
Equipment	$	49.2
Acreage Acquisition	$	0.9
Total	**$**	**260.8**

The Paulsboro Marine Terminal under construction in 2011.

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Definitions and Terminology for the Delaware River

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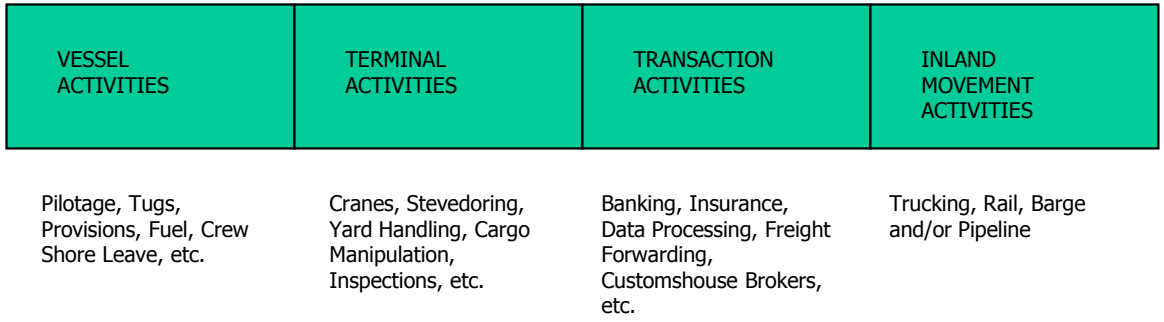
Cargo Movement Terms

- 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 lumber, 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 concrete, salt, recycled metal and urea. The cargo is not divided into individual units.



Cargo Handling Terms

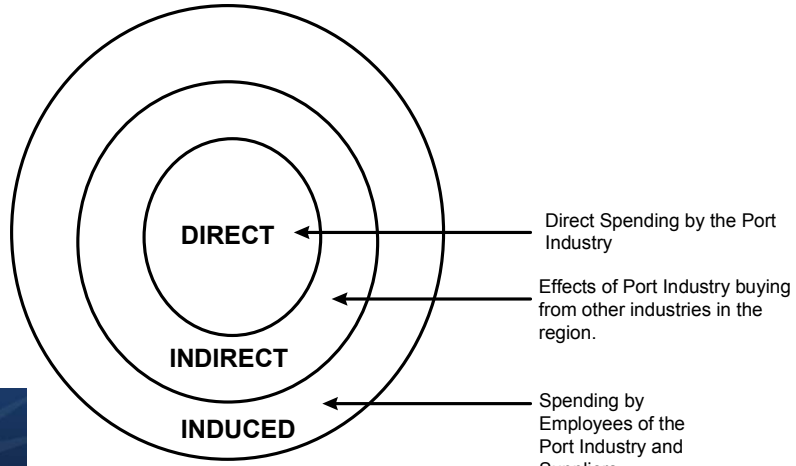
- **Waterside Services**:
  - Tugs
  - Pilots – navigation experts who board the vessel to facilitate travel and calling within the harbor and channels.
  - Line Handling – the port fee that covers the labor costs associated with tying up or releasing the mooring lines from a vessel.
  - Launch – the fee associated with 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 transfer of cargo from one 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**
  - US Coast Guard
  - 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 a $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 free 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. Barges, for example, are used for grancem movement.
- 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 railroads for moving the shipment. Rail costs include expenditures associated with rail terminal operations, switching and line haul movements. The Southern New Jersey Port Complex is within the southern Conrail Shared Assets Area in the State.

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.



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.
- Business income/revenue effects – generally defined as net business revenues generated in each of the geographically defined regions.
- Total earnings/labor 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 R/ECON I-O model identifies the employment implications in terms of specific occupations.

About the Approach

- Working closely with Port Partners and NJDOT, A. Strauss-Wieder, Inc.:
  - Received and compiled information on capital investments from governmental agencies and port businesses.
  - Reviewed trends and conditions as well as field visited the maritime terminals that constitute the Southern New Jersey Port Complex and the surrounding areas.
- The Center for Urban Policy Research at Rutgers:
  - Developed customized regional definitions for New Jersey and the Southern New Jersey region so that versions of the US Maritime Administration port and the Rutgers R/ECON economic impact models could be used to assess the impacts.

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About the Economic Impact Model

- The R/ECON 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 economic modeling by providing a concise theoretical formulation of a dynamic economic system (including consumer purchases and the economic representation of "technology") in a general equilibrium framework.
- Wassily Leontief greatly advanced the practical application of Walras's theoretical formulation and was awarded the Nobel Prize in 1973. Leontief first used the 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. Once standardized procedures for compiling the requisite data (today's national economic census of industries) and enhanced capability for calculations (i.e., the computer), I-O's potential became more widely recognized. The federal government immediately realized the importance of Leontief's development and started publishing input-output tables of the U.S. economy in 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 R/ECON I-O 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.