

2040 Freight Industry Level Forecasts

ABOUT THIS PROFILE

The NJTPA has developed a set of alternative freight forecasts to support transportation, land use, and economic development decisions. The first step in the study process was to document current baseline conditions. This Freight Profile offers a snapshot of key metrics – Economy and Land Uses, Freight Flows, and Freight Transportation Networks in 2010 and in the forecast year, 2040.

ECONOMY AND LAND USES

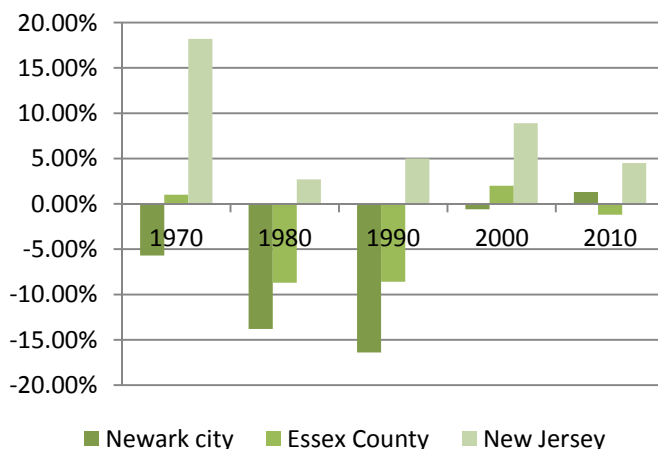
With a 2010 population of 277,140, Newark is the most populous city in the State of New Jersey. In the 2000s, Newark reversed a several-decade period of declining population and outpaced Essex County in population growth. The City's average household income is lower than that of the State, and Essex County overall. Newark's median household income has increased between 2005 and 2009 by more than \$2,000 when adjusted for inflation, while the State's median household income declined by more than \$1,700, and the County's median household income remained relatively stable.

Newark is home to...

- 277,140 people
- 9,546 businesses that employ 133,300 people; 30% of these jobs are in businesses that are highly dependent on freight movement
- 432 warehousing/distribution buildings and 171 manufacturing buildings
- About 48.4 million tons of domestic freight shipped or received annually
- Interstate, State, and County highways used by tens of thousands of trucks every day
- Major freight hubs, including Port Newark Container Terminal, Newark Liberty International Airport, and the Conrail Oak Island Yard.

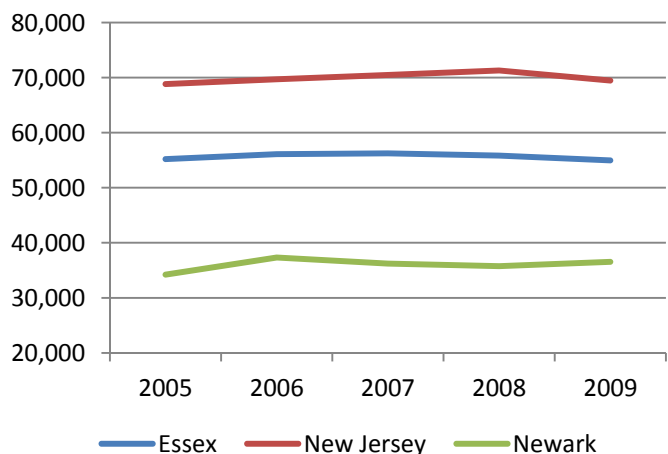
Population Growth by Decade

Source: U.S. Census Bureau



Household Income, Constant 2010 Dollars

Source: U.S. Census Bureau



Employment

The City's economy employs 133,300 people in more than 9,500 establishments. About 30% are employed in "freight-intensive" industries, such as construction, manufacturing, mining and extraction, retail trade, wholesale trade, and logistics. About 70% are employed in industries that may generate freight, but are less dependent on freight movement.

FREIGHT FLOWS

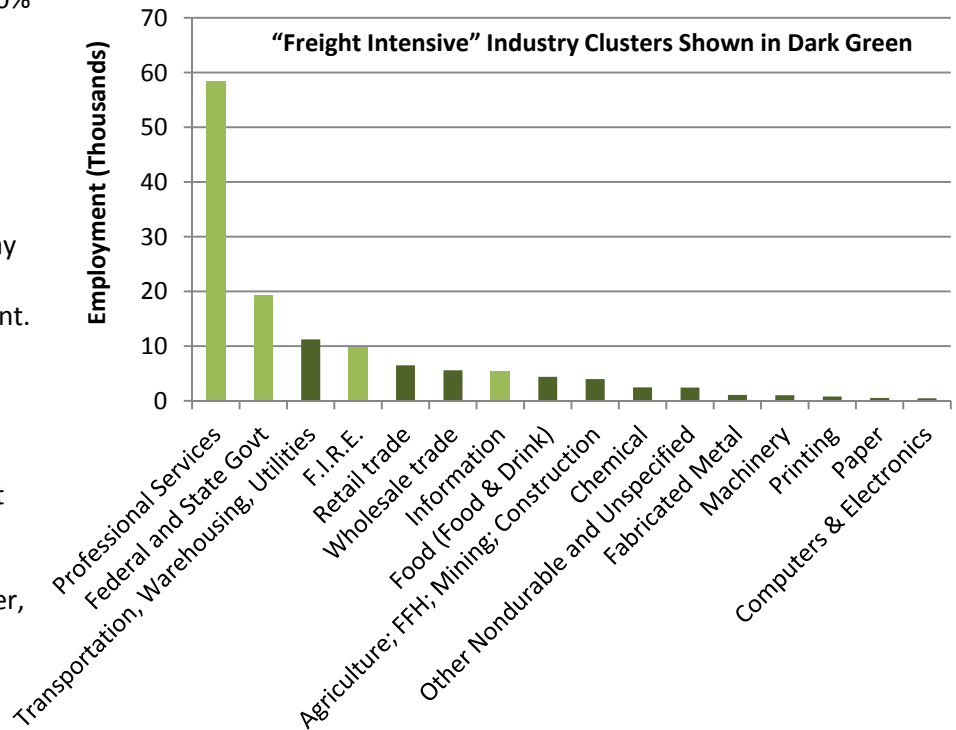
In 2007, approximately 48.4 million tons of domestic freight moved into, out of, or within Newark, by all modes of transportation (truck, rail, water, and air). This figure includes commodities moving into or out of Newark, but excludes pass-through tonnage. (The movement of international cargo to and from seaports, airports, and border crossings is captured and counted as domestic tonnage.)

Commodities

For domestic O-D tonnage, around 26% consisted of petroleum or coal products, 91% of which moved in the inbound direction. Other leading commodities include food, crude petroleum or natural gas, nonmetallic minerals, and waste or scrap materials. A larger share of tonnage was reported moving inbound (65%) versus outbound (35%).

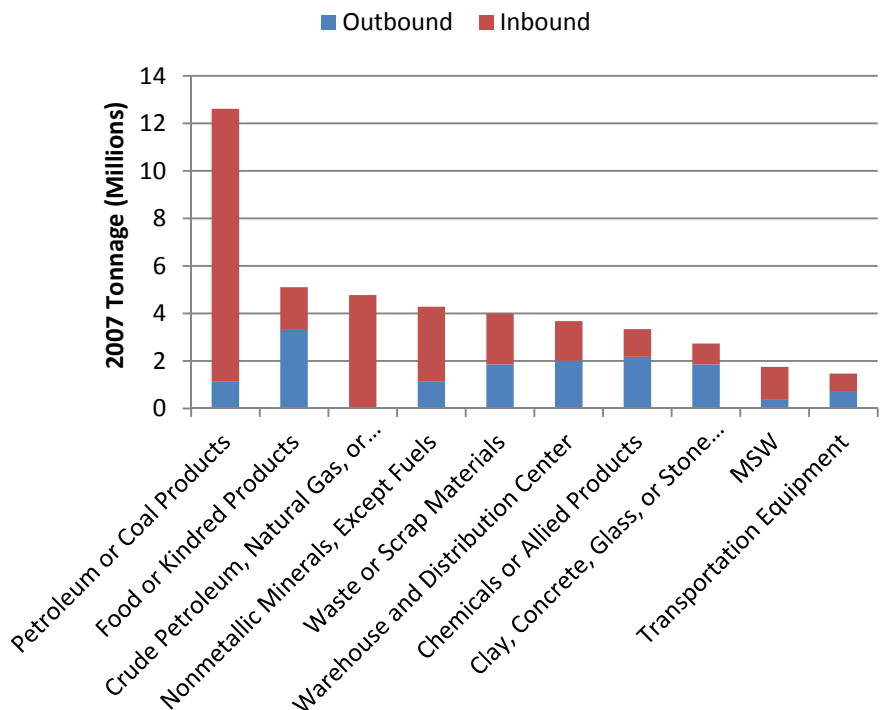
Employment by Industry, 2010

Source: R/ECON



Domestic O-D Commodities by Tonnage, 2007

Source: IHS Global Insight



Trading Partners

Newark’s major trading partners are, not surprisingly, its neighbors. As illustrated to the right, locations in New Jersey are the greatest origins of inbound freight. New Jersey trade consists of 30% of all Newark trade by tonnage. New York, Canada, and Pennsylvania are the greatest origins and destinations of freight traveling to or from Newark. For all of the top trading partners, except New York and Connecticut, inbound flows exceed outbound flows.

FREIGHT TRANSPORTATION NETWORKS

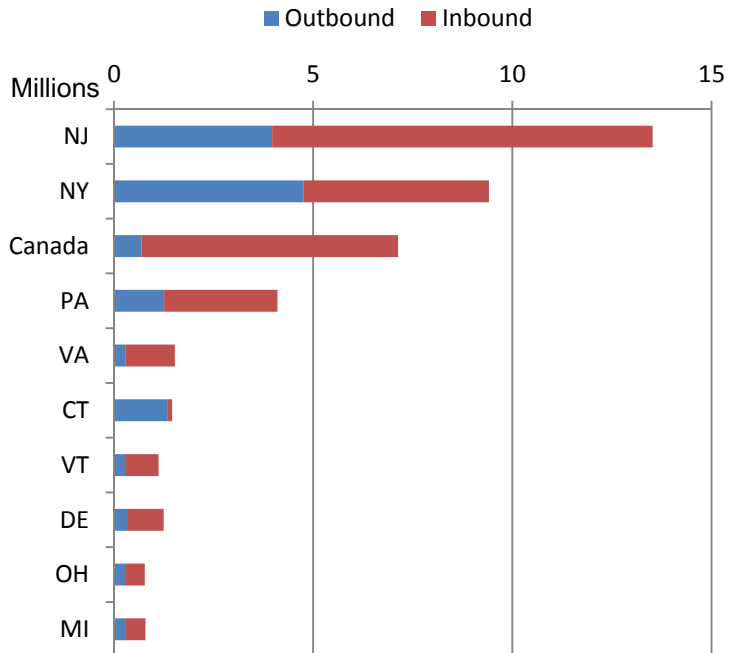
Freight can be handled by truck, rail, air or water. The choice of mode depends on a variety of factors, including: length of trip (rail and air are more competitive at longer distances), commodity type (rail and water are more competitive for heavy materials), time sensitivity (truck and air are most competitive), need for door-to-door service (trucking is needed unless the customer has a dock or a rail connection).

Mode Split

For domestic freight traveling to, from or within Newark, 55% travels by truck, 31% by water, and 14% by rail. The presence of rail and marine terminals in Newark result in a very diverse mode split distribution relative to other parts of the North Jersey region.

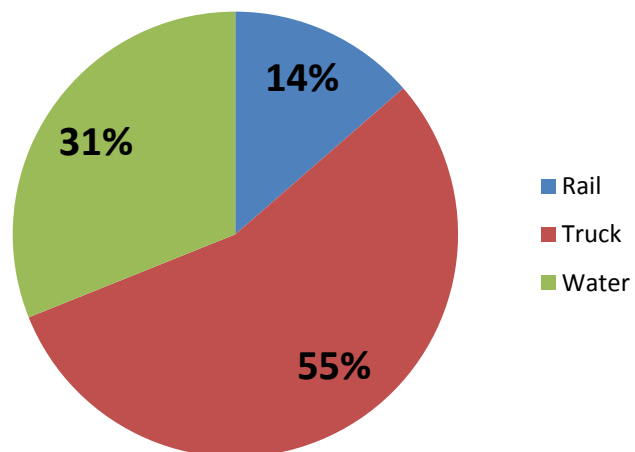
Top Origins and Destinations of Domestic O-D Freight Tonnage, 2007

Source: IHS Global Insight



Mode Split, Domestic O-D Tonnage, 2007

Source: IHS Global Insight



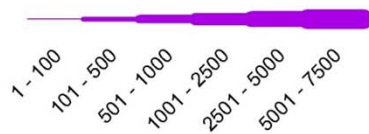
Highway and Rail Network Utilization

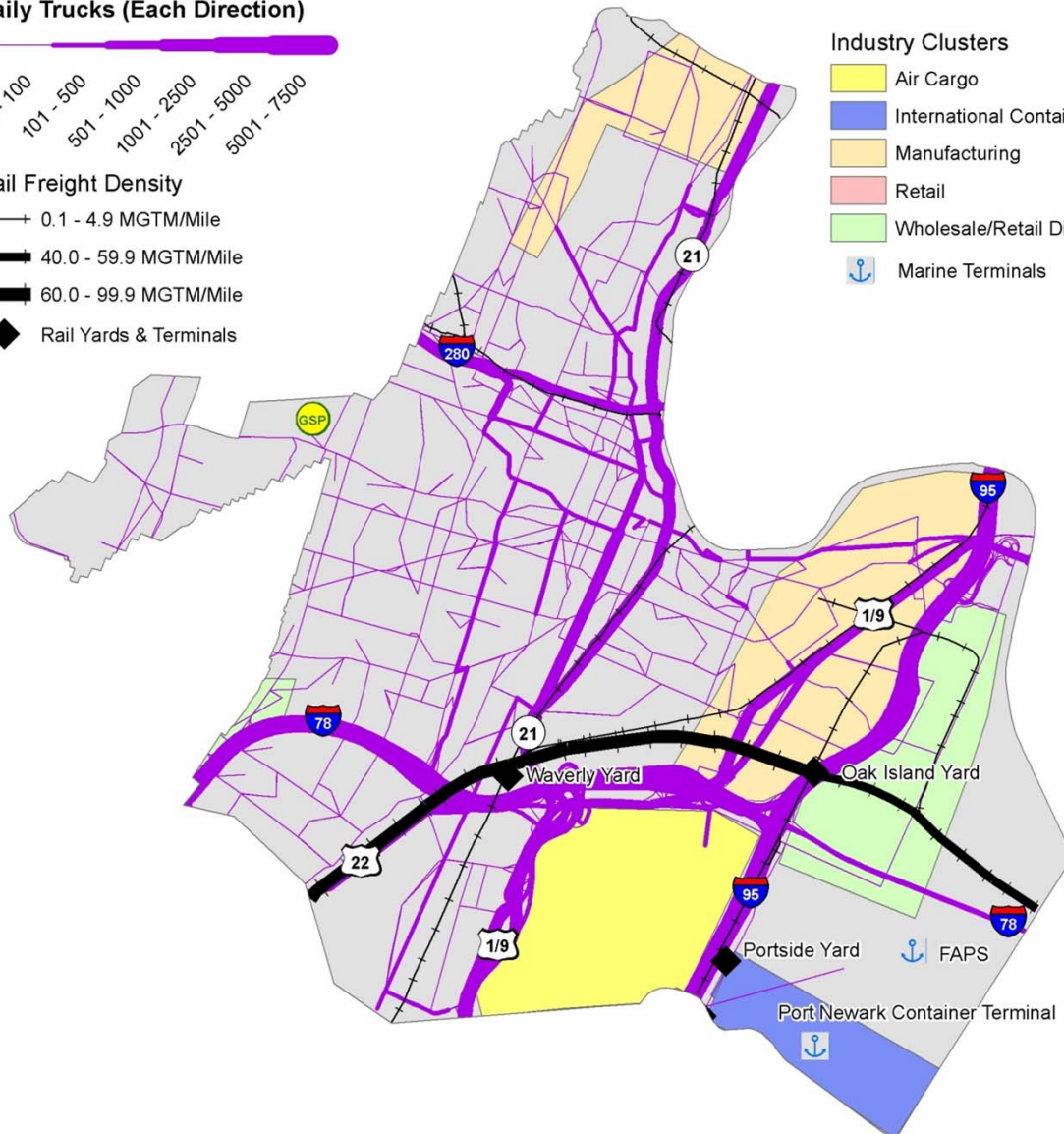
Newark’s highway network serves to connect its major freight activity centers with key trading partners elsewhere in the County, in the State of New Jersey, in other parts of North America, and – via international seaports and airports – the world. Segments of the New Jersey Turnpike/Interstate 95 carry as many as 15,000 trucks per day. Parts of Interstate 78 west of Interstate 95 carry up to 12,000 trucks per day. Daily truck volumes on Routes 1 and 9 and Route 21 exceed 5,000 on some segments. Not all trucks on the road are carrying freight. Some are moving empty. Others are providing municipal services (waste transfer, utility services, etc.) or commercial services (contractors, lumber, landscapers, etc.).

On the rail network, the Conrail National Docks Secondary and Conrail Lehigh Line, two of the highest-volume freight lines in the Region, converge at Oak Island Yard (a major freight classification yard). Intermodal trains consisting of international containers shipped via the seaport are sent in and out of the Region through Portside Yard. The map below illustrates how the highway and rail networks and terminals align with industrial activity clusters.

Commodity Truck and Rail Flows in Newark, 2007

Sources: IHS Global Insight (2007), NJTPA Regional Transportation Model-Enhanced (NJRTM-E), I-95 Corridor Coalition Integrated Corridor Analysis Tool Rail Network, and Dun and Bradstreet (2010)

Legend
Daily Trucks (Each Direction)

Rail Freight Density

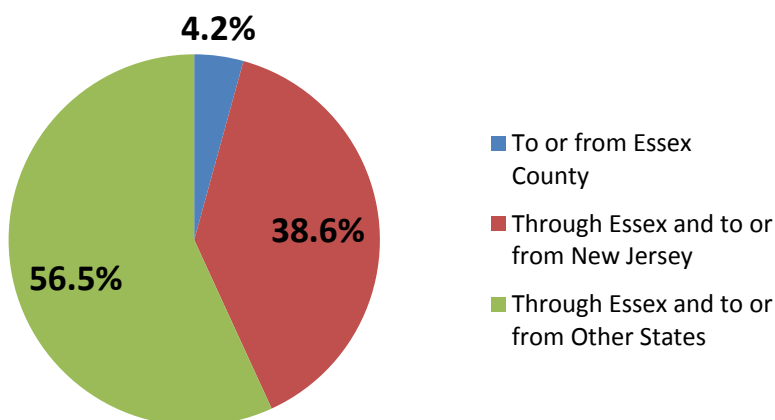
Industry Clusters


Highway Link Analysis

Different highways can be used by freight carrying trucks in different ways. Some highways have a high % of local traffic; others a high % of pass-through traffic. Many highways show significant differences at different locations. Among major highways in Newark, Interstates 78 and 95 were analyzed at the County level. The average values of internal and through traffic are shown in the graph to the right.

Truck Trips on Essex County Highway Links, 2007

Source: IHS Global Insight and USDOT Freight Analysis Framework-3



About 57% of trucks traveling on these highways in Essex County were passing through the County on their way to or from locations outside the State. Trucks traveling through Essex County on their way to or from locations elsewhere in New Jersey accounted for about 39% of trucks. About 4% of trucks on the selected highways were traveling to or from a location in Essex County.

Industrial Buildings Inventory

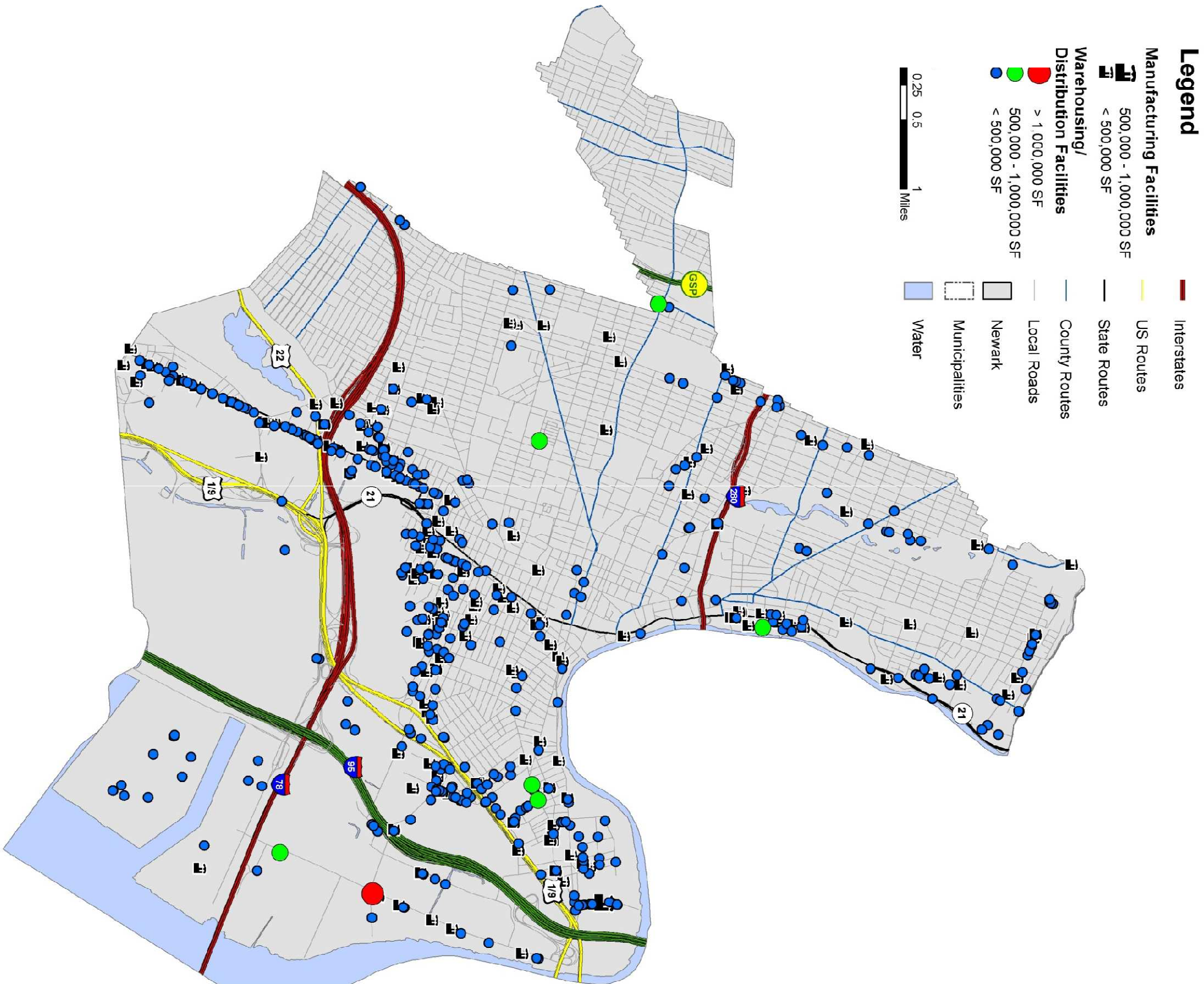
Freight-generating industries are supported by industrial buildings. The location of these buildings often depends on transportation access, and their uses may be significant generators of freight traffic. As illustrated on Pages 6 and 7, 171 manufacturing buildings are located in the City. More than 430 warehousing/distribution buildings are located within the City, one of which is more than 1 million square feet, and 6 of which are between 500,000 and 1 million square feet. The largest industrial buildings are located along Doremus Avenue, but several large clusters of smaller buildings exist throughout the City, including in the North Ironbound and South Ironbound neighborhoods, along Frelinghuysen Avenue in the Dayton neighborhood, and along Route 21 north of Interstate 280 near the Lower Broadway and North Broadway neighborhoods.

As summarized in the two tables to the right, many of the industrial buildings generate large volumes of freight. According to the Freight Locator database, 258 facilities in Newark receive more than 13.3 million tons and ship 5.0 million tons of freight annually. It is important to note that some facilities' inbound and outbound tonnage values do not match. This is because some types of local delivery and pickup moves are not classified as "commodity moves" in the source data.

Top 5 Facilities by Inbound/Outbound Tonnage, 2007

Source: IHS Global Insight Freight Locator Database

COMPANY NAME	CITY	INBOUND TONS
MAC ARTHUR PETROLEUM & SOLVENT	NEWARK	4,547,587
INNOVATION FUELS INC	NEWARK	1,139,611
ATLANTIC FUEL CO	NEWARK	997,160
CRAIG ADHESIVES & COATINGS	NEWARK	605,067
COD OIL CO	NEWARK	468,134
COMPANY NAME	CITY	OUTBOUND TONS
SIMS METAL MGMT		
NORTHEAST INC	NEWARK	697,812
INNOVATION FUELS INC	NEWARK	449,558
ANHEUSER-BUSCH CO	NEWARK	426,334
JOYCE FOOD LLC	NEWARK	406,553
ATLANTIC FUEL CO	NEWARK	323,687



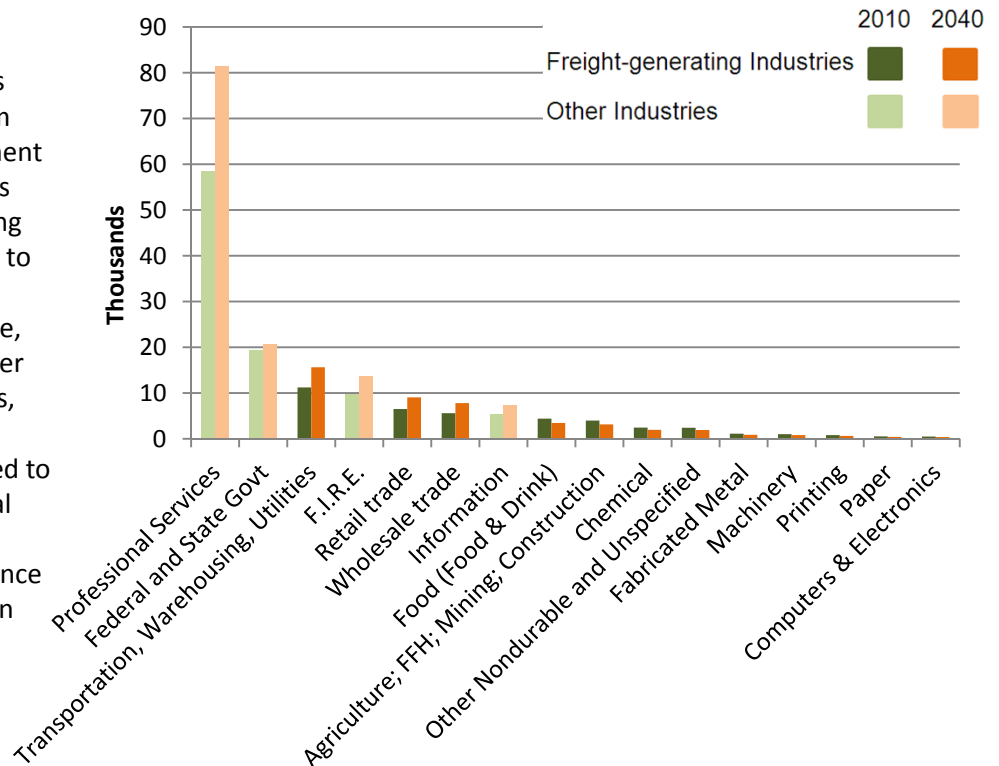
Industrial Buildings by Type and Square Footage, 2010
 Source: CB Richard Ellis

EMPLOYMENT FORECAST

Between 2010 and 2040, non-farm employment in Newark is expected to grow by 27%, from 133,300 to 168,900. Employment in freight-intensive industries is expected to grow by 14% during the forecast period, compared to 32% for other industries. The faster-growing services, finance, insurance, real estate, and other less freight-intensive industries, will make up 73% of the City's employment in 2040, compared to 70% in 2010. Among individual industry groups, professional services is expected to experience the greatest numeric growth in employment (22,900 jobs) during the forecast period.

Industry Employment Forecast, 2010 - 2040

Source: R/ECON



2040 COMMODITY FLOWS

By 2040, overall commodity flows into, out of, and within Newark are expected to have increased by about 30%, from 48.4 million tons to 62.9 million tons (a difference of 14.5 million tons). Petroleum or coal products is expected to remain the number one commodity in Newark by tonnage. Growth rates among the top ten commodities are expected to range from -3% (crude petroleum) to 62% (waste or scrap materials).

Top 10 Commodities by Tonnage, 2040

Sources: Cambridge Systematics, with data from IHS Global Insight

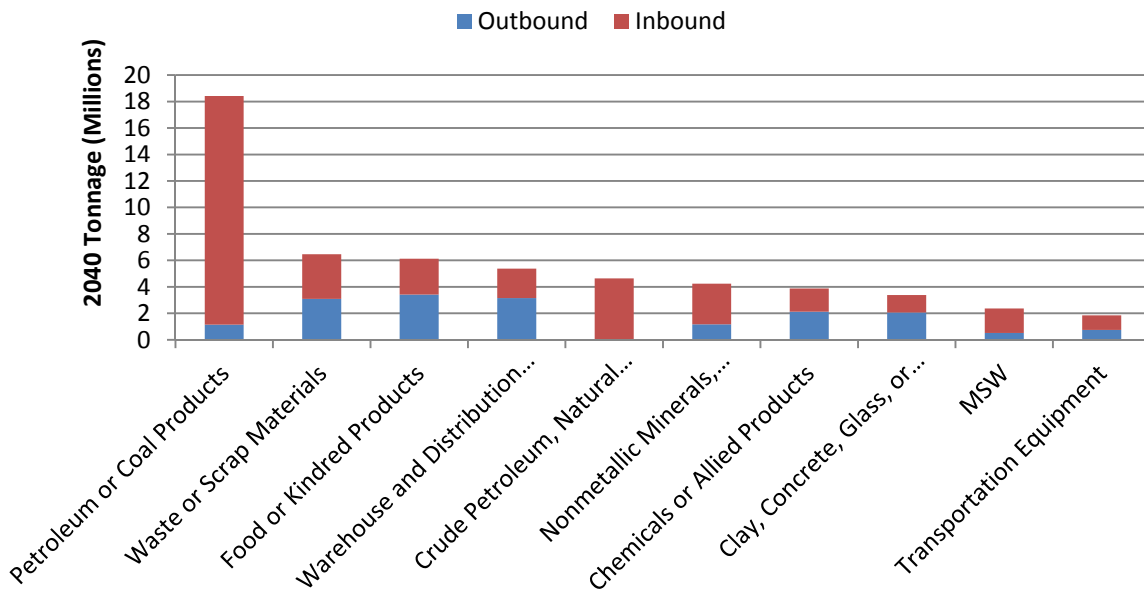
Commodity	2007 Tons	2040 Tons	Difference	Growth Rate
Petroleum or Coal Products	12,615,174	18,418,570	5,803,397	46%
Waste or Scrap Materials	3,993,522	6,463,129	2,469,606	62%
Food or Kindred Products	5,106,667	6,123,838	1,017,171	20%
Warehouse and Distribution Center	3,678,630	5,371,795	1,693,165	46%
Crude Petroleum, Natural Gas, or Gasoline	4,775,415	4,634,750	-140,665	-3%
Nonmetallic Minerals, Except Fuels	4,283,617	4,236,066	-47,551	-1%
Chemicals or Allied Products	3,336,940	3,872,139	535,199	16%
Clay, Concrete, Glass, or Stone Products	2,731,068	3,383,540	652,472	24%
MSW	1,753,509	2,369,066	615,557	35%
Transportation Equipment	1,468,990	1,844,227	375,236	26%

Commodity Volumes and Direction

Inbound freight moves are expected to grow faster than outbound moves during the forecast period. In 2007, inbound moves accounted for 65% of all freight tonnage. By 2040, inbound moves are expected to account for 68% of all tonnage. Growth in petroleum or coal, waste or scrap materials, and municipal solid waste (MSW) is expected to fuel the faster increase in inbound traffic.

Top 10 Commodities by Tonnage by Direction, 2040

Sources: Cambridge Systematics, with data from IHS Global Insight

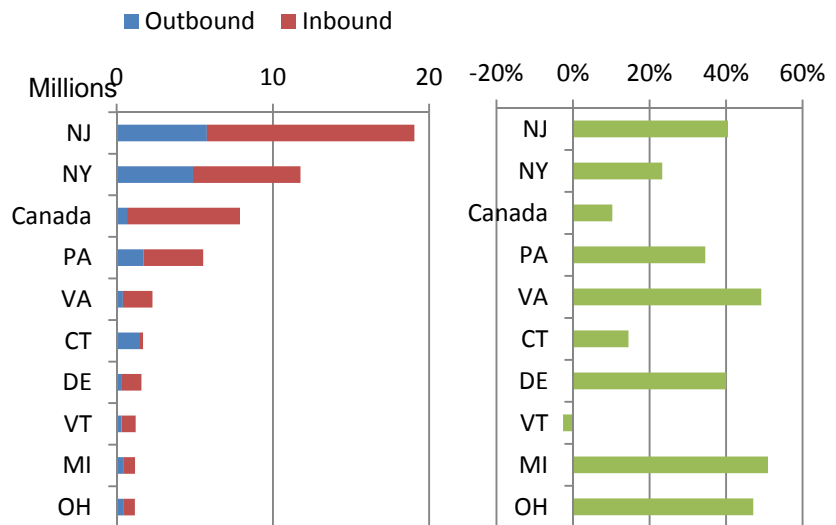


Trading Partners by 2040 Tonnage (Left) and 2007-2040 Growth (Right)

Source: Cambridge Systematics, with data from IHS Global Insight

Future Trading Partners

Newark's largest trading partners will continue to be other New Jersey counties, followed by New York, Canada, and Pennsylvania. The predominant direction of trade with the top partners (except Connecticut) will continue to be inbound. Growth in trade with States in the Midwest and the Mid-Atlantic will outpace growth in trade with Canada and the New England states.

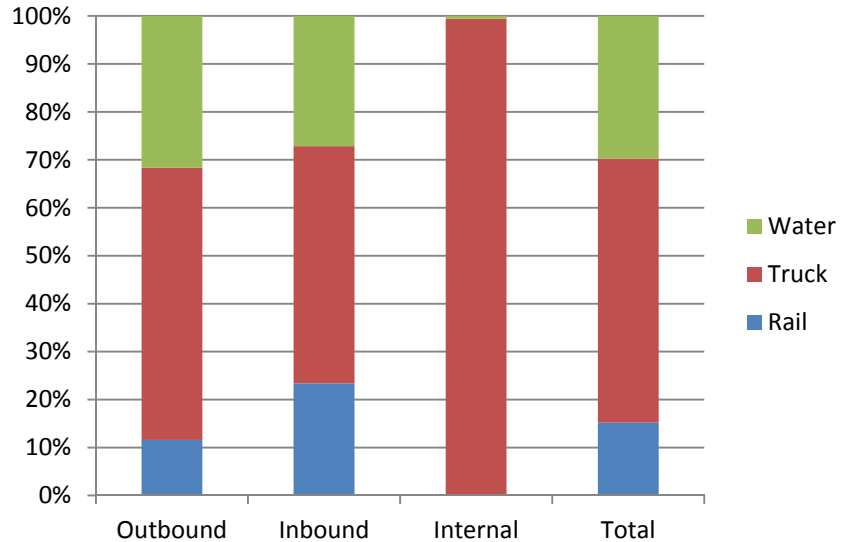


Future Mode Utilization

The forecast anticipates that rail will gain a slightly larger share of the market (15% in 2040, compared to 14% in 2007) and water will carry a slightly lower share (30% in 2040, compared to 31% in 2007) by 2040. Trucks are expected to carry 55% of all freight tons in 2040, which is the same share trucks carried in 2007. Rail is expected to have its highest share among inbound tonnage (23%), water will likely have its highest share for outbound freight (32%), and trucks will carry about 100% of intra-city freight.

Freight Tonnage by Mode and Direction, 2040

Source: Cambridge Systematics, with data from IHS Global Insight


Future Highway Network Utilization

In 2040, Newark’s highway network is expected to remain the primary conveyor of freight into, out of, within and through the City. The number of trucks traveling on the New Jersey Turnpike is expected to increase by 40%, or 6,000 trucks per day. Segments of Routes 1/9 and Interstate 78 west of the Turnpike could carry 2,000-3,000 more trucks in the future. Truck volumes on sections of Interstate 280, US Route 22, and NJ Routes 21 and 24 could double to nearly 10,000 daily trucks.

The map on Page 11 illustrates the projected truck volumes in 2040 on highways in the City of Newark.

ABOUT THE NJTPA

The North Jersey Transportation Planning Authority (NJTPA) is the federally authorized Metropolitan Planning Organization for 6.6 million people in the 13-county northern New Jersey region. Each year, the NJTPA oversees the investment of more than \$1 billion in federal funding for transportation projects and provides a forum for interagency cooperation and public input into funding decisions. It also sponsors and conducts studies, assists County planning agencies and monitors compliance with national air quality goals.

The NJTPA Board of Trustees includes 15 local elected officials, including one representative from each of the 13 northern New Jersey counties—Bergen, Essex, Hudson, Hunterdon, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union and Warren—as well as from the cities of Newark and Newark. The Board also includes the Commissioner of the New Jersey Department of Transportation (NJDOT), the Executive Directors of NJ Transit and the Port Authority of New York & New Jersey, a Governor’s Representative, and a Citizens’ Representative appointed by the Governor.

Newark’s representative on the NJTPA Board of Trustees is Mayor Cory A. Booker.

ABOUT THIS STUDY

The North Jersey Transportation Planning Authority (NJTPA) is pleased to announce the completion of a major new freight planning initiative – the development of Year 2040 Freight Industry Level Forecasts.

Freight issues are extremely important in the NJTPA planning region, which includes thirteen counties in Northern New Jersey. The region hosts: the Port of New York and New Jersey, one of the nation’s top three ports on the basis of tonnage and containers; heavily-used local, regional, and interstate truck corridors and crossings; heavy concentrations of intermodal and non-intermodal rail activity; significant national and international air cargo facilities; and hundreds of millions of square feet of warehouse/distribution space. These networks and facilities are essential to the economic and transportation well-being of 6.6 million residents in the NJTPA region and 20 million in the NY/NJ metropolitan statistical area, along with more than 312,000 regional businesses. Understanding the effects and importance of freight is therefore critical – not only to ensure the accuracy of the regional transportation planning process, but also to effectively communicate the importance of freight to the region’s freight stakeholders, businesses, communities, residents, and funding decision-makers.

The primary goal of the 2040 Freight Industry Level Forecasts project was to develop a clear, accurate and comprehensive picture of regional freight activity, both current and future. The end product is an accurate picture of where concentrations of goods movement activity can be expected to occur in the region in the future, the types of commodities that will be moving, and where strategic investments should be made.

FOR FURTHER INFORMATION

For further information, please contact Jakub Rowinski, NJTPA Project Manager, at jrowinski@njtpa.org.

This Freight Profile is one of a series of profiles, covering the 13 counties of the NJTPA region, the City of Newark, Newark, and the region as a whole. This document was prepared by the North Jersey Transportation Planning Authority, Inc. with funding from the Federal Transit Administration and the Federal Highway Administration. The NJTPA is solely responsible for its contents.