

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

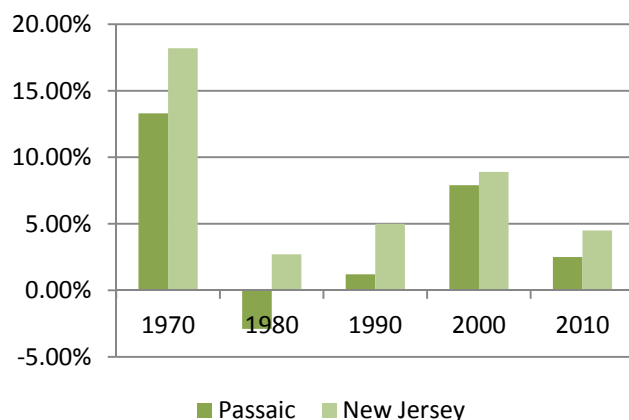
With a 2010 population of 501,226, Passaic is the ninth most populous County in the State, and eighth in the NJTPA region. Passaic County's population has historically grown more slowly than the State overall, as much of the County's urbanized land was developed in the middle of last century. The County's median household income is lower than that of the State overall. The changes in household income due to the recession were more pronounced in Passaic County than the rest of the State. The median household income in Passaic County, in constant 2010 dollars, fell by 8.5% between 2008 and 2009.

Passaic County is home to...

- 501,226 people
- 23,616 businesses that employ 172,700 people; 36% of these jobs are in businesses that are highly dependent on freight movement
- 594 warehousing/distribution buildings and 347 manufacturing buildings
- About 17.0 million tons of domestic freight shipped or received annually
- Interstate, State, and County highways used by tens of thousands of trucks every day
- NYS&W and Norfolk Southern rail service

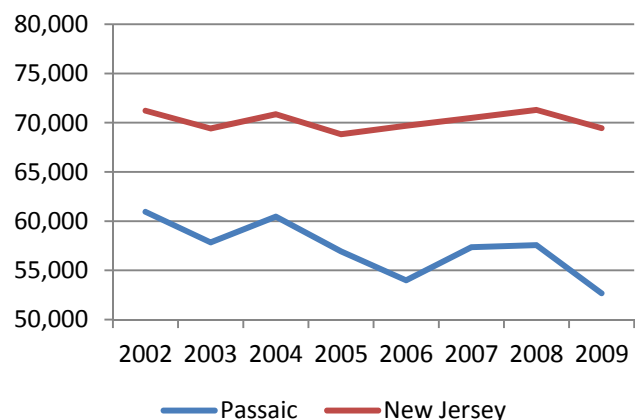
Population Growth by Decade

Source: U.S. Census Bureau



Household Income, Constant 2010 Dollars

Source: U.S. Census Bureau



Employment

The County's economy employs 172,700 people in more than 23,000 establishments. About 36% are employed in "freight-intensive" industries, such as construction, manufacturing, mining and extraction, retail trade, wholesale trade, and logistics. About 64% are employed in industries that may generate freight, but are less dependent on freight movement.

FREIGHT FLOWS

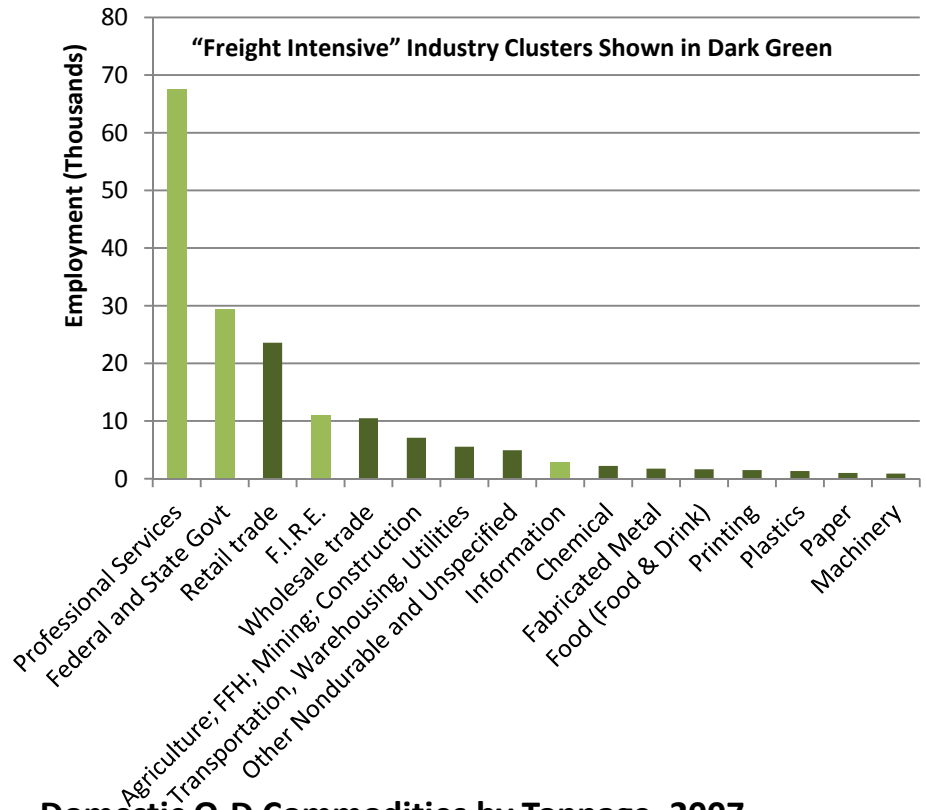
In 2007, approximately 17 million tons of domestic freight moved into, out of, or within Passaic County, by all modes of transportation (truck, rail, water, and air). This figure includes commodities moving into or out of Passaic County, but excludes pass-through tonnage. (The movement of international cargo to and from seaports, airports, and border crossings is captured and counted as domestic tonnage.)

Commodities

For domestic O-D tonnage, around 20% consisted of moves of goods to or from warehouses or distribution centers, which move primarily outbound from Passaic County to other locations. Other leading commodities include nonmetallic minerals, municipal solid waste (MSW), clay/concrete/glass/stone, chemicals, and petroleum or coal products.

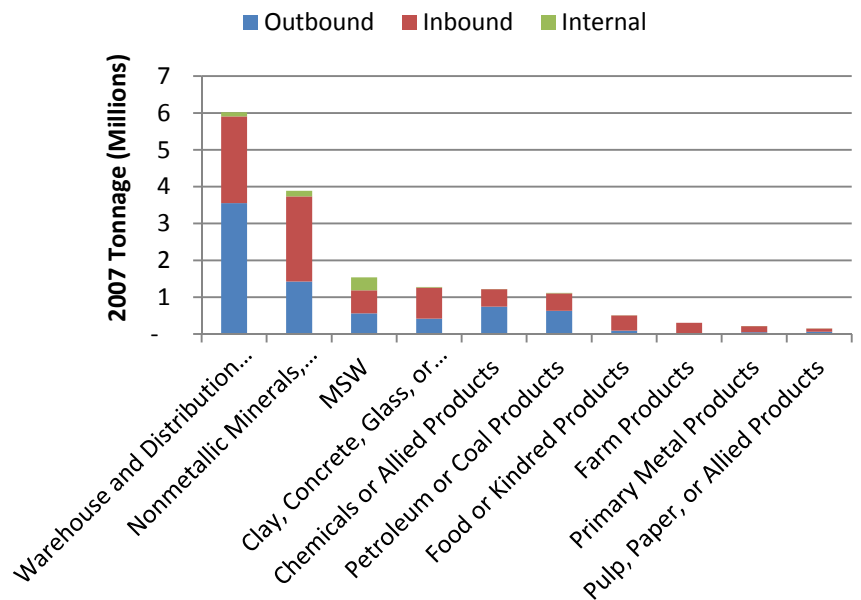
Employment by Industry, 2010

Source: R/ECON



Domestic O-D Commodities by Tonnage, 2007

Source: IHS Global Insight

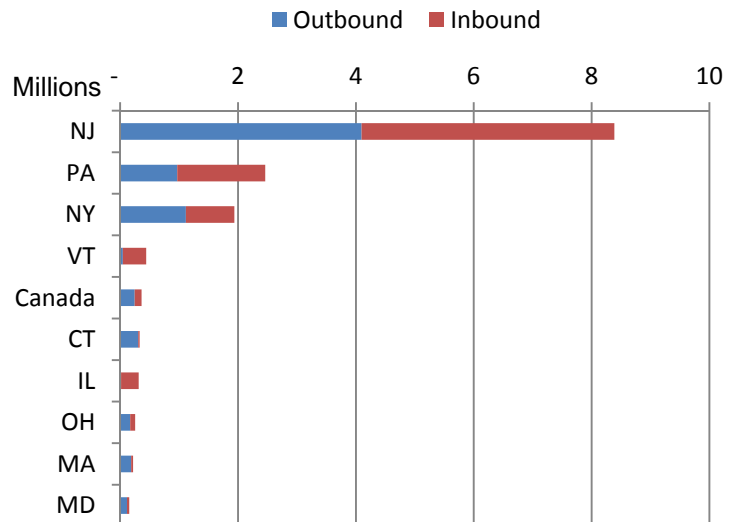


Trading Partners

Passaic County’s major trading partners are, not surprisingly, its neighbors. As illustrated to the right, nearly half of all freight moving into or out of Passaic County is traveling to or from other locations in New Jersey, in a nearly even split between inbound and outbound. Trade with Pennsylvania is slightly more in the inbound direction, while most trade with New York is outbound. Other major trading partners include the New England States of Vermont, Connecticut and Massachusetts; Canada; Illinois; Ohio; and Maryland.

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

Source: IHS Global Insight



FREIGHT TRANSPORTATION NETWORKS

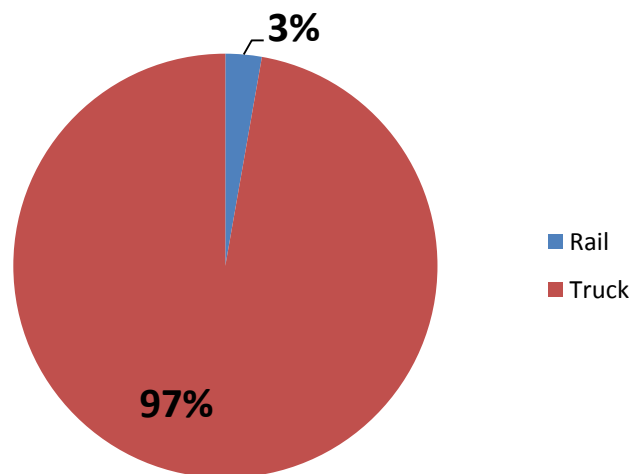
Freight can be handled by truck, rail, air or water. The choice of mode depends on a variety of factors, including: length of trip (rail and air are more competitive at longer distances), commodity type (rail and water are more competitive for heavy materials), time sensitivity (truck and air are most 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 Passaic County, 97% travels by truck, primarily to and from warehouses, distribution centers, manufacturing facilities and retail centers. Around 3% travels by rail.

Mode Split, Domestic O-D Tonnage, 2007

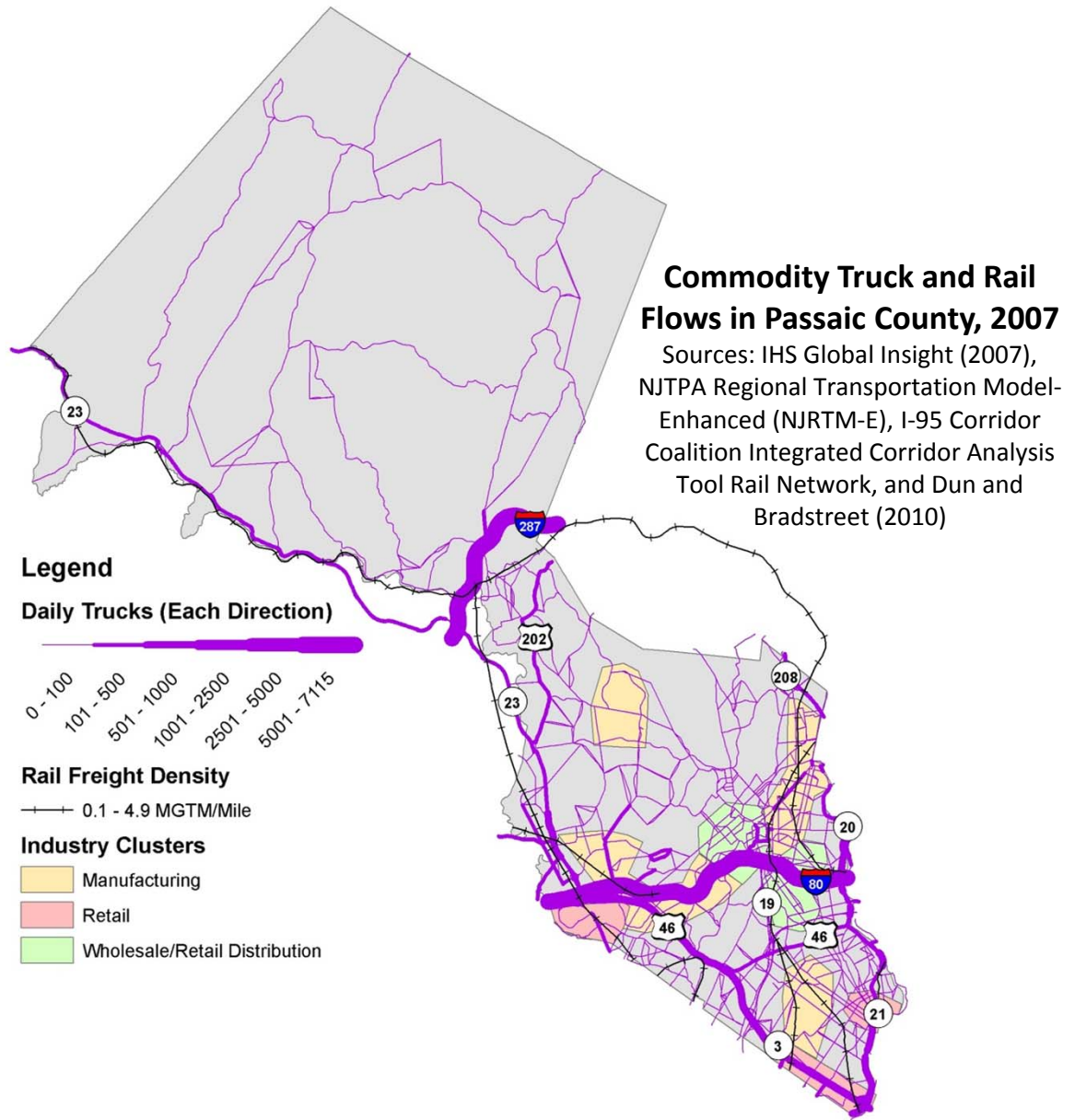
Source: IHS Global Insight



Highway and Rail Network Utilization

Passaic County’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 Interstate 80, which runs across the southern half of the County, accommodate as many as 14,000 trucks per day. The section of Interstate 287, which traverses the narrow midsection of the County, carries about 10,000 trucks per day. Sections of Route 3, Route 46 west of Clifton, and Route 21 in Clifton and Passaic carry up to 2,000 trucks per day. 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.).

The freight rail lines in Passaic County are owned by the New York, Susquehanna and Western Railroad (NYS&W) and NJ Transit (served by Norfolk Southern). Their primary routes pass through Paterson, Hawthorne, western Bergen County, Pompton Lakes, Clifton and Passaic. The map below illustrates how the highway and rail networks and terminals align with industrial activity clusters.

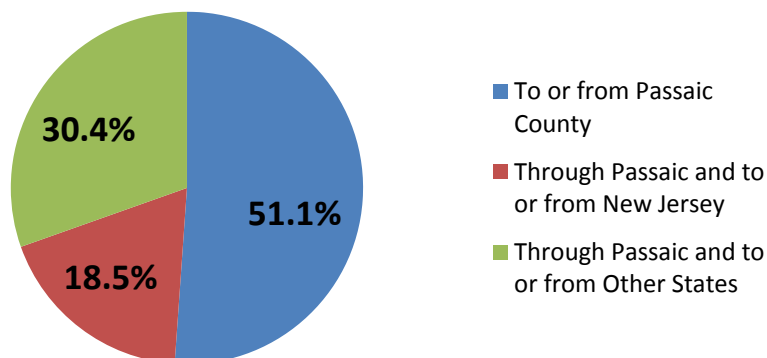


Highway Link Analysis

Different highways can be used by trucks carrying freight 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 Passaic County, including Interstates 80 and 287, the average values of internal and through traffic are shown in the graph to the right.

Truck Trips on Passaic County Highway Links, 2007

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



More than 50% of the trucks on the selected highways in Passaic County were traveling to or from a location within Passaic County. About 18.5% were traveling through Passaic on their way to or from a location elsewhere in New Jersey. About 30% of trucks on the selected highways were traveling through Passaic County on their way to or from a location outside the State.

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, nearly 350 manufacturing buildings are located in the County. Manufacturing buildings are found almost exclusively in the southeastern portions of the County, along corridors surrounding State Routes 3, 21, 19, 20, 46, and 202. Nearly 600 warehousing/distribution buildings are located within the County, two of which are between 500,000 and 1 million square feet. These buildings are clustered almost entirely in the southeastern portion of the County, particularly in the Paterson, Passaic, Clifton, and Hawthorne areas; and along Routes 46 and 202 in West Paterson, Totowa, Little Falls, Wayne, and Pequannock.

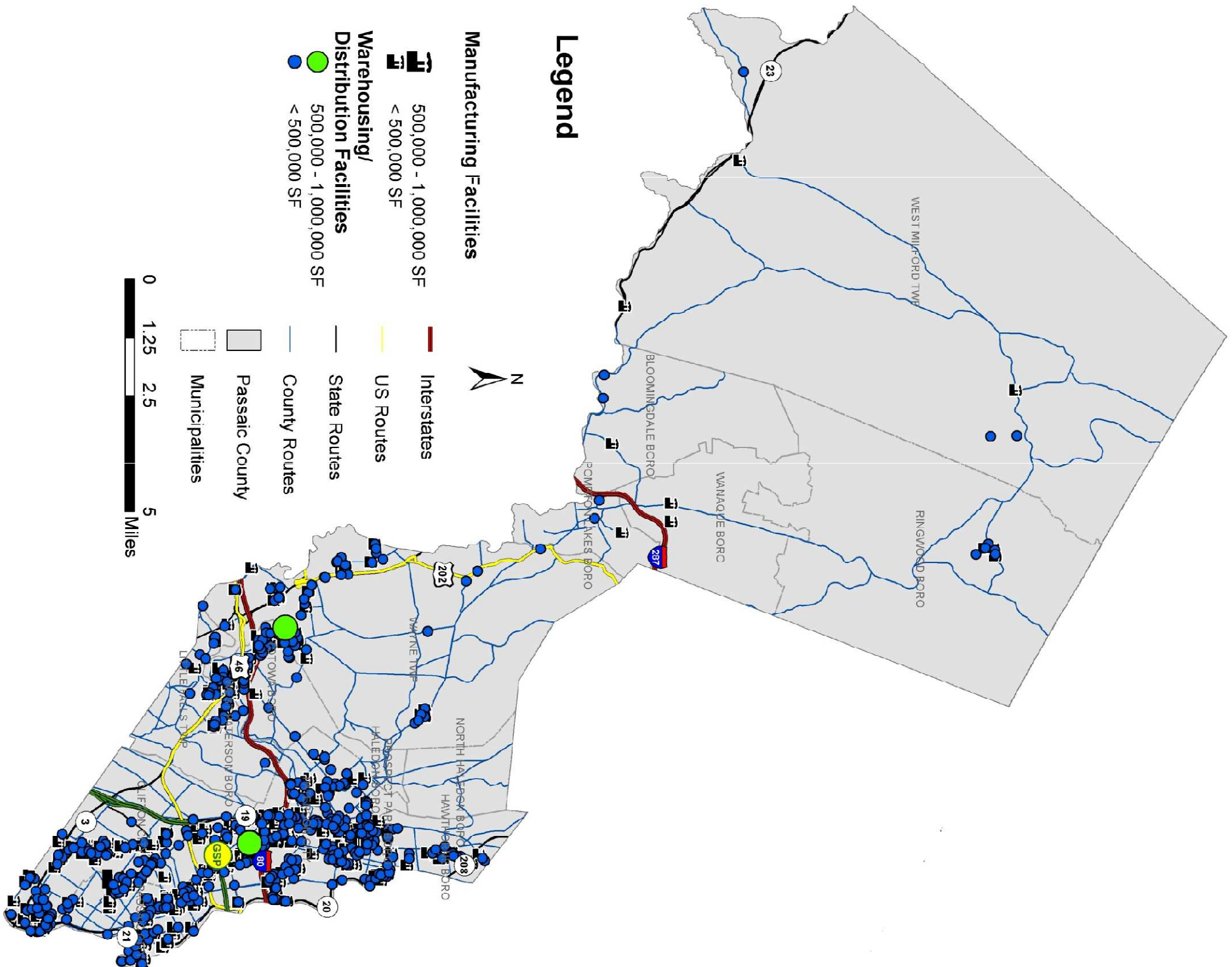
As summarized in the two tables to the right, many of the industrial buildings generate large volumes of freight. According to the Freight Locator database, 486 facilities in Passaic County receive more than 2.6 million tons and ship 5.1 million tons of freight annually. It is important to note that 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
STRAND-FAIRCLOUGH FUEL	PATERSON	316,748
GLAXOSMITHKLINE	CLIFTON	211,894
BOSTON SCIENTIFIC CORP	WAYNE	194,214
TRICO EQUIPMENT LLC	TOTOWA	65,509
ELEVATOR DOORS-ELEVATOR CABS	PATERSON	64,282
COMPANY NAME	CITY	OUTBOUND TONS
TILCON NEW JERSEY INC	PROSPECT PARK	1,387,999
TILCON	TOTOWA	359,067
STRAND-FAIRCLOUGH FUEL	PATERSON	189,592
SPIRAL BINDING CO INC	TOTOWA	136,355
PASSAIC COLOR & CHEMICAL CO	PATERSON	116,662

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

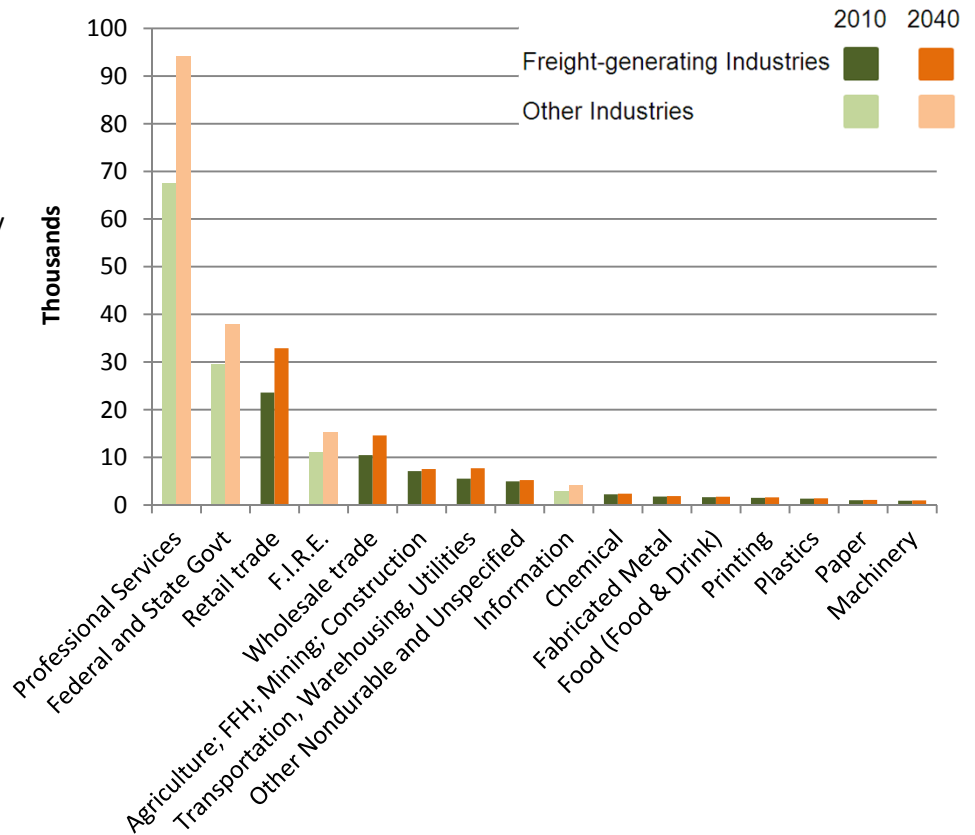


EMPLOYMENT FORECAST

Between 2010 and 2040, non-farm employment in Passaic County is expected to grow by 33%, from 172,700 to 230,100. Employment in freight-intensive industries is expected to grow by 27% during the forecast period, compared to 36.5% for other industries. The faster-growing services, finance, insurance and real estate, and other less freight-intensive industries will make up a larger share of the County's employment in the future (66% in 2040, compared to 64% in 2010). Among individual industry groups, professional services is expected to experience the greatest employment growth (26,600 jobs, or 39%), while manufacturing and machinery sectors are expected to grow slowest (6%).

Industry Employment Forecast, 2010 - 2040

Source: R/ECON



2040 COMMODITY FLOWS

By 2040, overall commodity flows into, out of, and within Passaic County are expected to have increased by about 45%, from 17.0 million tons to 24.6 million tons (a difference of 7.6 million tons). Warehouse and Distribution Center traffic is expected to remain the number one commodity transported in Passaic County by tonnage, followed by nonmetallic minerals, MSW, clay/concrete/glass/stone, and chemicals. Growth rates for most commodity groups are expected to range from 22% (nonmetallic minerals) to 61% (farm products).

Top 10 Commodities by Tonnage, 2040

Sources: Cambridge Systematics, with data from IHS Global Insight

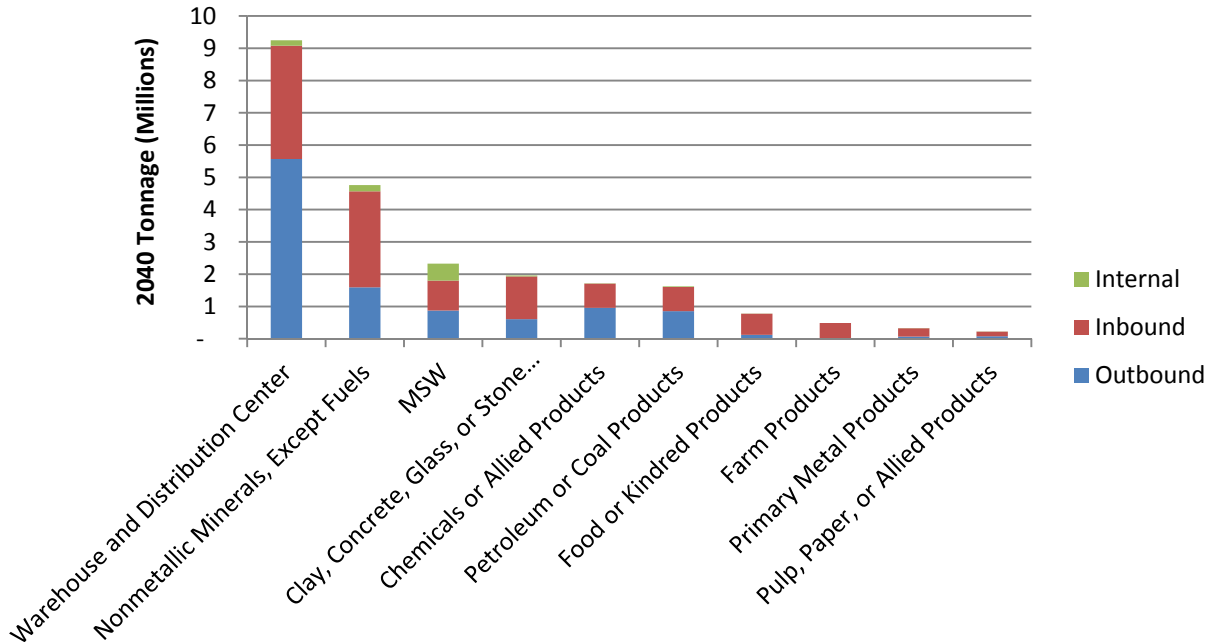
Commodity	2007 Tons	2040 Tons	Difference	Growth Rate
Warehouse and Distribution Center	6,021,986	9,246,474	3,224,489	54%
Nonmetallic Minerals, Except Fuels	3,885,948	4,759,860	873,912	22%
MSW	1,538,532	2,326,578	788,046	51%
Clay, Concrete, Glass, or Stone Products	1,276,909	1,959,125	682,216	53%
Chemicals or Allied Products	1,222,707	1,714,636	491,929	40%
Petroleum or Coal Products	1,116,985	1,621,234	504,250	45%
Food or Kindred Products	505,390	778,290	272,900	54%
Farm Products	302,757	486,291	183,534	61%
Primary Metal Products	213,829	327,486	113,657	53%
Pulp, Paper, or Allied Products	149,735	219,320	69,585	46%

Commodity Volumes and Direction

The directional movement of shipments containing the top ten commodities is expected to remain fairly constant as well. In 2040, like 2007, about 60% of warehouse and distribution center tonnage will be moving outbound from Passaic County, and 38% will be moving inbound. Nonmetallic minerals, clay/concrete/glass/stone, food, and farm products, will move primarily inbound, and chemicals and petroleum will move primarily outbound.

Top 10 Commodities by Tonnage by Direction, 2040

Sources: Cambridge Systematics, with data from IHS Global Insight

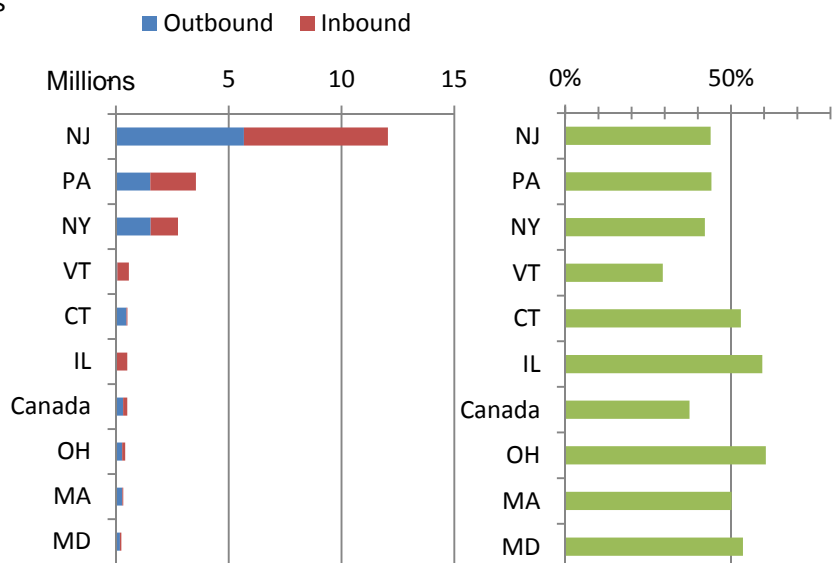


Trading Partners by 2040 Tonnage (Left) and 2007-2040 Growth (Right)

Source: Cambridge Systematics, with data from IHS Global Insight

Future Trading Partners

Passaic County's largest trading partners will continue to be other New Jersey counties, followed by Pennsylvania and New York. Rapid growth in outbound warehouse/distribution center moves will result in a more even inbound/outbound split for trade with Pennsylvania. Trade with distant locations in the West and Midwest, southern New England, and Maryland is expected to grow at a faster rate than trade with Passaic County's current top 4 trading partners and Canada.

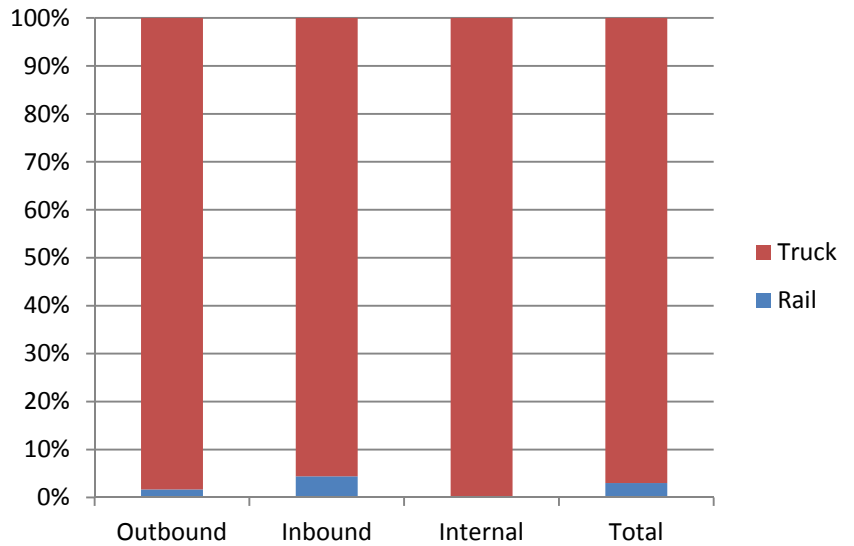


Future Mode Utilization

The forecast anticipates that freight mode splits in 2040 will be similar to 2007 mode splits. Trucks are expected to carry 97% of all freight tons, while rail is expected to carry about 3% of all freight tons. Rail will have a slightly higher share among inbound traffic (about 4%) relative to outbound traffic (about 2%). Trucks will carry about 100% of intra-county freight moves. Rail tonnage is expected to grow at a faster rate (59%) than truck tonnage (44%) during the forecast period.

Freight Tonnage by Mode and Direction, 2040

Source: Cambridge Systematics, with data from IHS Global Insight



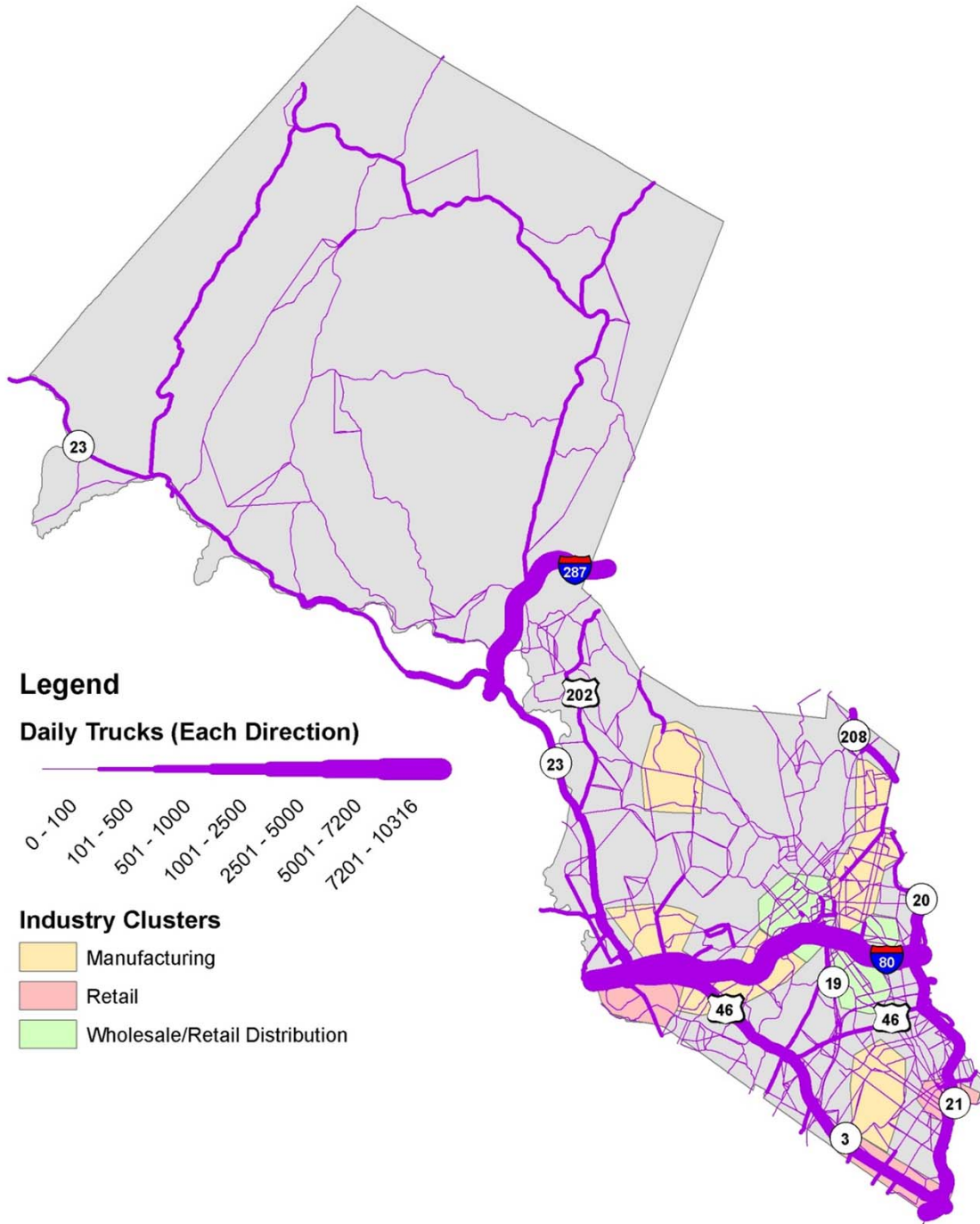
Future Highway Network Utilization

In 2040, Passaic County’s highway network is expected to remain the primary conveyor of freight into, out of, within and through the County. The number of trucks traveling on Interstate 80 daily may exceed 20,000 on some segments, an increase of more than 40% over 2007 volumes. Segments of Interstate 287 may have volumes exceeding 15,000 trucks per day. Parts of Routes 3, 21 and 46 may have daily truck volumes approaching 6,000 to 7,000.

The map on Page 11 illustrates the projected truck volumes in 2040 on highways in Passaic County.

Commodity Truck Flows in Passaic County, 2040

Sources: IHS Global Insight, NJTPA Regional Transportation Model-Enhanced (NJRTM-E), Dun & Bradstreet (2010)



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, Passaic, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union and Warren—as well as from the cities of Newark and Jersey City. 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.

Passaic County’s representative on the NJTPA Board of Trustees is Freeholder Director Pasquale “Pat” Lepore.

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, Jersey City, 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.