

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

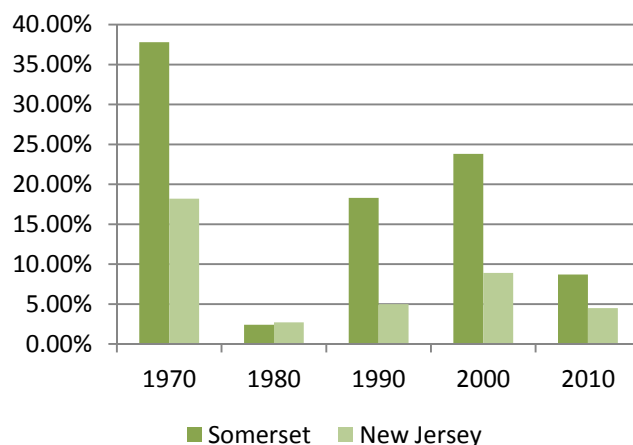
With a 2010 population of 323,444, Somerset is the thirteenth most populous County in the State, and tenth in the NJTPA region. Somerset County's population has historically grown more rapidly than the State overall, though growth during the 2000s slowed relative to the two previous decades. In 2009, the County's median household income was 30% higher than that of the State overall. The changes in household income due to the recession were more pronounced in Somerset County than the rest of the State. The median household income in Somerset County, in constant 2010 dollars, fell by 10% between 2008 and 2009.

Somerset County is home to...

- 323,444 people
- 16,437 businesses that employ 169,600 people; 33% of these jobs are in businesses that are highly dependent on freight movement
- 292 warehousing/distribution buildings and 121 manufacturing buildings
- About 32.9 million tons of domestic freight shipped or received annually
- Interstate, State, and County highways used by tens of thousands of trucks every day
- Busy freight rail lines, including Conrail & Norfolk Southern Lehigh Line, and the CSX West Trenton Line

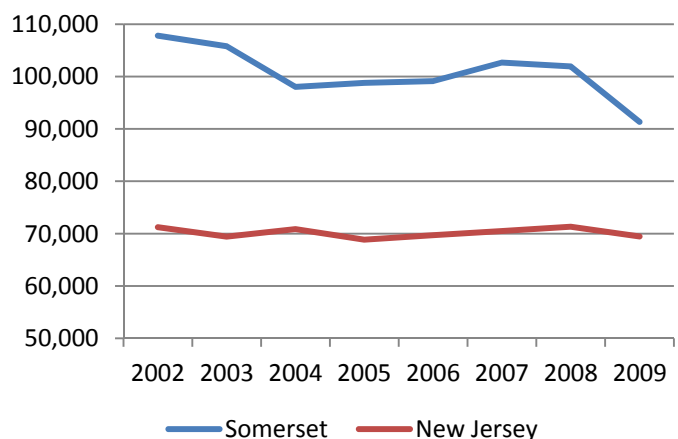
Population Growth by Decade

Source: U.S. Census Bureau



Household Income, Constant 2010 Dollars

Source: U.S. Census Bureau



Employment

The County's economy employs 169,600 people in more than 16,000 establishments. About 33% are employed in "freight-intensive" industries, such as construction, manufacturing, mining and extraction, retail trade, wholesale trade, and logistics. About 67% are employed in industries that may generate freight, but are less dependent on freight movement.

FREIGHT FLOWS

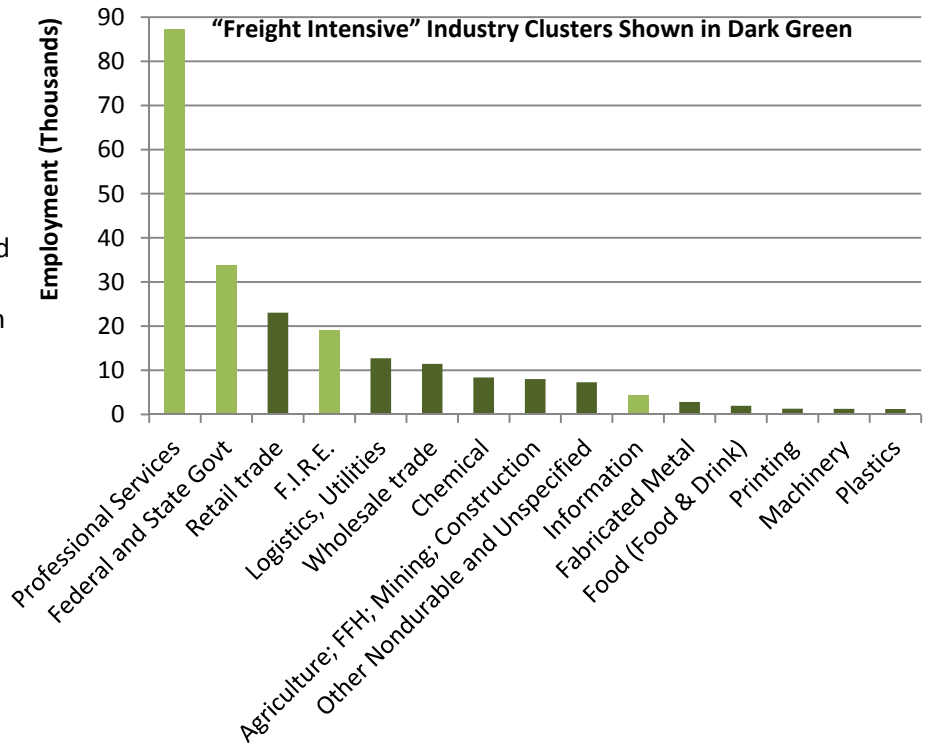
In 2010, approximately 32.9 million tons of domestic freight moved into, out of, or within Somerset County, by all modes of transportation (truck, rail, water, and air). This figure includes commodities moving into or out of Somerset County but excludes pass-through tonnage. (The movement of international cargo to and from seaports, airports, and border crossings is captured and counted as domestic tonnage.)

Commodities

For Domestic O-D tonnage, around one-third consisted of nonmetallic minerals, most of which are being moved outbound from Somerset County. Other leading commodities include warehouse and distribution center freight, chemicals or allied products, clay/concrete/glass/stone products, and petroleum or coal products.

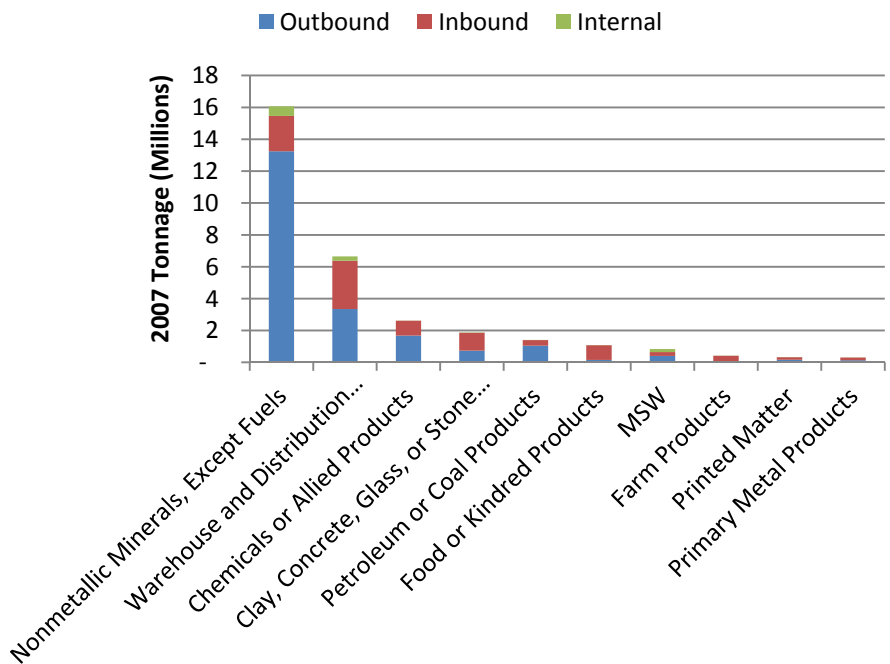
Employment by Industry, 2010

Source: R/ECON



Domestic O-D Commodities by Tonnage, 2007

Source: IHS Global Insight



Trading Partners

Somerset County’s major trading partners are, not surprisingly, its neighbors. As illustrated to the right, more than half of freight movements to or from Somerset County arrive or depart from other locations in New Jersey. Pennsylvania and New York are the primary out-of-state origins of inbound freight and destinations for outbound freight, respectively. Beyond those two States, the New England States, Texas, Maryland, and Midwestern States are among Somerset County’s leading trading partners.

FREIGHT TRANSPORTATION NETWORKS

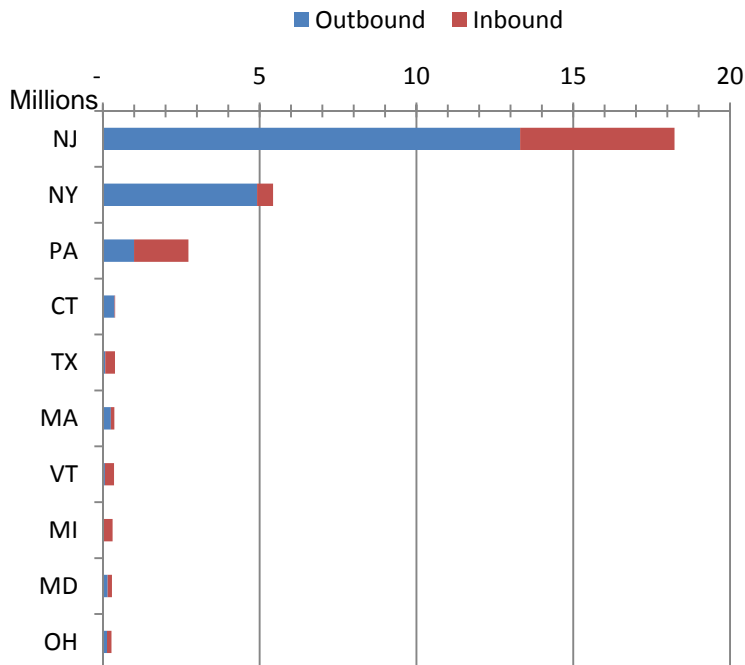
Freight can be handled by truck, rail, air or water. The choice of mode depends on a variety of factors, including: length of trip (rail and air are more competitive at longer distances), commodity type (rail and water are more competitive for heavy materials), time sensitivity (truck and air are most 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 Somerset County, 98% travels by truck, primarily to and from warehouses, distribution centers, manufacturing facilities, retail centers and quarries. About 2% of freight travels by rail, mostly in the inbound direction.

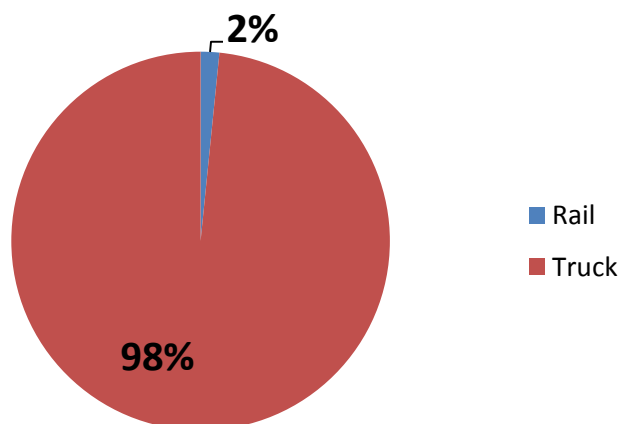
Top Origins and Destinations of Domestic O-D Freight Tonnage, 2007

Source: IHS Global Insight



Mode Split, Domestic O-D Tonnage, 2007

Source: IHS Global Insight



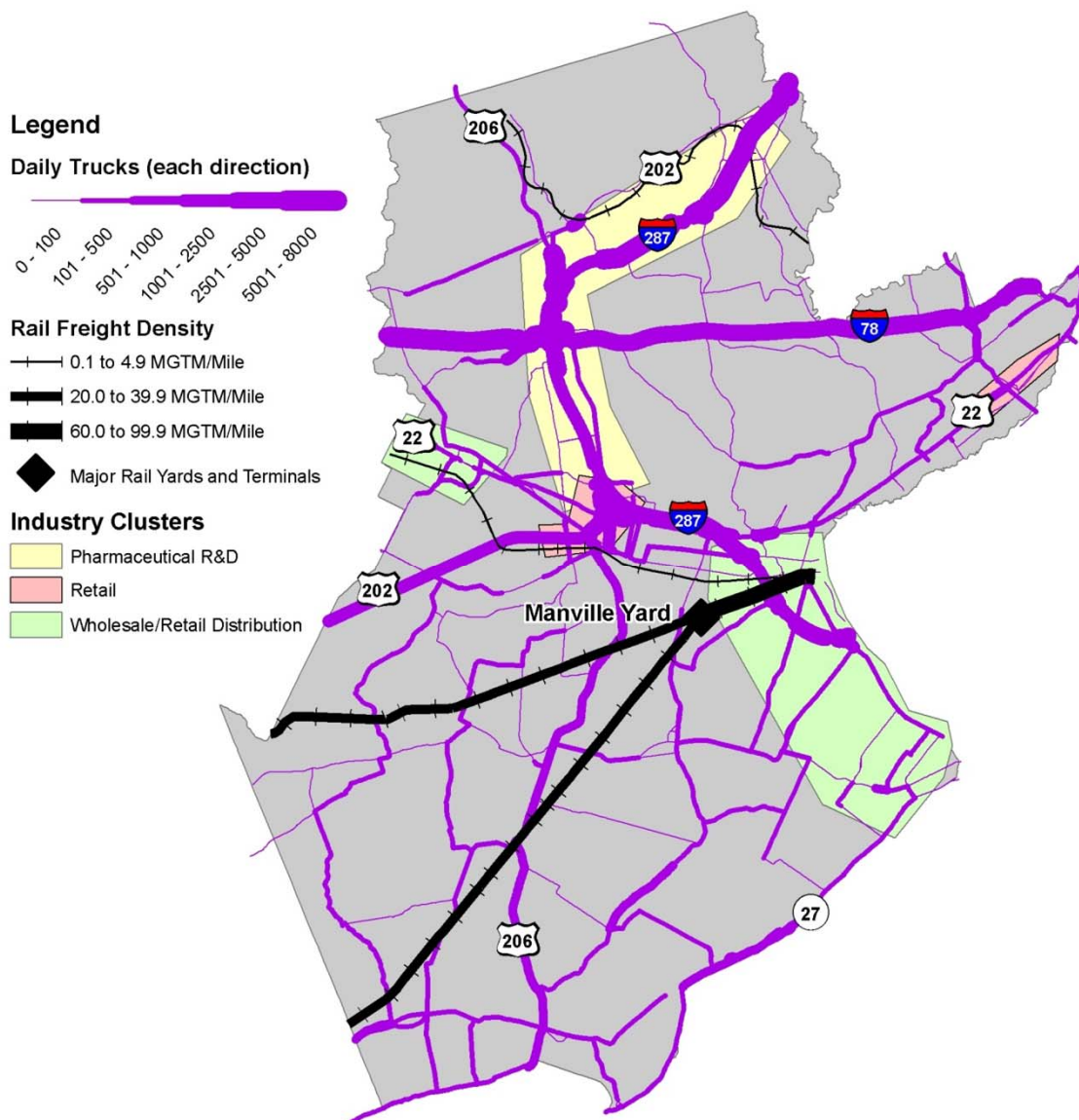
Highway and Rail Network Utilization

Somerset 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. Interstate 78, which runs the breadth of the County, accommodates more than 10,000 trucks per day, while portions of I-287 and US 202/206 carry more than 5,000 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.).

On the rail network, the Conrail Lehigh Line, east of Manville Yard, carried between 60 and 99.9 million gross ton-miles per mile (MGTM/Mile) in 2010. South and west of Manville Yard, the NS Lehigh Line and the CSX West Trenton Line each carried between 20 and 39.9 MGTM/Mile. The map below illustrates how the highway and rail networks and terminals align with industrial activity clusters.

Commodity Truck and Rail Flows in Somerset County, 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)

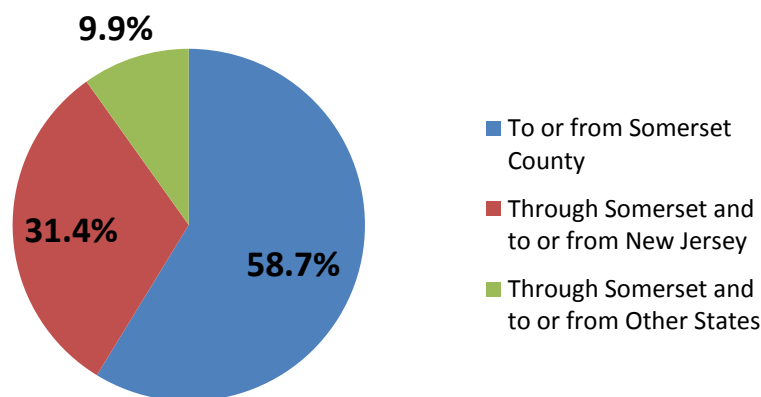


Highway Link Analysis

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 Somerset County, including Interstates 78 and 287 and US Routes 22, 202 and 206, the average values of internal and through traffic are shown in the graph to the right.

Truck Trips on Somerset County Highway Links, 2007

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



About 59% of truck trips on the selected highways in Somerset County were traveling to or from a point in the County. About 31% were traveling through Somerset County on their way to or from a location elsewhere in New Jersey. About 10% of trucks on these highways were traveling through Somerset County between origin or destination points outside the State of New Jersey.

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, there are 121 manufacturing buildings located in the County. Some of these buildings are associated with research and development activities rather than manufacturing of consumer products. Manufacturing buildings are clustered mainly along the Route 22, Route 202 and Route 206 corridors in central Somerset County. Clusters in Manville and eastern Franklin Twp. are also distinguishable. Nearly 300 warehousing/distribution buildings are located within the County, and are clustered in parts of Bridgewater, Branchburg, Franklin, Hillsborough townships as well as Manville, Raritan, and Somerville.

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, 244 facilities in Somerset County receive nearly 3.1 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 and international cargo moves are not classified as "commodity moves" in the source data.

Top 5 Facilities by Inbound/Outbound Tonnage, 2007

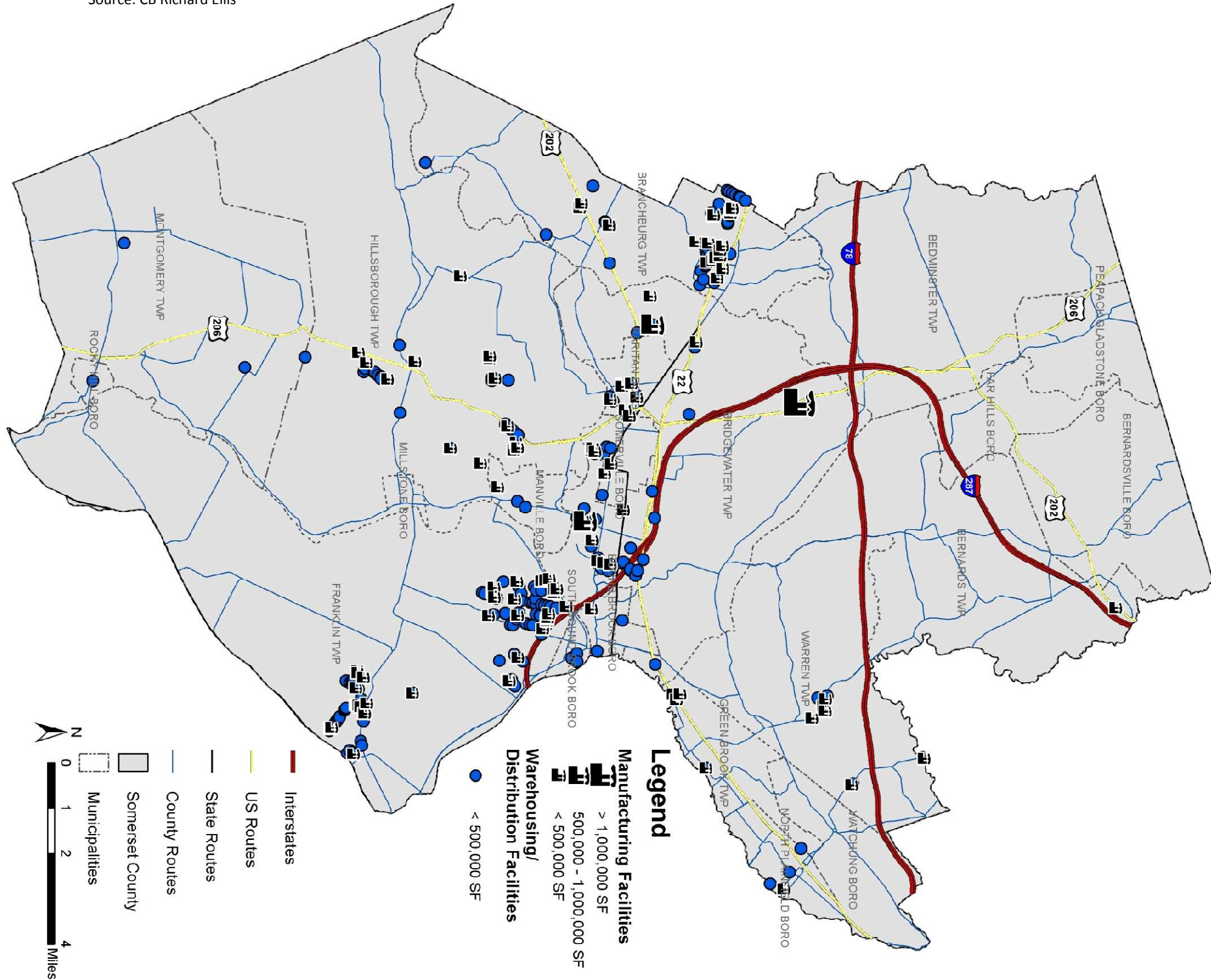
Source: IHS Global Insight Freight Locator Database

COMPANY NAME	CITY	INBOUND TONS
L'OREAL USA INC	SOMERSET	855,896
ROCHE MOLECULAR SYSTEMS	BRANCBURG	254,191
OTICON INC	SOMERSET	187,327
CENTOCOR ORTHO BIOTECH	BRIDGEWATER	87,954
WB WOOD	BASKING RIDGE	86,854

COMPANY NAME	CITY	OUTBOUND TONS
MID-STATE LUMBER CORP	BRANCBURG	1,450,211
TRAP ROCK INDUSTRIES INC	KINGSTON	1,154,421
WELDON CONCRETE CORP	WATCHUNG	297,438
L'OREAL USA INC	SOMERSET	290,126
CLARIANT CORP	BRANCBURG	163,950

Industrial Buildings by Type and Square Footage, 2010

Source: CB Richard Ellis

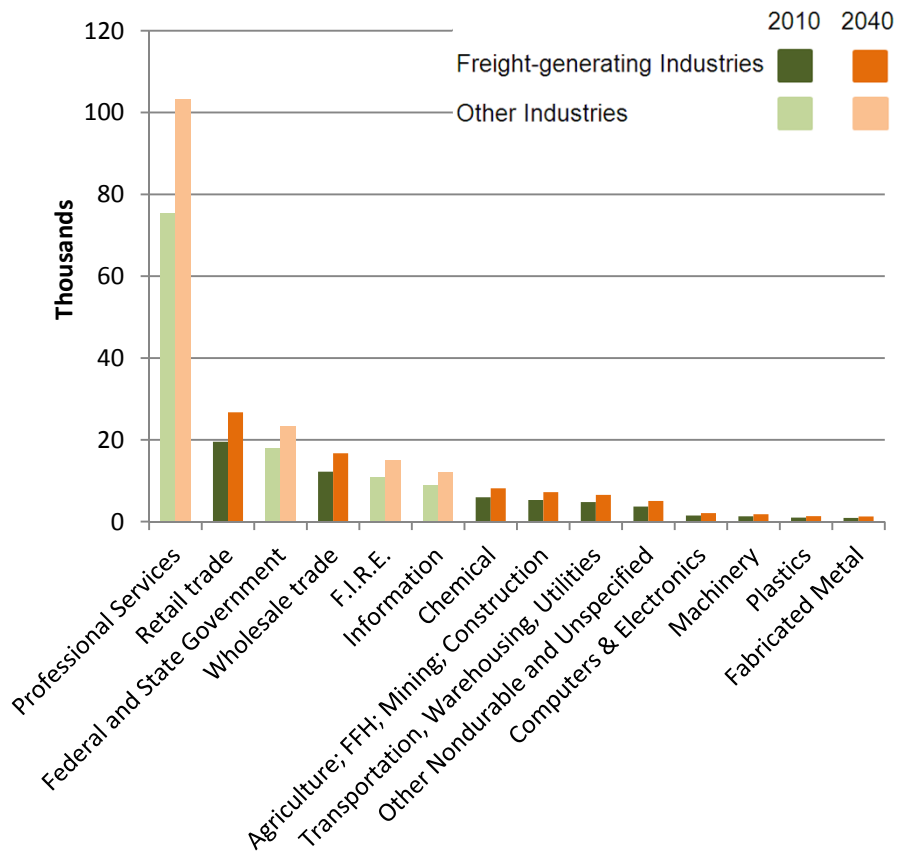


EMPLOYMENT FORECAST

Between 2010 and 2040, non-farm employment in Somerset County is expected to grow by 36%, from 169,600 to 230,800. Employment in freight-intensive industries is expected to grow by 37% during the forecast period, compared to 36% for other industries. The slightly faster-growing freight-intensive industries will compose essentially the same share of the County's employment in the future (33.3% in 2040, compared to 33.1% in 2010). Among individual industry groups, retail trade, wholesale trade, professional services, finance/insurance/real estate, information, and transportation and warehousing are expected to grow fastest (37%), while Federal and State government employment is expected to grow slowest at 30%.

Industry Employment Forecast, 2010 - 2040

Source: R/ECON



2040 COMMODITY FLOWS

By 2040, overall commodity flows into, out of, and within Somerset County are expected to have increased by about 61%, from 32.9 million tons to 52.8 million tons (a difference of 19.9 million tons). Nonmetallic minerals is expected to remain the number one commodity transported in Somerset County by tonnage, followed by warehouse and distribution center traffic, and chemicals or allied products. Growth rates for most commodity groups are expected to range from 59% to 64%.

Top 10 Commodities by Tonnage, 2040

Sources: Cambridge Systematics, with data from IHS Global Insight

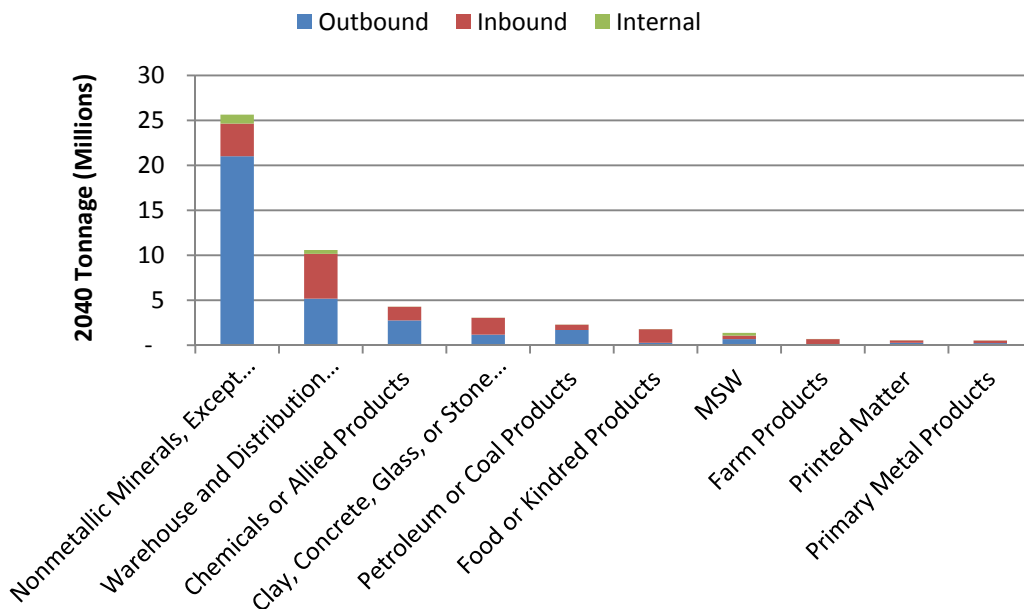
Commodity	2007 Tons	2040 Tons	Difference	Growth Rate
Nonmetallic Minerals, Except Fuels	16,067,123	25,632,818	9,565,695	60%
Warehouse and Distribution Center	6,646,038	10,589,173	3,943,134	59%
Chemicals or Allied Products	2,617,462	4,273,689	1,656,227	63%
Clay, Concrete, Glass, or Stone Products	1,877,006	3,049,480	1,172,474	62%
Petroleum or Coal Products	1,412,472	2,284,474	872,001	62%
Food or Kindred Products	1,079,871	1,768,240	688,369	64%
MSW	833,485	1,359,027	525,542	63%
Farm Products	420,230	689,485	269,255	64%
Printed Matter	324,009	523,924	199,915	62%
Primary Metal Products	310,264	505,612	195,347	63%

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 80% of nonmetallic minerals tonnage will be moving outbound from Somerset County. Warehouse/distribution center traffic will be fairly balanced between inbound and outbound moves. Chemicals, petroleum and coal and municipal solid waste (MSW) will be moving primarily in the outbound direction, while clay/concrete/glass/stone, food, farm products, printed matter and primary metal products will move primarily inbound.

Top 10 Commodities by Tonnage by Direction, 2040

Sources: Cambridge Systematics, with data from IHS Global Insight

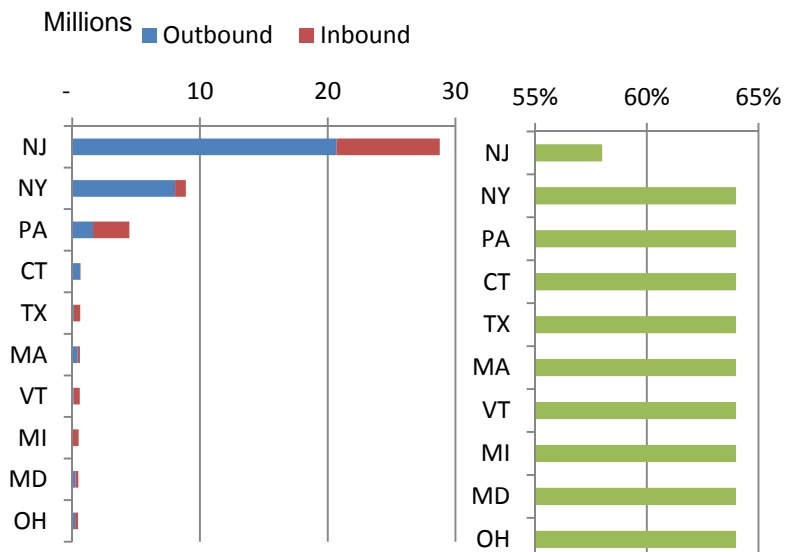


Future Trading Partners

Somerset County's largest trading partners will continue to be New Jersey, New York, and Pennsylvania. Most of the trade with New York will be outbound moves consisting largely of nonmetallic minerals. Trade with Pennsylvania, Texas, the Midwest and Vermont will be mostly in the inbound direction. Trade with locations outside of New Jersey is expected to grow faster than intrastate trade. Growth in trade among other States is expected to grow at a fairly even rate of 64% across the board. Intrastate trade is expected to grow by about 59% between 2007 and 2040.

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

Source: Cambridge Systematics, with data from IHS Global Insight

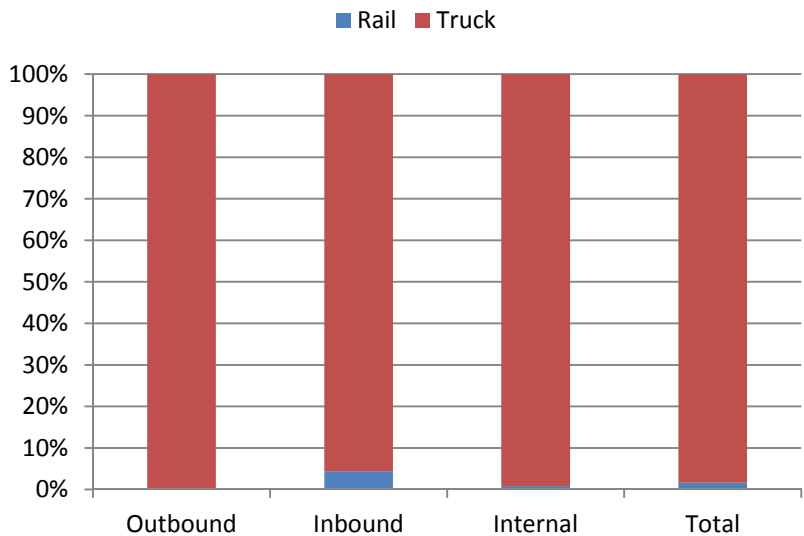


Future Mode Utilization

The forecast anticipates that freight mode splits in 2040 will be identical to 2007 mode splits. Trucks are expected to carry 98% of all freight tons, while rail is expected to carry 2% of freight, mostly in the inbound direction. Rail will carry about 4.4% of inbound freight. Trucks will have the largest share of movement in all directions.

Freight Tonnage by Mode and Direction, 2040

Source: Cambridge Systematics, with data from IHS Global Insight



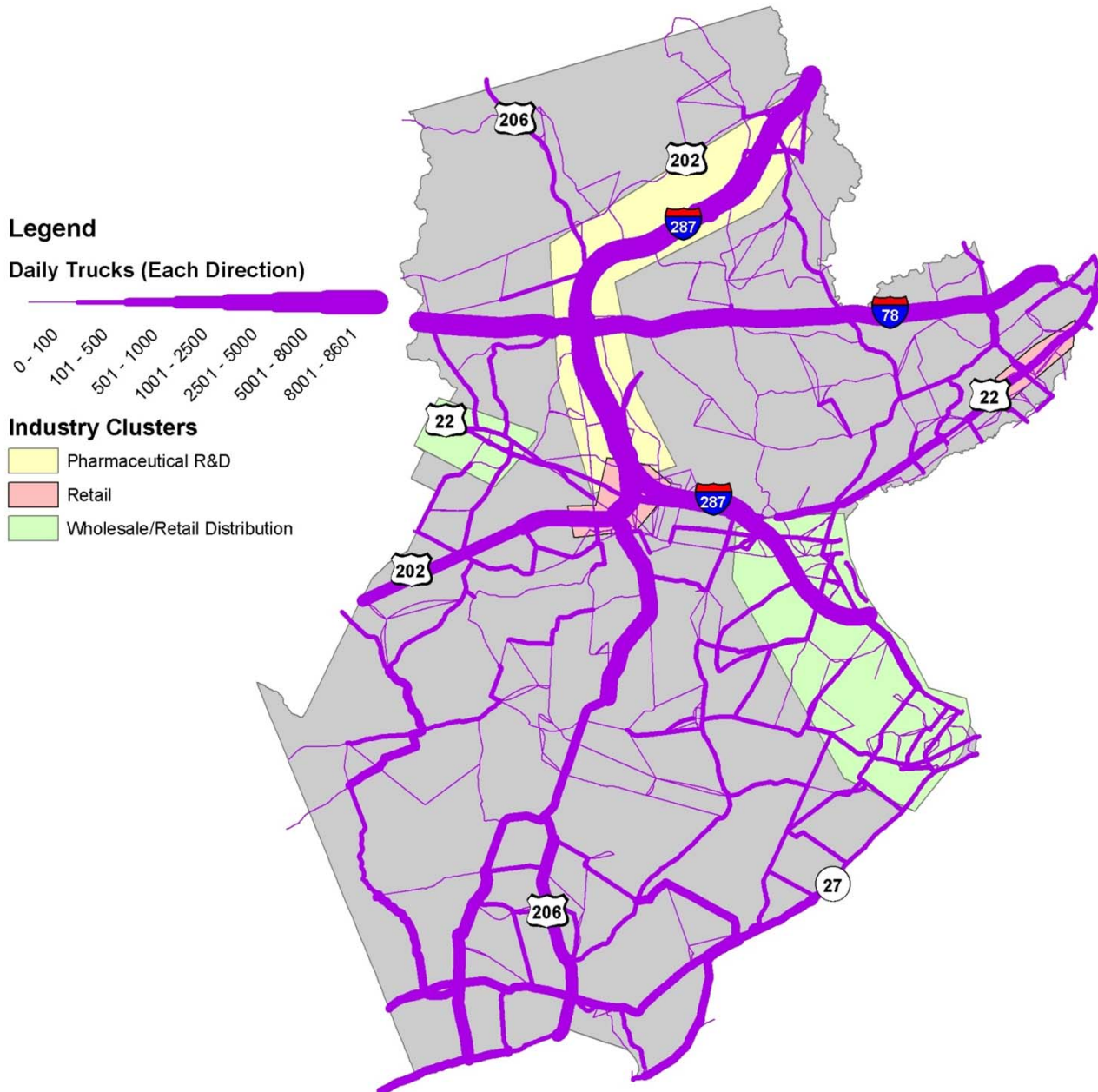
Future Highway Network Utilization

In 2040, Somerset 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 Interstates 78 and 287 are expected to increase by nearly 1,000 trucks per day. Portions of Routes 202 and 206 are expected to see numeric increases of between 500 and 1,000 daily trucks during the forecast period.

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

Commodity Truck Flows in Somerset 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, Middlesex, 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.

Somerset County’s representative on the NJTPA Board of Trustees is Freeholder Peter S. Palmer, who also serves as Chairman of the Freight Initiatives Committee.

ABOUT THIS STUDY

This Profile is one component of a major NJTPA freight planning initiative – the development of Year 2040 Freight Industry Level Forecasts.

Freight issues are extremely important 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 the region’s residents and 20 million in the larger 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, covering the 13 counties of the NJTPA region, 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.