

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

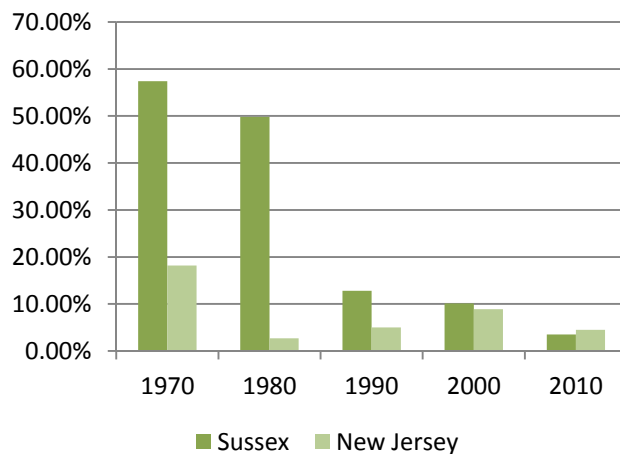
With a 2010 population of 149,265, Sussex is the 17th most populated County in the State of New Jersey and 11th in the NJTPA region. Sussex County has historically outpaced the State in population growth, until the 2000s. The County's median household income is higher than that of the State overall. Unlike the State and most NJTPA counties, Sussex County's household income (in constant 2010 dollars) increased after the 2008 recession, reflecting growing affluence in Sussex County relative to the rest of the State.

Sussex County is home to...

- 149,265 people
- 8,174 businesses that employ 45,000 people; 28% of these jobs are in businesses that are highly dependent on freight movement
- About 40 warehousing/distribution buildings and 12 manufacturing buildings
- About 7.3 million tons of domestic freight shipped or received annually
- Interstate, State and County highways used by thousands of trucks every day
- New York, Susquehanna & Western Railroad

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 45,000 people in more than 8,000 establishments. About 28% are employed in "freight intensive" industries, such as construction, manufacturing, mining and extraction, retail trade, wholesale trade, and logistics. About 72% are employed in industries that may generate freight, but are less dependent on freight movement.

FREIGHT FLOWS

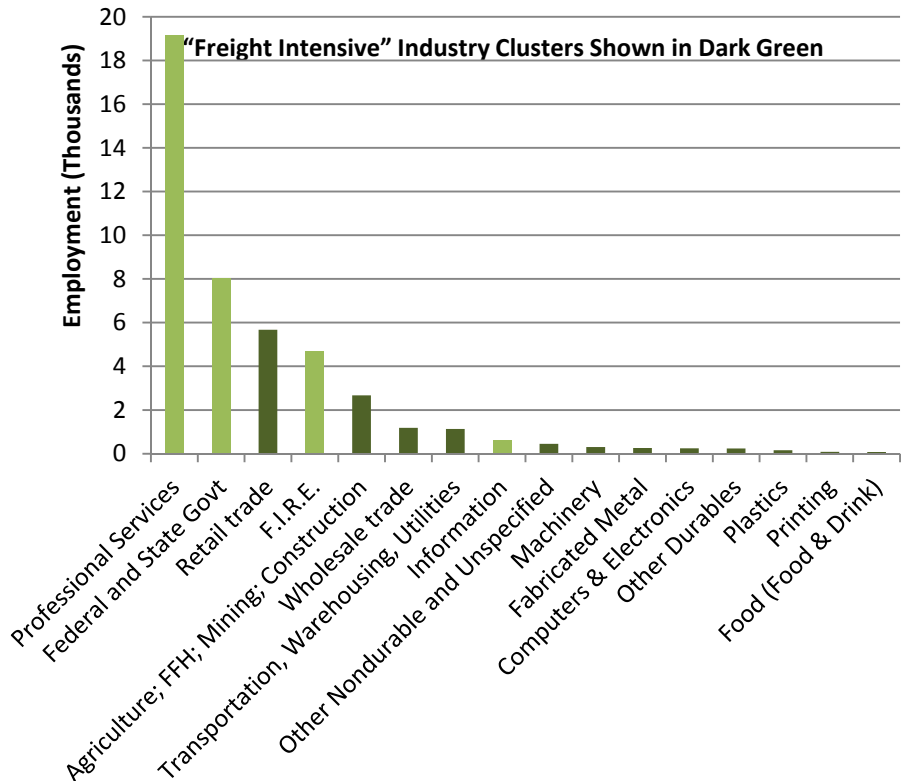
In 2007, approximately 7.3 million tons of domestic freight moved into, out of, or within Sussex County, by all modes of transportation (truck, rail, water, and air). This figure includes commodities moving into or out of Sussex County, but excludes pass-through tonnage. (The movement of international cargo to and from seaports, airports, and border crossings is captured and counted as domestic tonnage.)

Commodities

For domestic O-D tonnage, around 68% consisted of nonmetallic minerals, most of which moved in the outbound direction. Indeed, outbound flows of nonmetallic minerals account for more than half of all commodity moves. Other leading commodities include clay/concrete/glass/stone, which also moves primarily outbound; inbound flows of food, chemicals, and consumer goods moving to or from warehouses or distribution centers. Municipal solid waste (MSW) is moved primarily within the County's borders.

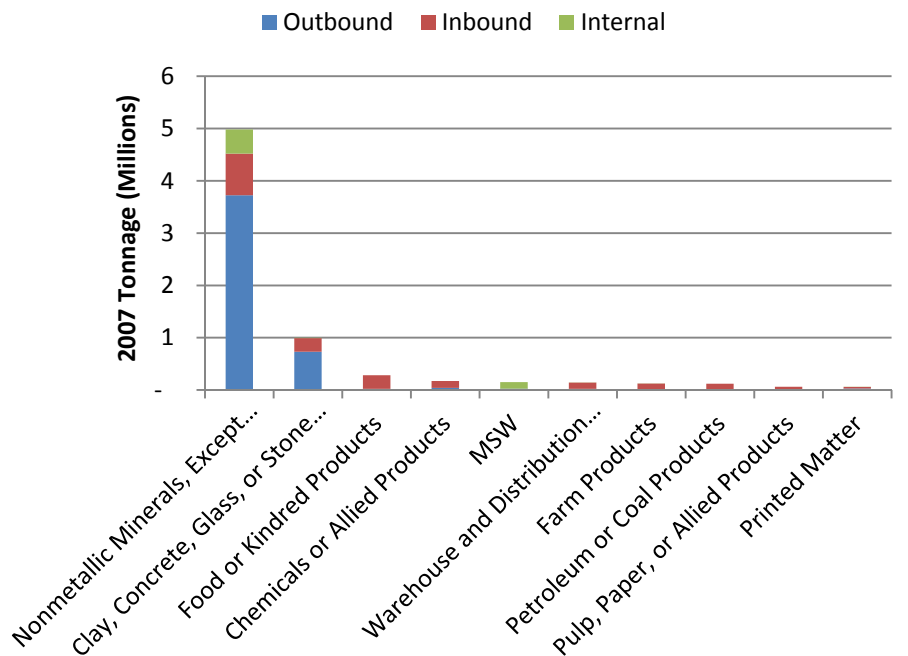
Employment by Industry, 2010

Source: R/ECON



Domestic O-D Commodities by Tonnage, 2007

Source: IHS Global Insight



Trading Partners

Sussex County'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 and destinations of outbound freight. Beyond New Jersey, New York exchanges nearly 2 million tons of freight with Sussex County, about 88% of which moved in the outbound direction. Pennsylvania and Canada are Sussex County's third and fourth largest trading partners by tonnage, most of which travels inbound.

FREIGHT TRANSPORTATION NETWORKS

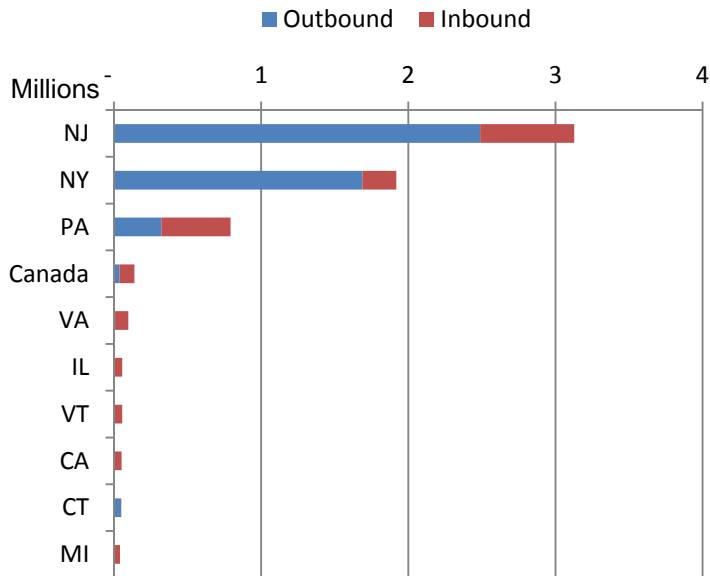
Freight can be handled by truck, rail, air or water. The choice of mode depends on a variety of factors, including: length of trip (rail and air are more competitive at longer distances), commodity type (rail and water are more competitive for heavy materials), time sensitivity (truck and air are most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

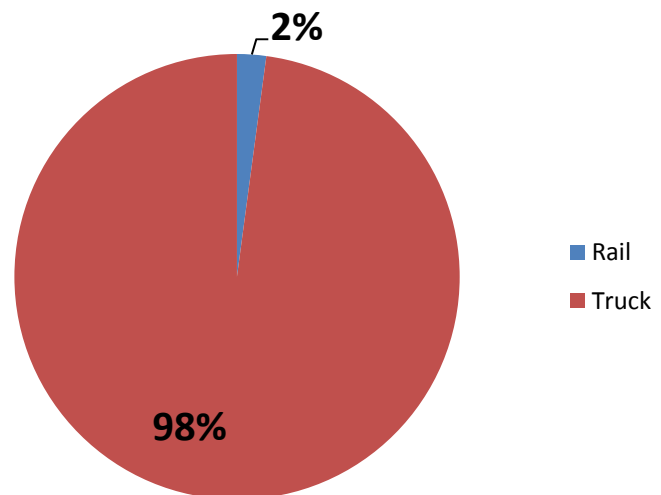
Top Origins and Destinations of Domestic O-D Freight Tonnage, 2007

Source: IHS Global Insight



Mode Split, Domestic O-D Tonnage, 2007

Source: IHS Global Insight



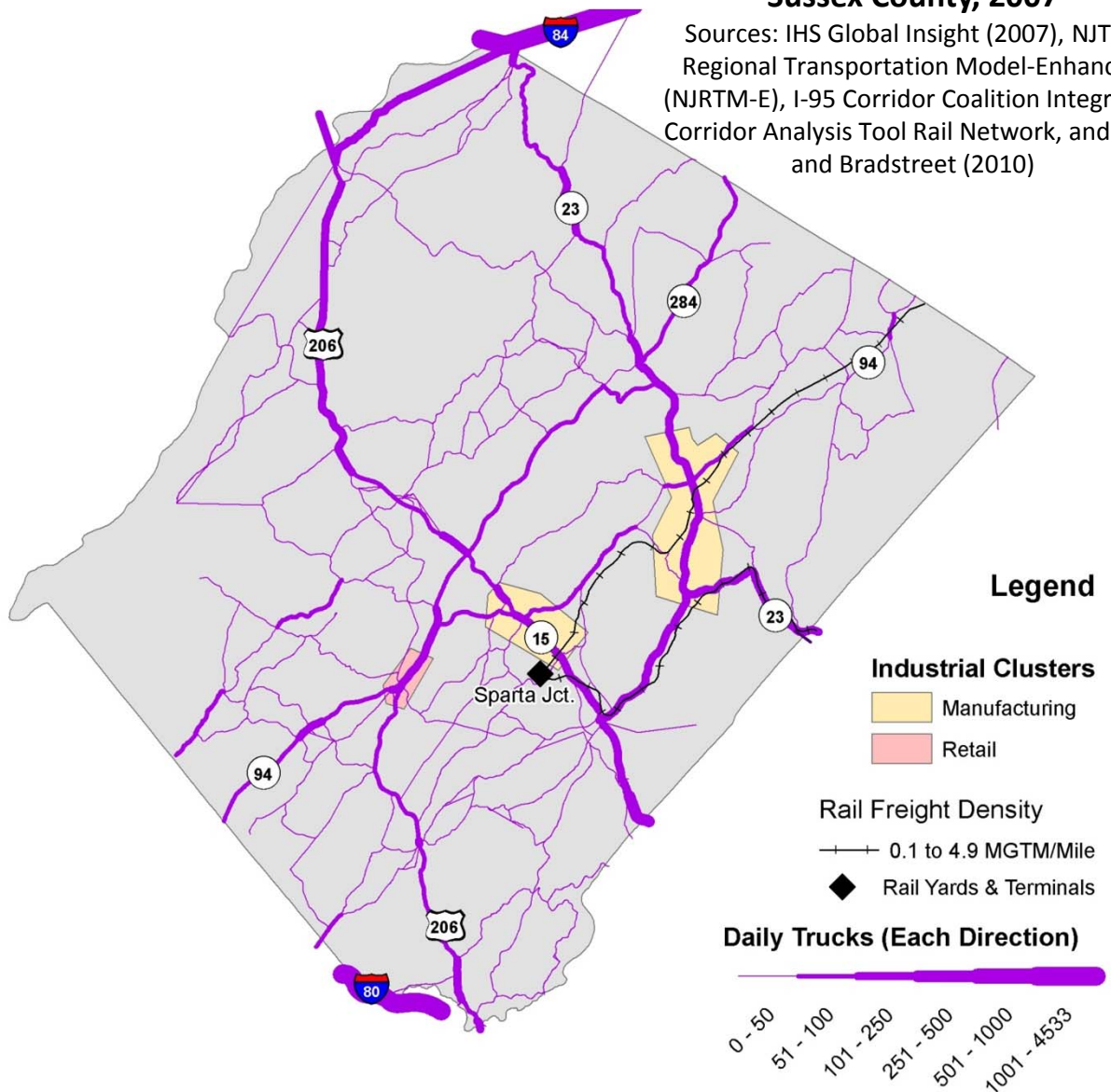
Highway and Rail Network Utilization

Sussex 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 crosses a small portion of southern Sussex County, carry about 9,000 trucks daily. Similar truck volumes are accommodated on Interstate 84, outside of, but immediately adjacent to, Sussex County. Portions of US Route 206, NJ Route 15, and NJ Route 23 accommodate between 500 and 1000 daily trucks. 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.).

Freight rail service operates in the eastern half of the County along the New York, Susquehanna, and Western (NYSW) Railroad. A rail yard serving a local quarry is located at Sparta Junction. The map below illustrates how the highway and rail networks and terminals align with industrial activity clusters.

Commodity Truck and Rail Flows in Sussex 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)

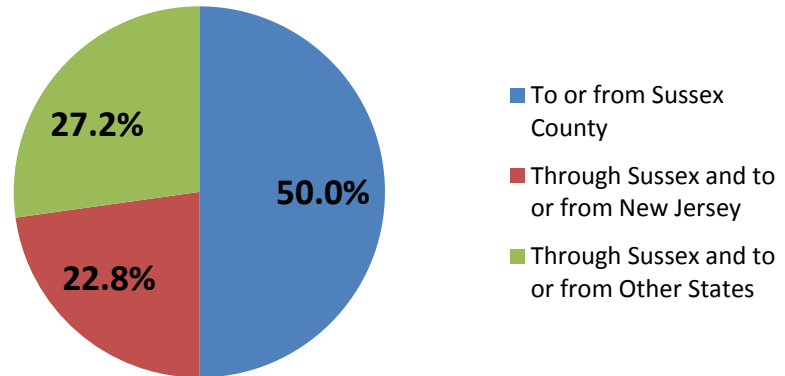


Highway Link Analysis

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 Sussex County, including Interstate 80 and US Route 206, the average values of internal and through traffic are shown in the graph to the right.

Truck Trips on Sussex County Highway Links, 2007

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



Half of the truck trips on the selected highways in Sussex County were traveling to or from a point located within the County. About 27% were traveling through the County on their way between origins or destinations outside the State of New Jersey. About 23% were traveling through Sussex County on their way to or from a point elsewhere in New Jersey.

Industrial Buildings Inventory

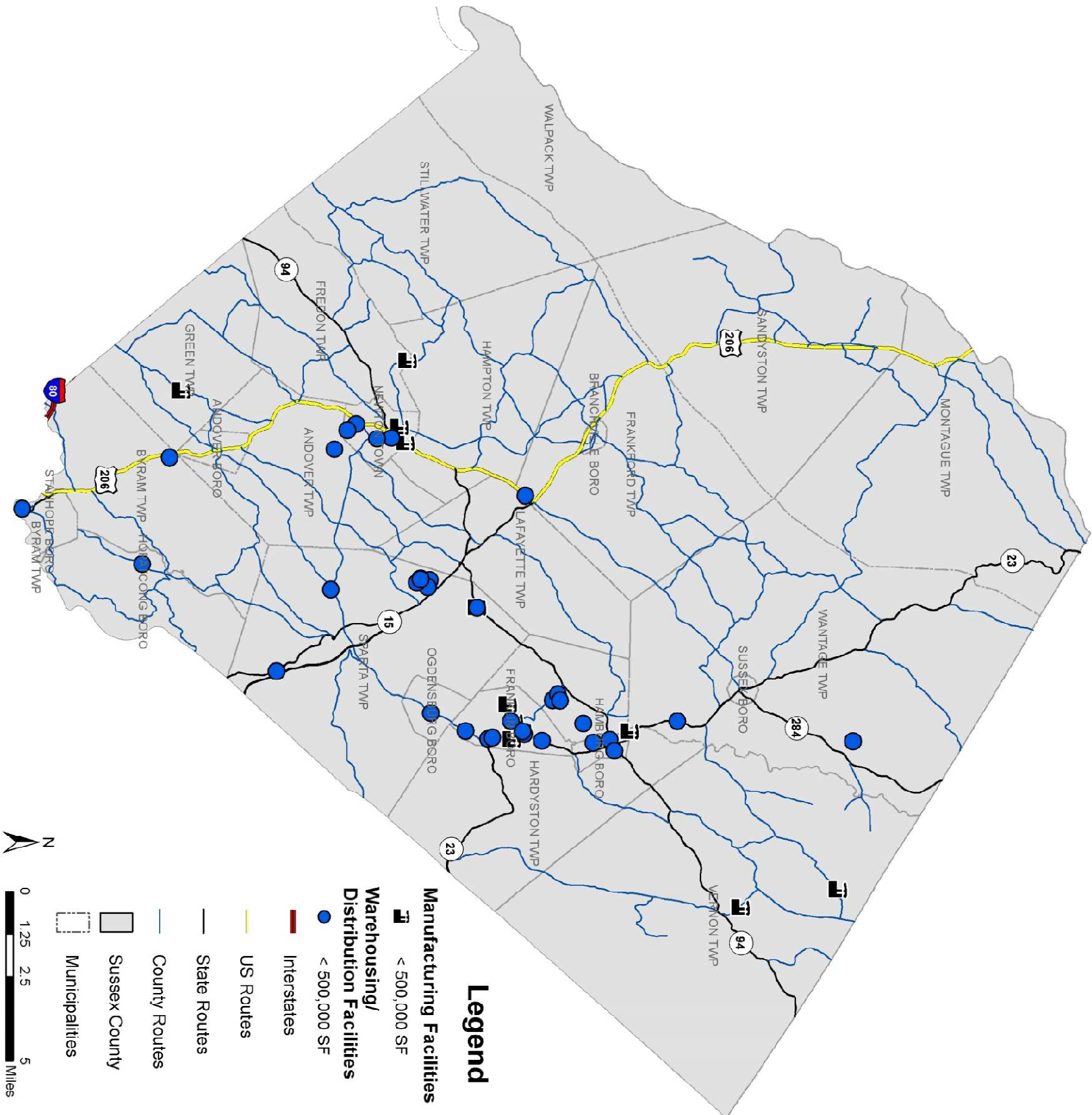
Freight-generating industries are supported by industrial buildings. The location of these buildings often depends on transportation access, and their uses may be significant generators of freight traffic. As illustrated on Pages 6 and 7, there are 12 manufacturing buildings located in the County, with two small clusters located in Newton and Franklin. About 40 warehousing/distribution buildings are located within the County. These buildings are mostly clustered along the US Route 206, NJ Route 15, NJ Route 23, NJ Route 94, and County Route 517 corridors. All of the warehousing/distribution buildings are under 500,000 square feet in size.

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, 73 facilities in Sussex County receive more than 175,000 tons and ship 333,000 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
FREDERICKS FUEL & HEATING	SPARTA	43,174
RAIDER EXPRESS	ANDOVER	17,656
NEWCO INC	BUTLER	17,375
SUTHERLAND PACKAGING	ANDOVER	11,164
NORTH AMERICAN STERILIZATION	FRANKLIN	10,171
COMPANY NAME	CITY	OUTBOUND TONS
SPARTA READY-MIX	LAFAYETTE	54,437
SUSSEX BLOCK & SUPPLY INC	SPARTA	37,900
NEWCO INC	BUTLER	28,996
SUTHERLAND PACKAGING	ANDOVER	26,084
COUNTY CONCRETE CORP	SUSSEX	22,935



Industrial Buildings by Type and Square Footage, 2010

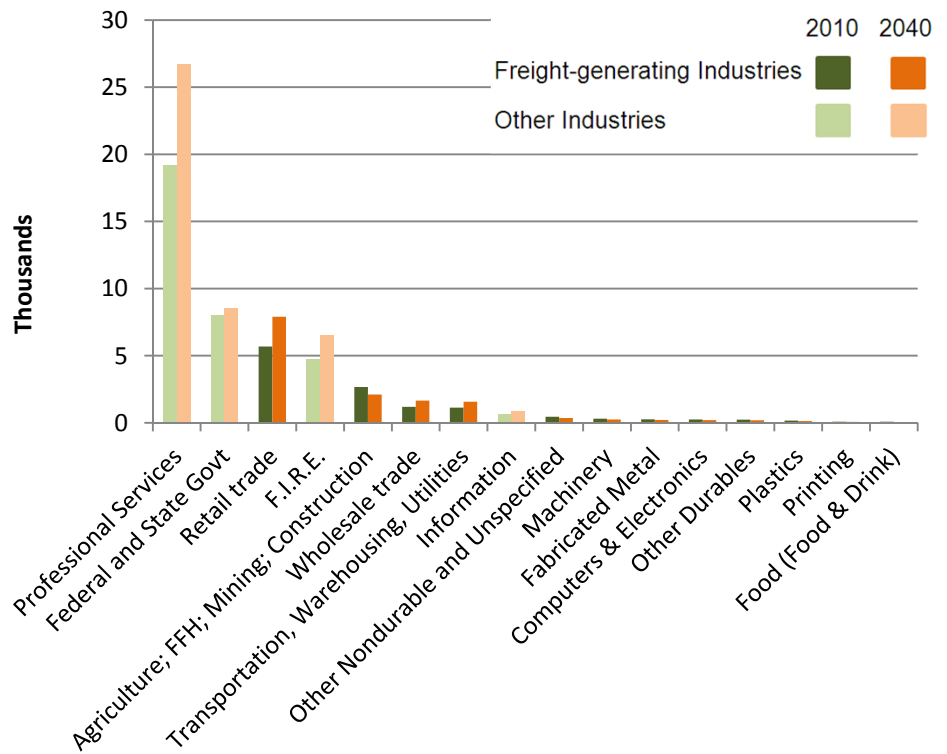
Source: CB Richard Ellis

EMPLOYMENT FORECAST

Between 2010 and 2040, non-farm employment in Sussex County is expected to grow by 27%, from 45,000 to 57,300. Employment in freight-intensive industries is expected to grow by 17% during the forecast period, compared to 31% for other industries. The faster-growing services, finance, insurance, real estate, and other less freight-intensive industries, will make up a larger share of the County's employment in the future (74% in 2040, compared to 72% in 2010). Among individual industry groups, professional services is expected to experience the greatest numeric growth in employment (7,500 jobs). There could be about 600 fewer jobs in agriculture, mining, and construction in 2040.

Industry Employment Forecast, 2010 - 2040

Source: R/ECON



2040 COMMODITY FLOWS

By 2040, overall commodity flows into, out of, and within Sussex County are expected to have increased by about 12%, from 7.3 million tons to 8.2 million tons (a difference of 900,000 tons). Nonmetallic minerals is expected to remain the number one commodity transported in Sussex County by tonnage, followed by, clay/concrete/glass/stone, and food. Nonmetallic minerals will make up a smaller share of overall tonnage (60% in 2040 compared to 68% in 2007), due to faster growth among other commodities.

Top 10 Commodities by Tonnage, 2040

Sources: Cambridge Systematics, with data from IHS Global Insight

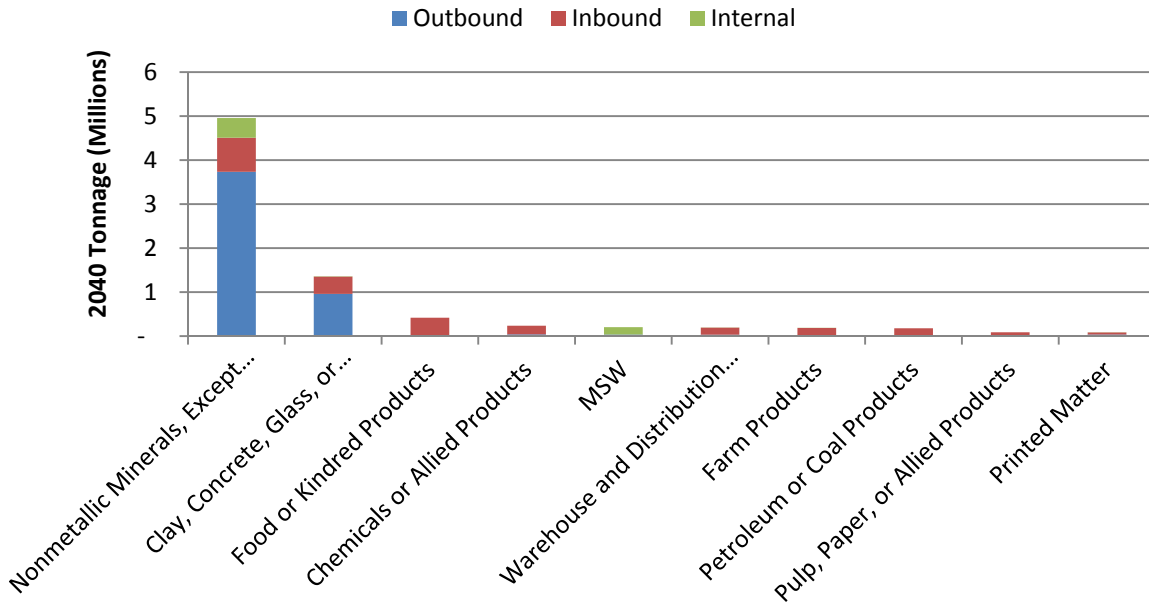
Commodity	2007 Tons	2040 Tons	Difference	Growth Rate
Nonmetallic Minerals, Except Fuels	4,982,848	4,957,767	-25,081	-1%
Clay, Concrete, Glass, or Stone Products	997,702	1,359,783	362,081	36%
Food or Kindred Products	283,616	417,503	133,887	47%
Chemicals or Allied Products	173,337	238,358	65,021	38%
MSW	151,145	203,566	52,421	35%
Warehouse and Distribution Center	140,328	192,237	51,909	37%
Farm Products	124,395	189,439	65,044	52%
Petroleum or Coal Products	118,939	178,735	59,797	50%
Pulp, Paper, or Allied Products	61,556	87,987	26,431	43%
Printed Matter	59,839	84,032	24,193	40%

Commodity Volumes and Direction

The directional movement of shipments containing the top ten commodities is expected to remain fairly constant as well, though the more robust growth among inbound commodities should change the overall directional split. In 2040, 61% of all tonnage is expected to move outbound, compared to 64% in 2007. Inbound shipments will compose 31% of all tonnage in 2040, compared to 28% in 2007. Intra-county tonnage is expected to increase by 30,000 tons during the forecast period, but maintain a share of about 8%.

Top 10 Commodities by Tonnage by Direction, 2040

Sources: Cambridge Systematics, with data from IHS Global Insight

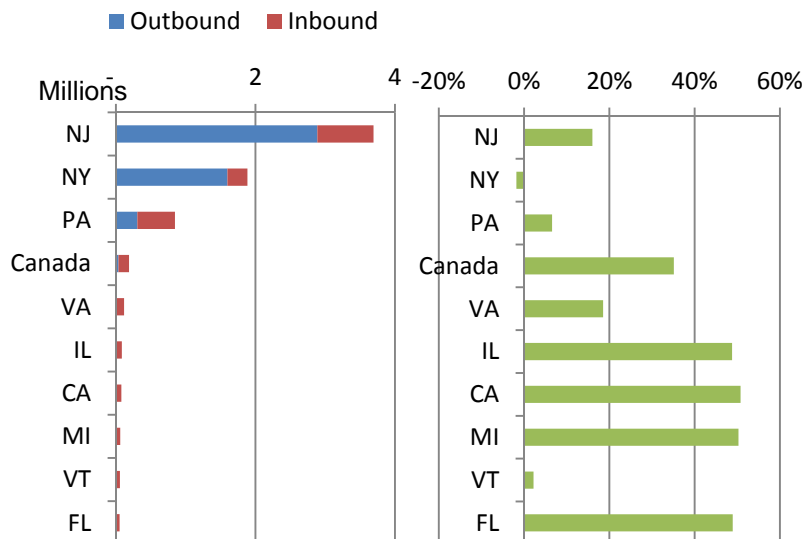


Trading Partners by 2040 Tonnage (Left) and 2007-2040 Growth (Right)

Source: Cambridge Systematics, with data from IHS Global Insight

Future Trading Partners

Sussex County's largest trading partners will continue to be other New Jersey counties, followed by New York and Pennsylvania. Relatively low growth rate in trade with Vermont and a loss in trade with New York reflect the anticipated decrease in nonmetallic minerals tonnage during the forecast period. Growth in other commodities, such as food and warehouse and distribution center traffic, should result in faster-growing trade with States in the Midwest, West, and South.

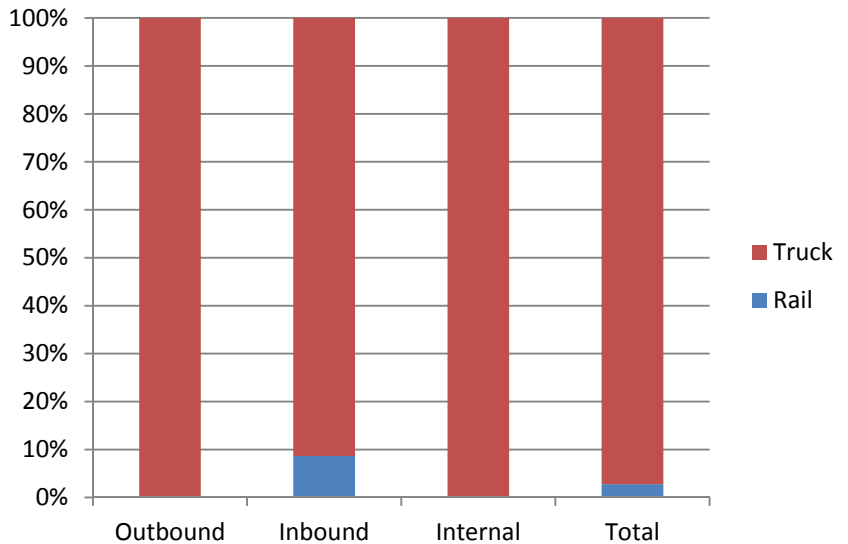


Future Mode Utilization

The forecast anticipates that rail will gain a slightly larger share of the market relative to trucks by 2040 (up from 2.1% in 2007 to 2.8% in 2040). Trucks are expected to carry just over 97% of all freight tons in 2040. Growth in rail will be fueled primarily by increasing inbound freight tonnage, of which rail will carry 9%. Trucks carry close to 100% of outbound and internal freight tonnage.

Freight Tonnage by Mode and Direction, 2040

Source: Cambridge Systematics, with data from IHS Global Insight

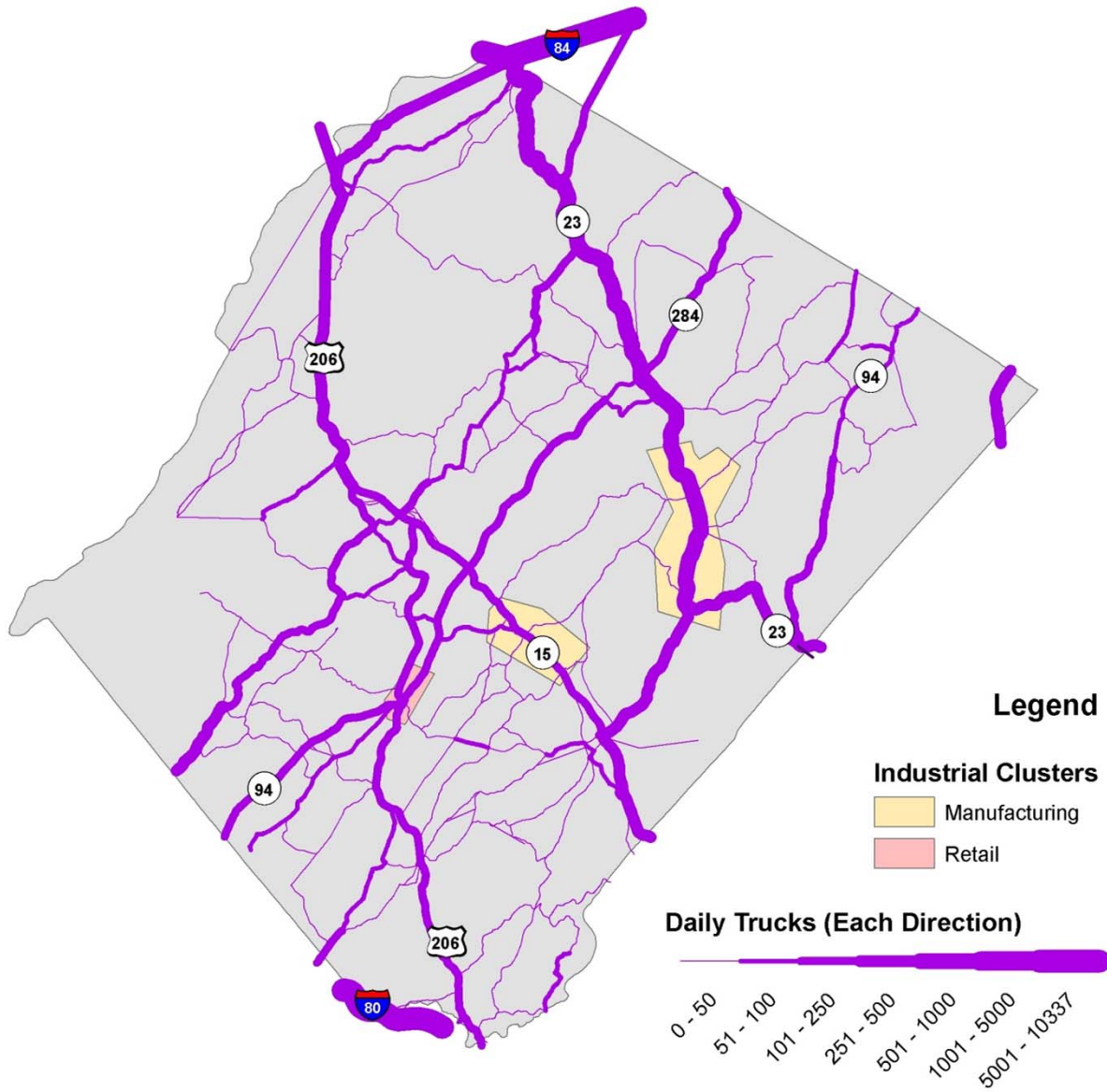

Future Highway Network Utilization

In 2040, Sussex 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 through Sussex County is expected to nearly double to 18,000 trucks per day. Interstate 84 immediately north of the County could carry more than 20,000 trucks in 2040. Truck volumes along NJ Route 23 are expected to grow 2.5 times, totaling nearly 2,000 daily. Portions of US Route 206 and NJ Route 15 are expected to see increases of between 500 and 1,000 trucks per day.

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

Commodity Truck Flows in Sussex 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 and a Citizens' Representative appointed by the Governor.

Sussex County's representative on the NJTPA Board of Trustees is Freeholder Susan M. Zellman.

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.