

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

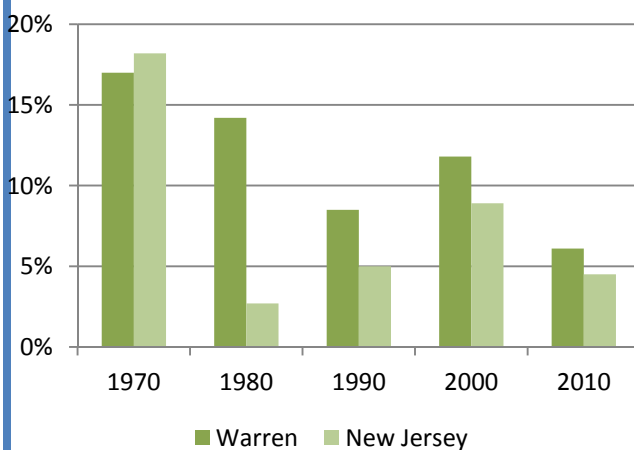
With a 2010 population of 108,692, Warren ranks 13th in population among the 13 NJTPA counties, and 19th among New Jersey's 21 counties. Warren County has historically outpaced the State in population growth and household income, two key drivers of demand for consumer goods. The County's average household income is about 4% higher than that of the State overall. The changes in household income due to the recession were more pronounced in Warren County than the rest of the State over the last decade.

Warren County is home to...

- 108,692 people
- 6,079 businesses that employ 37,300 people; 44% of these jobs are in businesses that are highly dependent on freight movement
- More than 50 warehousing/distribution buildings and 21 manufacturing buildings
- About 10.3 million tons of domestic freight shipped or received annually
- Interstate, State, and County highways used by tens of thousands of trucks every day
- Class I and short line rail service to several major shippers/receivers

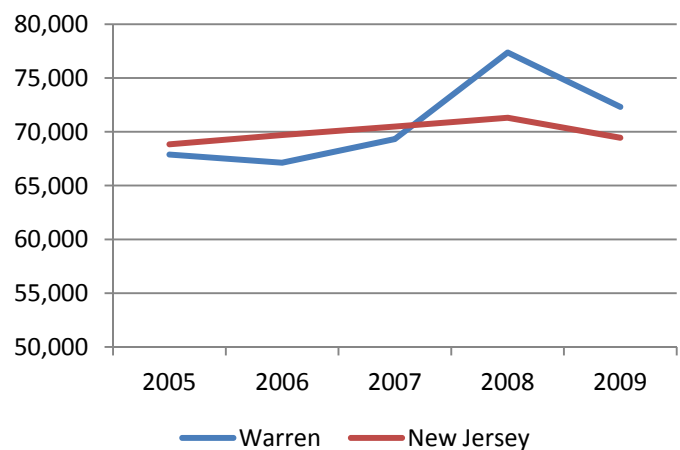
Population Growth by Decade

Source: U.S. Census Bureau



Household Income, Constant 2010 Dollars

Source: U.S. Census Bureau



Employment

The County's economy employs 37,300 people in more than 6,000 establishments. About 44% are employed in "freight-intensive" industries, such as construction, manufacturing, mining and extraction, retail trade, wholesale trade, and logistics. About 56% are employed in industries that may generate freight, but are less dependent on freight movement.

FREIGHT FLOWS

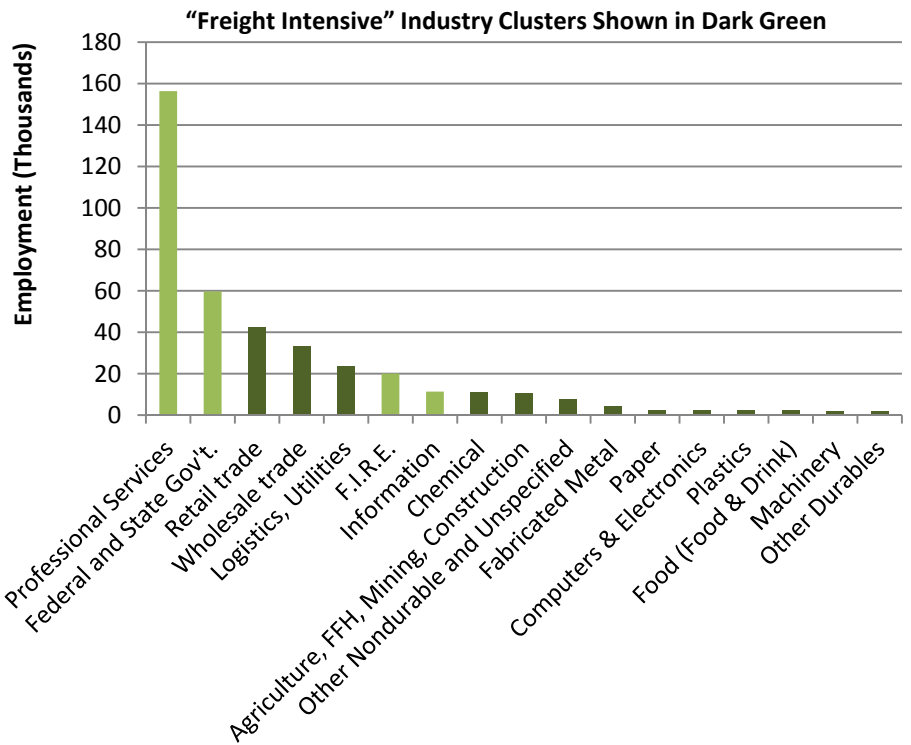
In 2007, approximately 10.3 million tons of domestic freight moved into, out of, or within Warren County, by all modes of transportation (truck, rail, water, and air). This figure includes commodities moving into or out of Warren County, but excludes pass-through tonnage. (The movement of international cargo to and from seaports, airports, and border crossings is captured and counted as domestic tonnage.)

Commodities

For domestic O-D tonnage, around 40% consisted of moves of nonmetallic minerals, much of which were moving in the outbound direction. Chemicals, which are the second largest commodity, also move primarily outbound. Warren County is a net recipient of crude petroleum and natural gas, warehouse and distribution center traffic, and municipal solid waste (MSW).

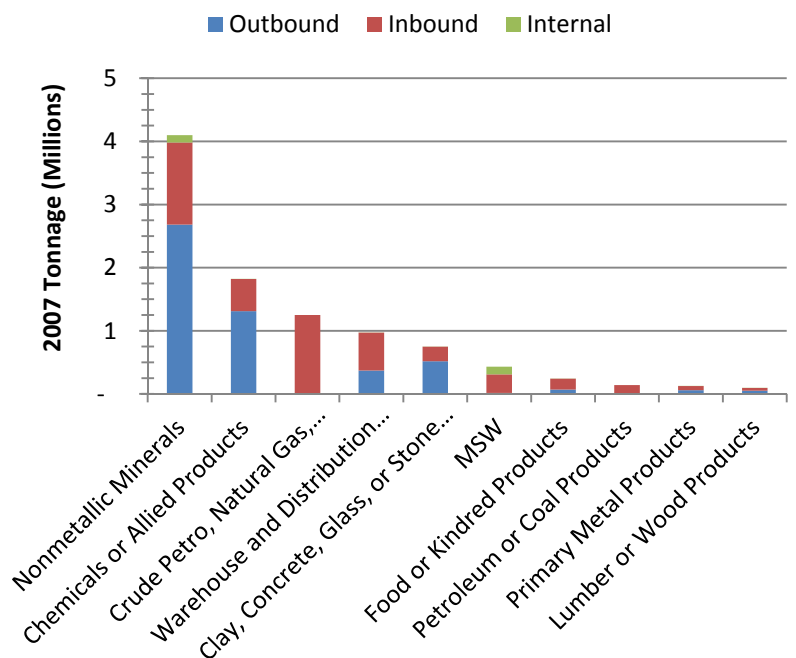
Employment by Industry, 2010

Source: R/ECON



Domestic O-D Commodities by Tonnage, 2007

Source: IHS Global Insight



Trading Partners

Warren is the only County in the NJTPA region in which trade with an out of State trading partner exceeds trade with New Jersey partners. Nearly 3 million tons of freight moved between Warren County and locations in Pennsylvania in 2010, primarily in the outbound direction. Trade with New Jersey partners in 2010 totaled about 2.25 million tons, most of which moved inbound. Inbound trade with Canada and outbound trade with New York State represent Warren County’s third and fourth greatest trade partnerships.

FREIGHT TRANSPORTATION NETWORKS

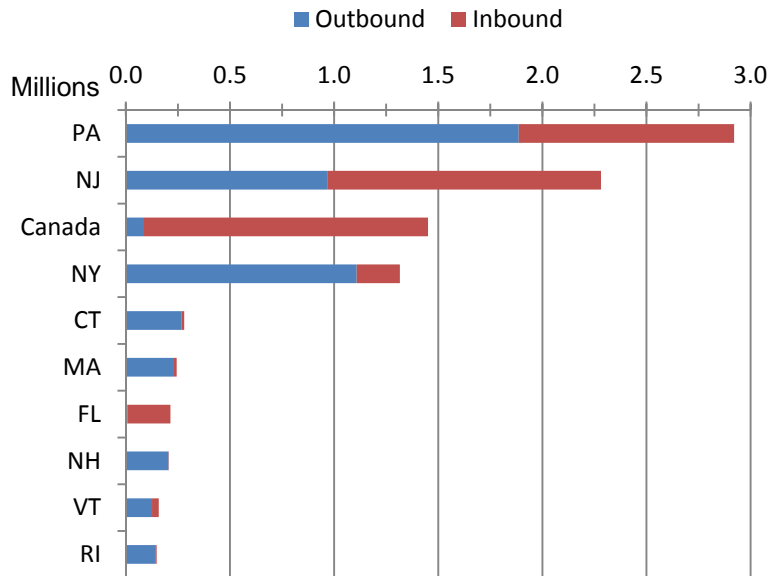
Freight can be handled by truck, rail, air or water. The choice of mode depends on a variety of factors, including: length of trip (rail and air are more competitive at longer distances), commodity type (rail and water are more competitive for heavy materials), time sensitivity (truck and air are most 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 Warren County, 86% travels by truck, primarily to and from warehouses, distribution centers, manufacturing facilities and retail centers. Around 12% travels by pipeline, mostly crude petroleum or natural gas. About 2% arrives or departs by rail.

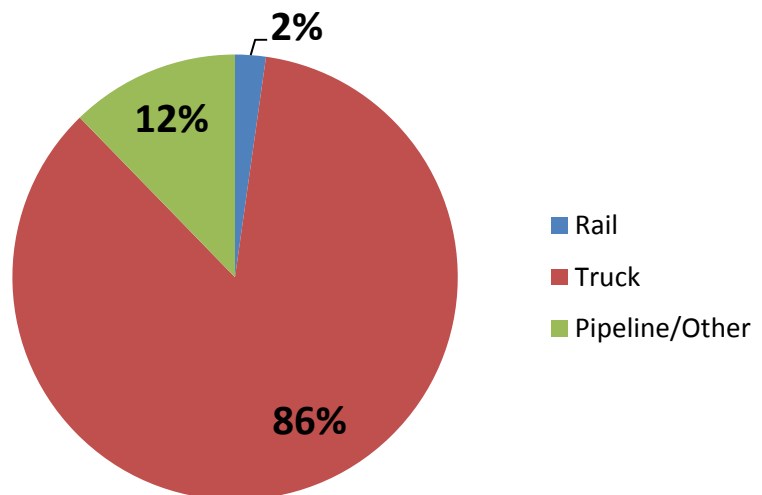
Top Origins and Destinations of Domestic O-D Freight Tonnage, 2007

Source: IHS Global Insight



Mode Split, Domestic O-D Tonnage, 2007

Source: IHS Global Insight



Highway and Rail Network Utilization

Warren 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. Interstates 78 and 80, which traverse the County in the east-to-west direction, each accommodate more than 18,000 trucks per day on some segments, while portions of US Routes 22 and 46, and NJ Routes 31, 57, and 94 carry between 500 and 2,000 trucks per day. Not all trucks on the road are carrying freight. Some are moving empty. Others are providing municipal services (local waste collection, utility services, etc.) or commercial services (contractors, lumber, landscapers, etc.).

On the rail network, the Norfolk Southern Lehigh Line, which runs through the southwestern portion of the County, is one of the most heavily-traveled freight rail lines in the State. The map below illustrates how the highway and rail networks align with industrial activity clusters.

Commodity Truck and Rail Flows in Warren 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)

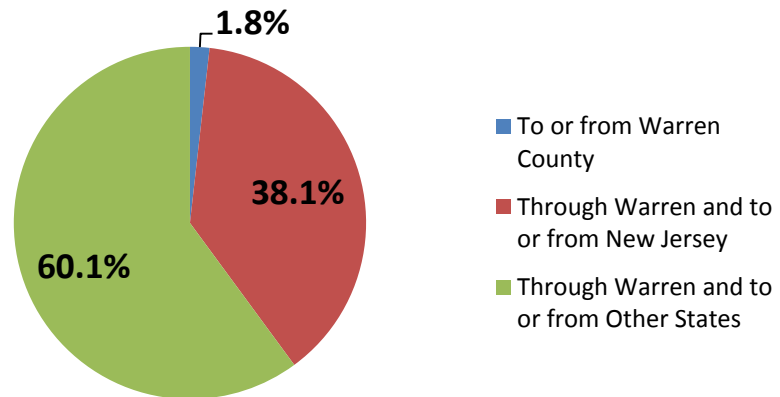


Highway Link Analysis

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 Warren County, including Interstates 78 and 80, the average values of internal and through traffic are shown in the graph to the right.

Truck Trips on Warren County Highway Links, 2007

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



About 60% of truck trips on the selected highways in Warren County were traveling through the County between origins or destinations outside the State of New Jersey. About 38% of trucks on these highways were traveling between origins or destinations in parts of New Jersey outside Warren County. About 2% of trucks traveling on Interstates 78 or 80 in Warren County were on their way to or from a location within the 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, more than 20 manufacturing buildings are located in the County. Two of these buildings are between 500,000 and 1 million square feet in size, and one is over 1 million square feet. Manufacturing buildings tend to be clustered in and around the Phillipsburg/Lopatcong area, Hackettstown, and Washington. More than 50 warehousing/distribution buildings are located within the County. These buildings are all under 500,000 square feet and are clustered along several major highways, including Route 22, Route 31, Route 46 in and near Hackettstown, and Route 57.

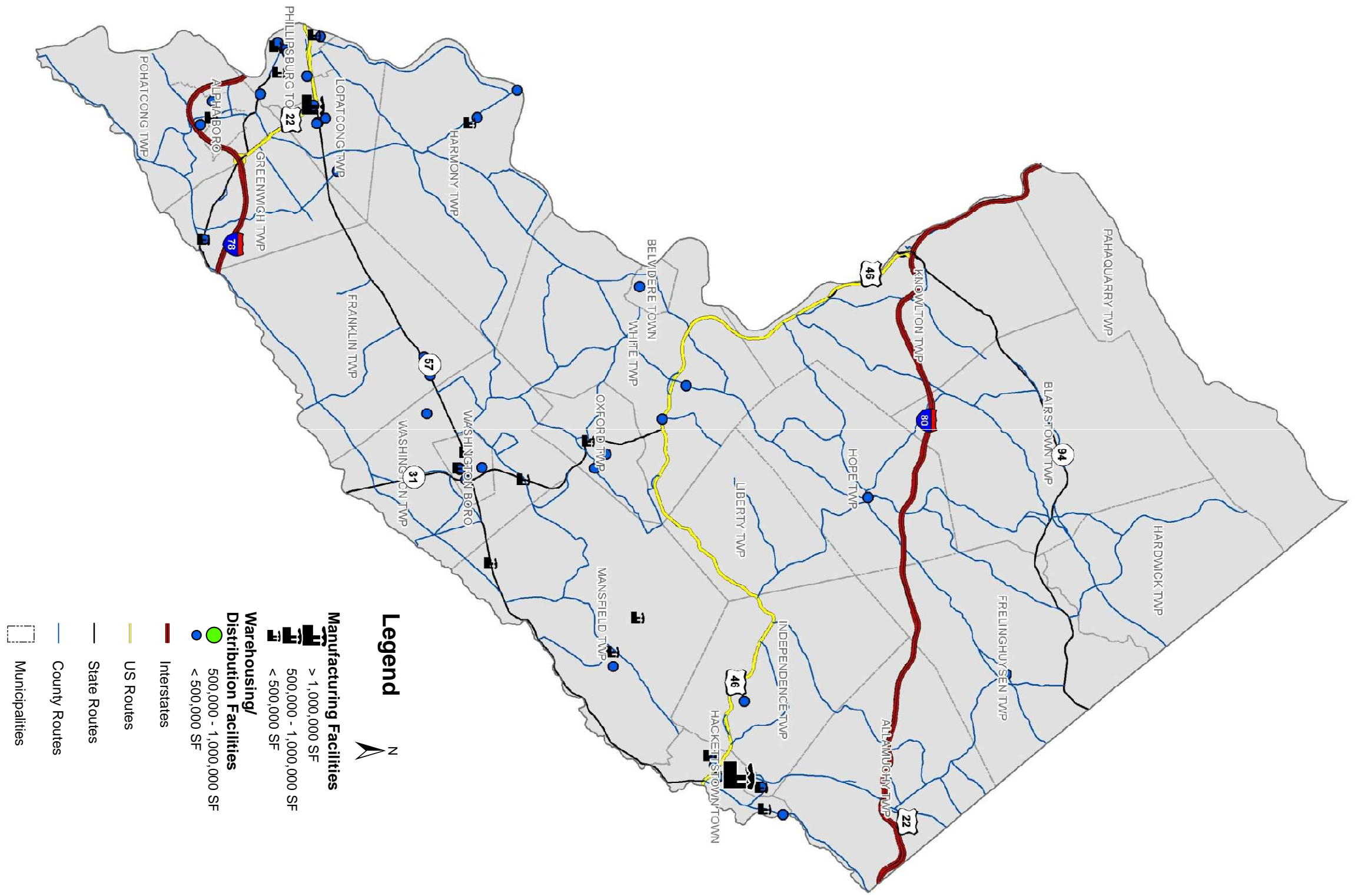
As summarized in the two tables to the right, many of the industrial buildings generate large volumes of freight. According to the Freight Locator database, 75 facilities in Warren County receive nearly 660,000 tons of freight annually, and ship 600,000 tons outbound. It is important to note that some 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 |
|-----------------------------|--------------|--------------|
| HI-TRONICS DESIGNS INC | HACKETTSTOWN | 102,180 |
| GARY W GRAY TRUCKING INC | DELAWARE | 68,054 |
| RUDOLPH RESEARCH ANALYTICAL | HACKETTSTOWN | 40,673 |
| ISE AMERICA INC | BROADWAY | 40,619 |
| MID ATLANTIC EXPRESS INC | HACKETTSTOWN | 38,121 |

| COMPANY NAME | CITY | OUTBOUND TONS |
|--------------------------|--------------|---------------|
| COMPAC CORP | HACKETTSTOWN | 174,298 |
| ANCHOR CONCRETE PRODUCTS | PHILLIPSBURG | 121,512 |
| PRECAST MANUFACTURING CO | PHILLIPSBURG | 42,852 |
| MCI OPTONIX INC | WASHINGTON | 37,634 |
| HUNTERDON BREWING CO | PHILLIPSBURG | 37,246 |



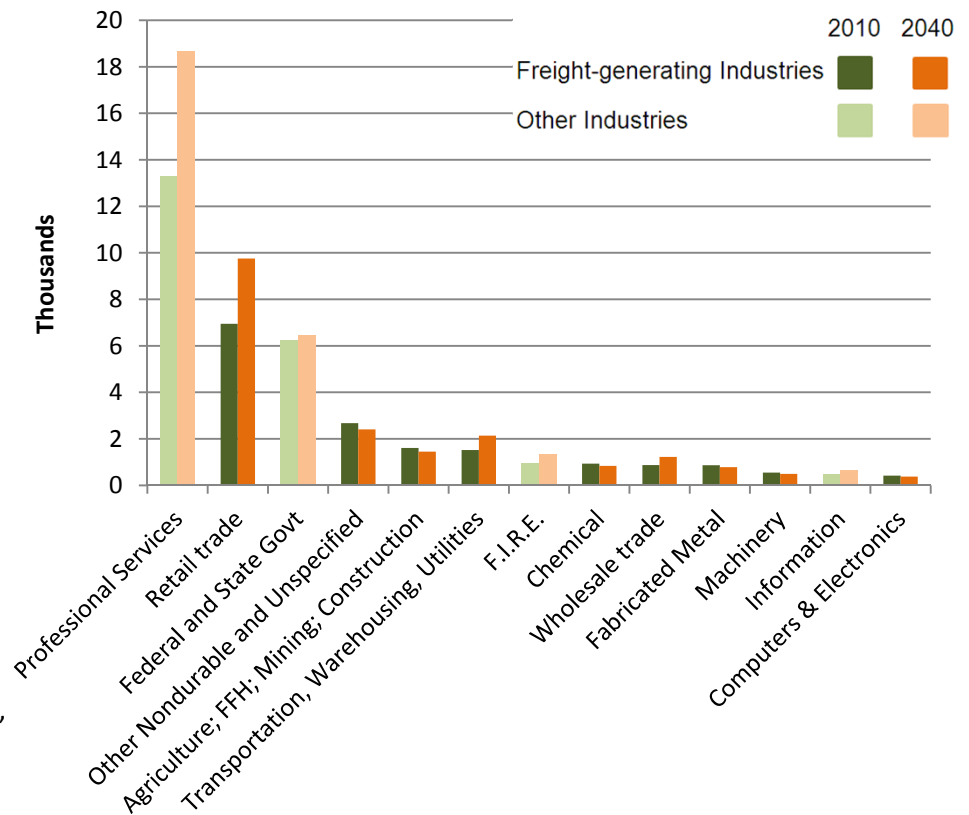
Industrial Buildings by Type and Square Footage, 2010
 Source: CB Richard Ellis

EMPLOYMENT FORECAST

Between 2010 and 2040, non-farm employment in Warren County is expected to grow by 25%, from 37,300 to 46,600. Employment in freight-intensive industries is expected to grow by 19% during the forecast period, compared to 29% 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 (58% in 2040, compared to 56% in 2010). Among individual industry groups, professional services is expected to experience the greatest employment growth (5,400 jobs), while there may be 300 fewer people employed in production of non-durable goods other than food, clothing or electronics.

Industry Employment Forecast, 2010 - 2040

Source: R/ECON



2040 COMMODITY FLOWS

By 2040, overall commodity flows into, out of, and within Warren County are expected to have increased by about 22%, from 10.3 million tons to 12.5 million tons (a difference of 2.2 million tons). The forecast anticipates that the top ten commodities in 2007 will continue to account for 90% of overall freight movement in 2040.

Nonmetallic minerals is expected to remain the number one commodity transported in Warren County by tonnage, followed by faster-growing commodities chemicals or allied product and crude petroleum or natural gas. Growth rates for most commodity groups are expected to range from 10% to 55%.

Top 10 Commodities by Tonnage, 2040

Sources: Cambridge Systematics, with data from IHS Global Insight

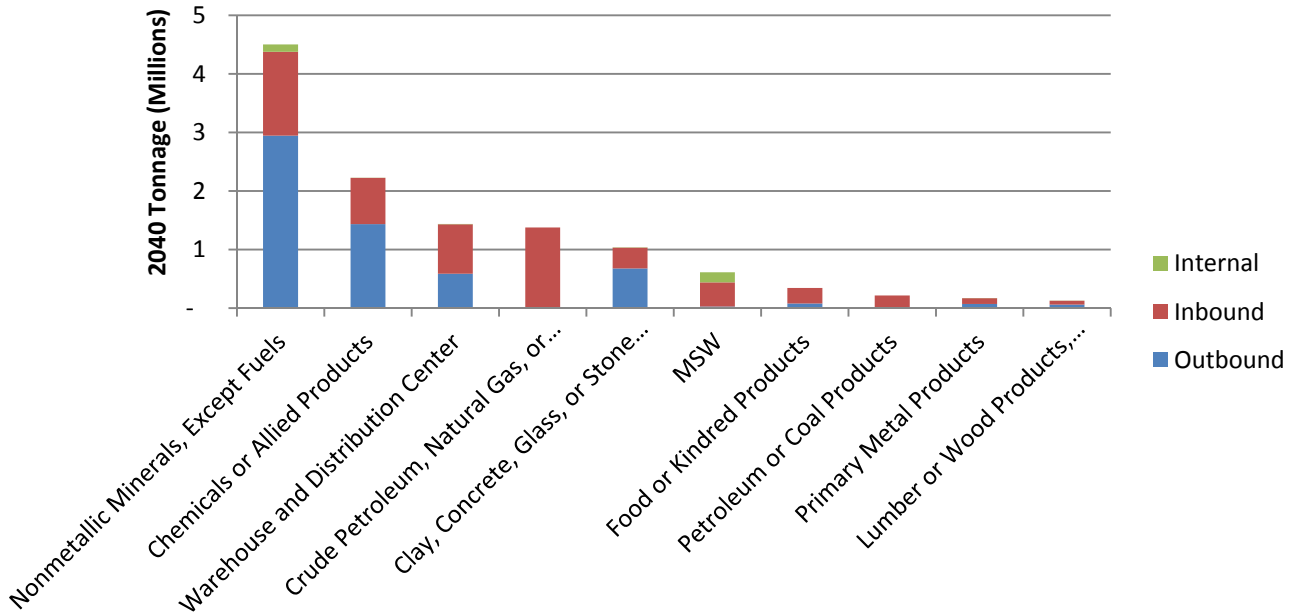
| Commodity | 2007 Tons (millions) | 2040 Tons (millions) | Difference (millions) | Growth Rate |
|--|----------------------|----------------------|-----------------------|-------------|
| Nonmetallic Minerals, Except Fuels | 4,098,219 | 4,503,865 | 405,647 | 10% |
| Chemicals or Allied Products | 1,820,852 | 2,223,095 | 402,244 | 22% |
| Warehouse and Distribution Center | 974,605 | 1,436,417 | 461,813 | 47% |
| Crude Petroleum, Natural Gas, or Gasoline | 1,251,412 | 1,376,917 | 125,505 | 10% |
| Clay, Concrete, Glass, or Stone Products | 751,113 | 1,039,415 | 288,302 | 38% |
| MSW | 432,241 | 610,930 | 178,689 | 41% |
| Food or Kindred Products | 241,880 | 343,236 | 101,357 | 42% |
| Petroleum or Coal Products | 139,074 | 214,988 | 75,914 | 55% |
| Primary Metal Products | 124,075 | 170,415 | 46,340 | 37% |
| Lumber or Wood Products, Excluding Furniture | 93,917 | 124,449 | 30,532 | 33% |

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 65% of nonmetallic minerals will be moving outbound, and 30% will be moving inbound. Chemicals and clay, concrete, glass, or stone will move primarily in the outbound direction, while warehouse/distribution center traffic, crude petroleum or natural gas, MSW, food, and petroleum or coal products will be moving mostly inbound.

Top 10 Commodities by Tonnage by Direction, 2040

Sources: Cambridge Systematics, with data from IHS Global Insight



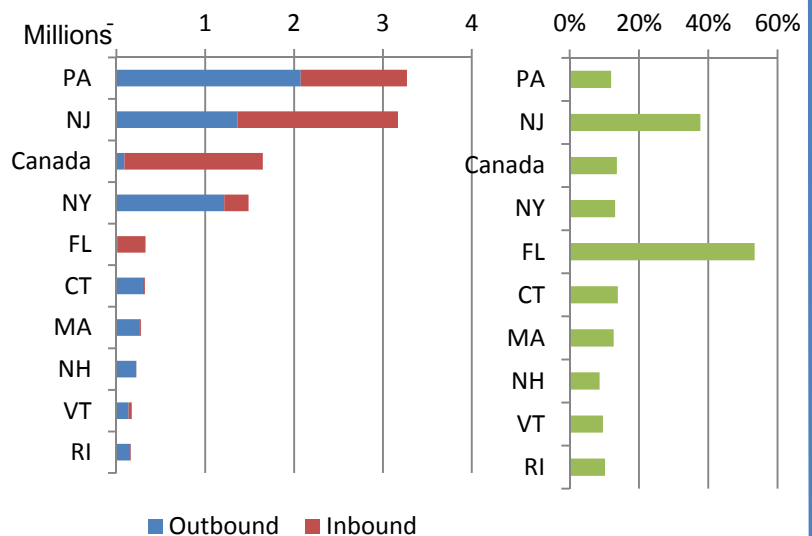
Future Trading Partners

Warren County's largest trading partner will continue to be Pennsylvania, followed by other New Jersey counties and Canada. Intrastate trade is expected to grow at three times the rate of trade with Pennsylvania, however, and the gap is therefore expected to be narrower in 2040 than in 2007.

The faster rate of growth in trade with States in the South and West relative to trade with other Northeastern States will move Florida from a position as Warren County's 7th largest trading partner in 2007 to the 5th position by 2040.

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

Source: Cambridge Systematics, with data from IHS Global Insight

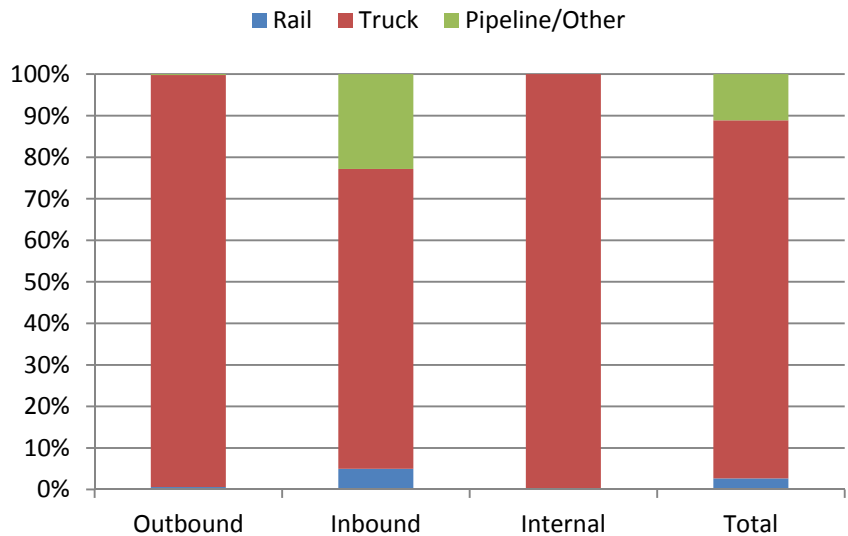


Future Mode Utilization

The forecast anticipates that freight mode splits in 2040 will be similar to 2007 mode splits. Trucks are expected to continue to carry 86% of all freight tons. The share of freight traveling by pipeline is expected to decrease from 12% to 11% and the share of freight traveling by rail is expected to increase from 2% to about 3%. Pipeline and rail will continue to be used almost exclusively for inbound shipments, while nearly 100% of outbound shipments and shipments traveling within Warren County will travel by truck.

Freight Tonnage by Mode and Direction, 2040

Source: Cambridge Systematics, with data from IHS Global Insight



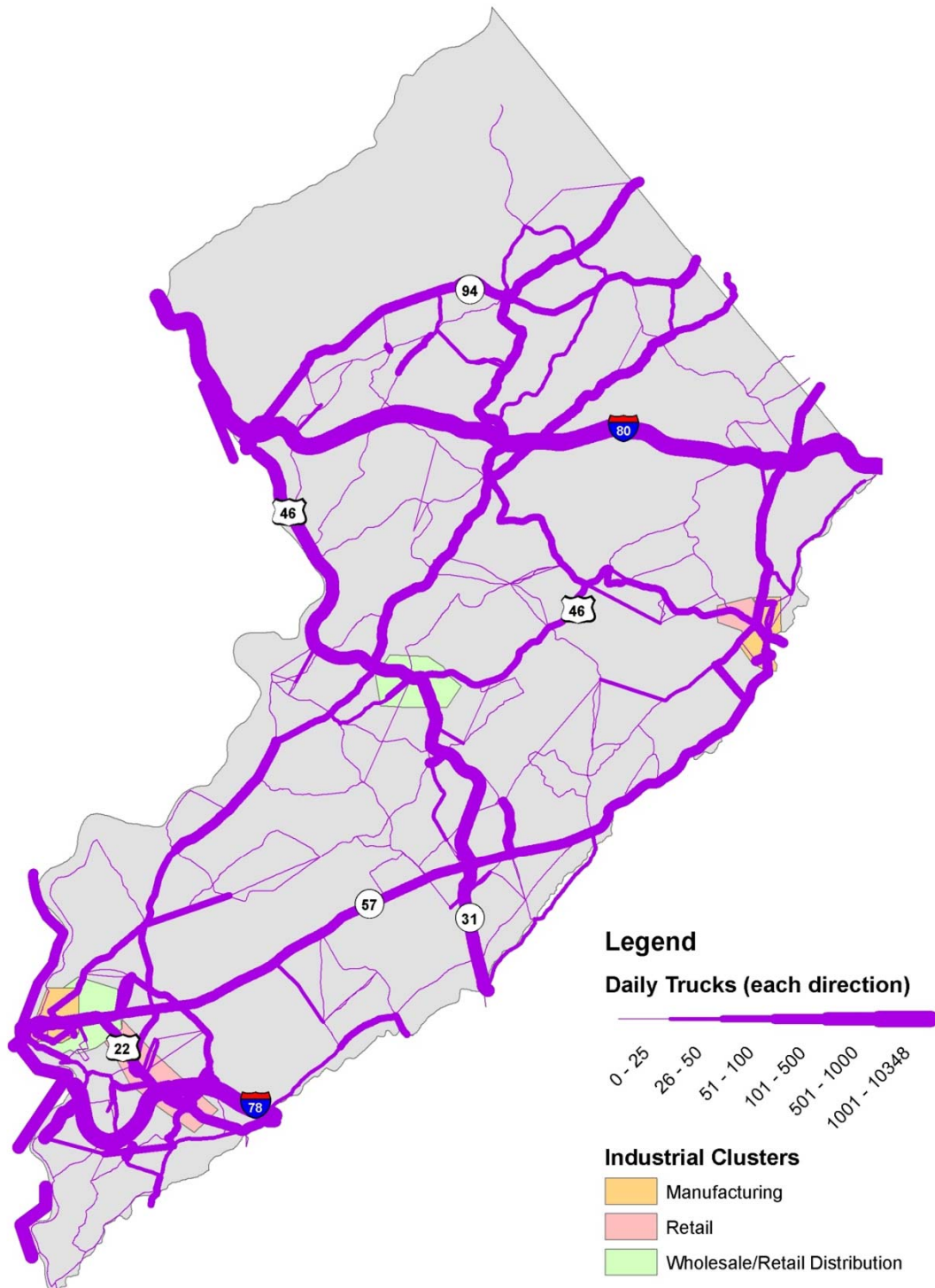
Future Highway Network Utilization

In 2040, Warren 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 80 are expected to increase by about 15% or 2,500 trucks per day. US Routes 22 and 46; NJ Routes 31, 57, 94; and County Route 521 could see numeric increases in truck traffic between 2007 and 2040 of 100 to 500 trucks per day.

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

Commodity Truck Flows in Warren 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.

Warren County’s representative on the NJTPA Board of Trustees is Freeholder Jason Sarnoski.

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.