

SUBREGIONAL FREIGHT PROFILE

Warren County

ABOUT THIS PROFILE

The North Jersey Transportation Planning Authority (NJTPA) has developed a set of alternative freight forecasts to support transportation, land use, and economic development decisions. This Freight Profile is an update to a previous version published in 2012, and offers a snapshot of key metrics – Economy and Land Uses, Freight Flows, and Freight Transportation Networks in 2020 and in the forecast year, 2050.

ECONOMY AND LAND USES

With a 2018 population of 105,779, Warren ranks 13th in the population among the 13 NJTPA counties, and 19th among New Jersey's 21 counties. Since 2000, population growth in Warren County has been less than the statewide rate of growth. The County's average household income is about 5 percent higher than that of the State overall.

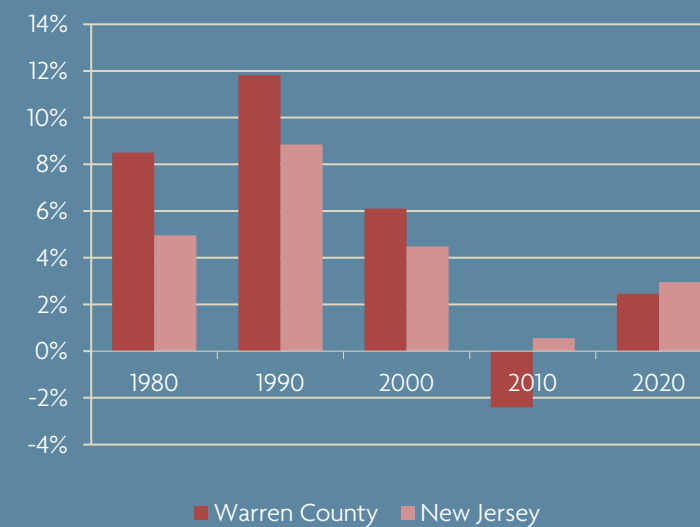
Warren County is home to:

- 105,779 people
- More than 2,700 businesses that employ 32,700 people; about 39 percent of these jobs are in industry sectors that are highly dependent on freight movement
- About 12.2 million tons of domestic freight shipped or received annually
- Approximately 912,000 e-commerce packages delivered 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

Highlights

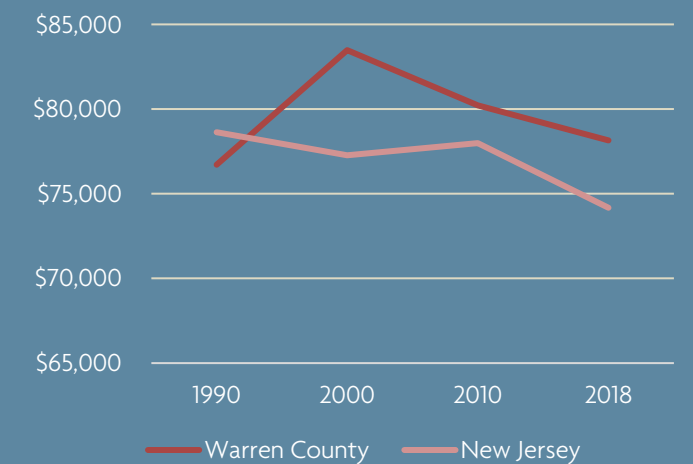
Population Growth by Decade

Source: U.S. Census Bureau



Median Household Income, Constant 2018 Dollars

Source: U.S. Census Bureau



EMPLOYMENT

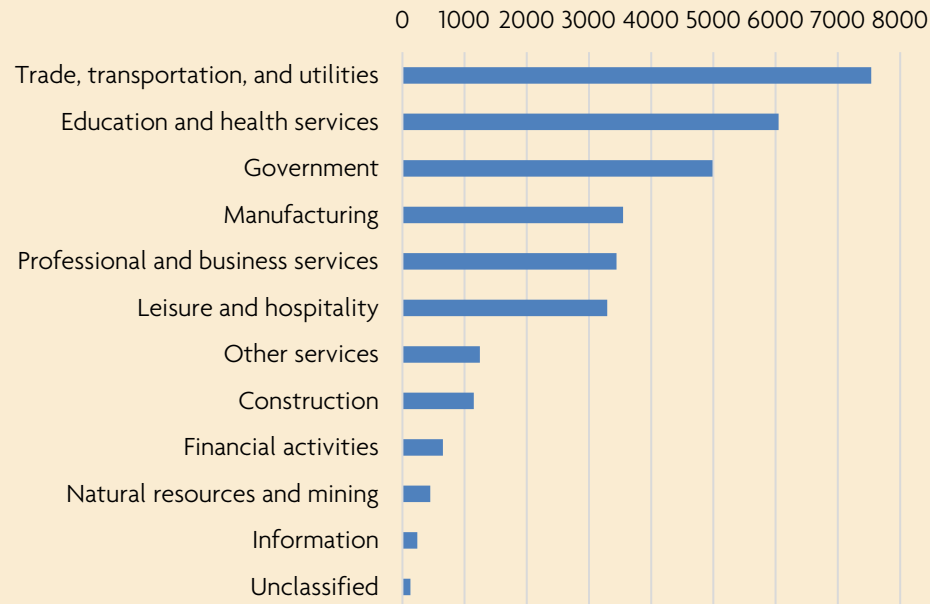
The County's economy employs 32,700 people in more than 2,700 establishments. About 39 percent are employed in "freight-intensive" industries, such as construction, manufacturing, mining and extraction, retail trade, wholesale trade, and logistics. About 61 percent are employed in industries that may generate freight but are less dependent on freight movement.

FREIGHT FLOWS

In 2020, an estimated 12.2 million tons of domestic freight will move into, out of, or within Union 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).

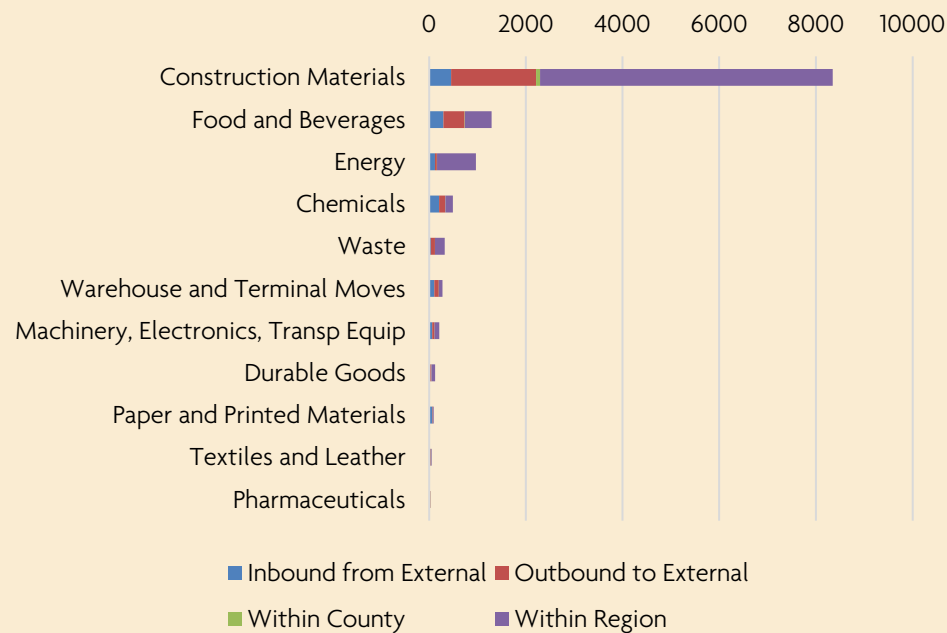
For domestic tonnage with an origin and/or destination in the County, about 68 percent consists of construction materials, most of which travel between Warren County and locations in the NJTPA region. Other leading commodities in Warren County include moves of food and beverages, energy products, chemicals, and waste.

Employment by Industry, 2019



Source: U.S. Bureau of Labor Statistics

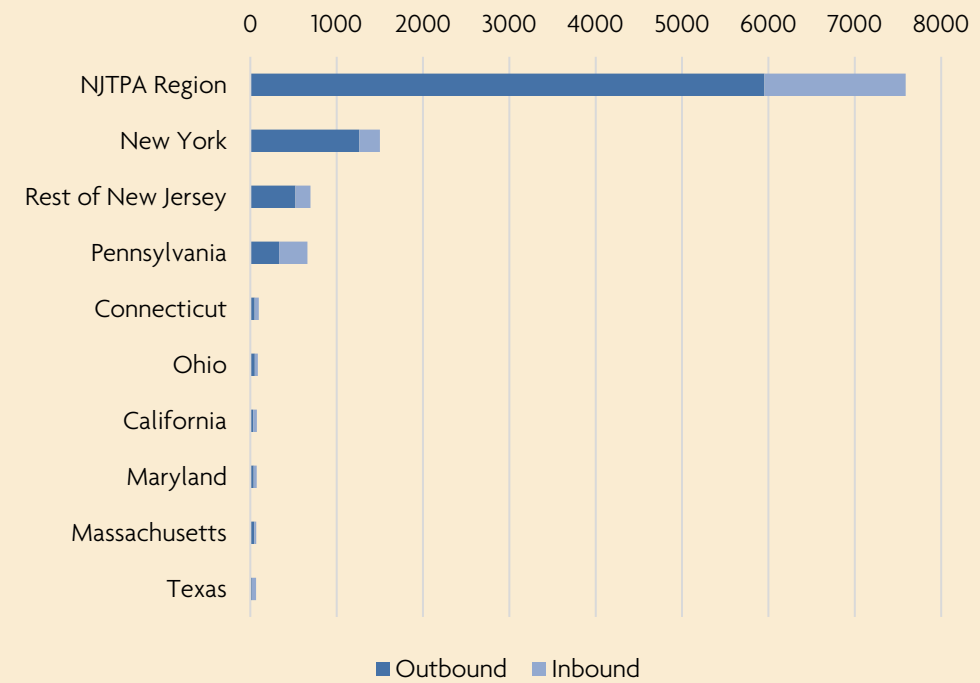
Thousands of Tons by Commodity by Direction, 2020



Source: NJTPA Freight Forecasting Tool, 2020

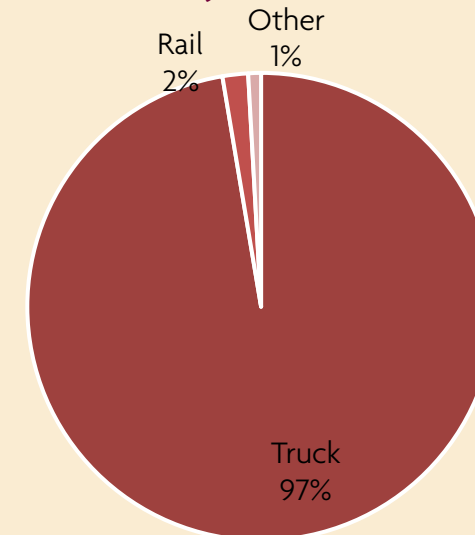
E-commerce has a growing presence in the retail landscape. Some of the freight shipments described in this profile include goods that are ultimately delivered to consumers who shop online. In 2019, about 912,000 e-commerce shipments containing 1.2 million items were delivered to consumers in Warren County.

Thousands of Tons by Domestic Trading Partner, 2020



Source: NJTPA Freight Forecasting Tool, 2020

Tons by Mode, 2020



Source: NJTPA Freight Forecasting Tool, 2020

TRADING PARTNERS

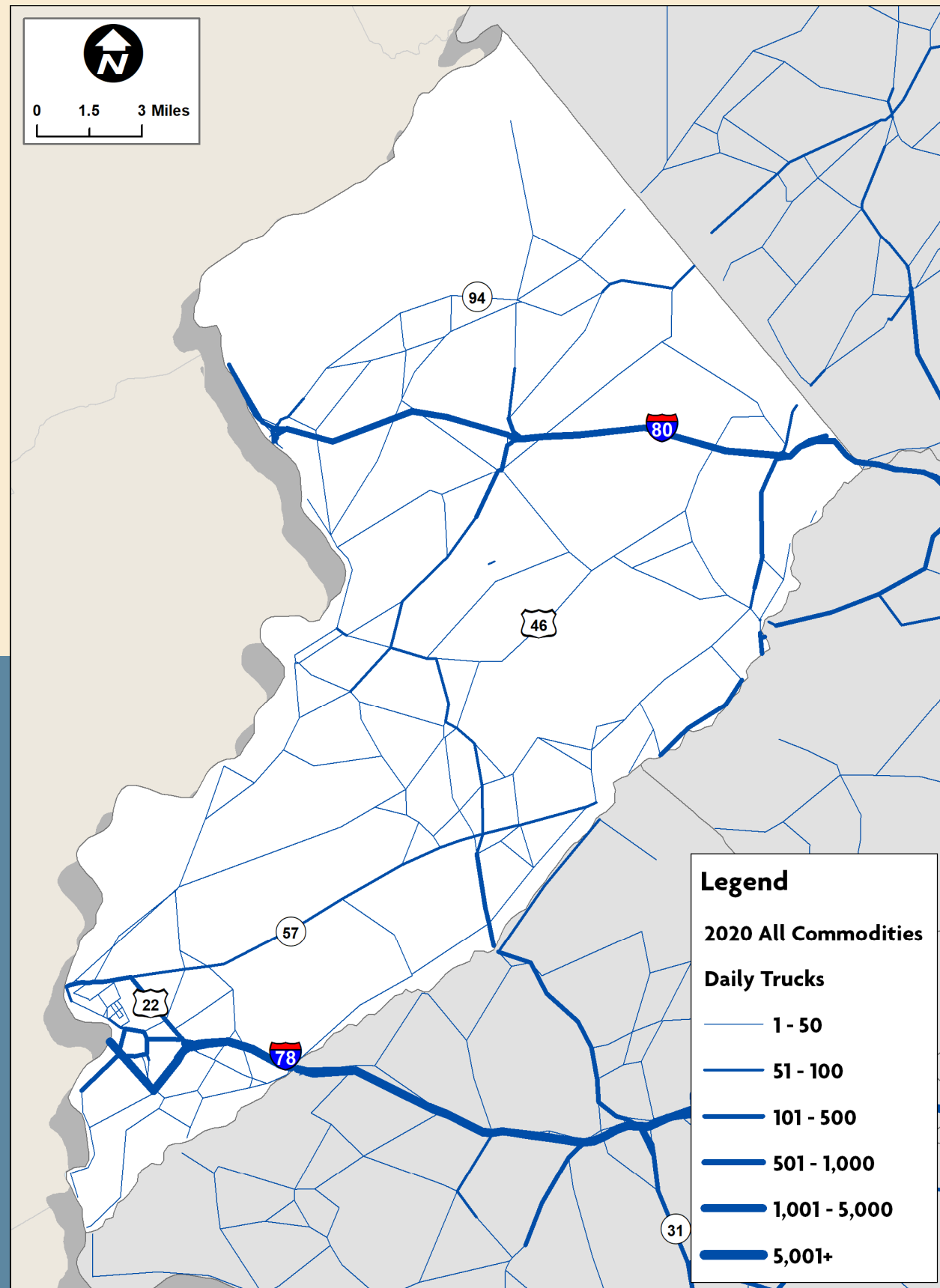
Warren County's major trading partners are, not surprisingly, its neighbors. As illustrated to the left, locations in the NJTPA region are the greatest origins of inbound freight and destinations for outbound freight. Much of the outbound freight is construction material originating in Warren County. New York, the portions of New Jersey outside the NJTPA region, and Pennsylvania and are also among the top origins and destinations for freight traded with Warren County.

FREIGHT TRANSPORTATION NETWORKS

Freight can be handled by truck, rail, pipelines, 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, and pipelines are suited for moving energy products), time sensitivity (truck and air are most competitive), need for door-to-door service (trucking is needed unless the customer has a dock or rail connection).

For domestic freight traveling to, from, or within Warren County, 97 percent travels by truck, 2 percent by rail, and 1 percent by other modes.

Highway Network Utilization, 2020



Source: NJTPA Freight Forecasting Tool, 2020; NJRTM-E, 2019; NJOIT, 2008; Esri, 2014.

HIGHWAY 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.

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 map on the previous page illustrates the flows of commodity trucks, or trucks loaded with freight, on the highway network.

Interstates 78 and 80 are the top two highway corridors in Warren County, by number of commodity trucks carried. More than 5,600 commodity trucks per day use Interstate 78 in each direction, and more than 3,200 commodity trucks per day use Interstate 80 in each direction.

BUSINESS ESTABLISHMENTS

The map on the next page illustrates the locations of facilities that ship, handle, or receive freight, including:

- Production facilities such as manufacturing businesses or mining and quarrying facilities where goods are produced or raw materials are extracted;
- Logistics facilities, including warehousing and transportation facilities through which goods are distributed; and
- Sales, including retail, services, and institutional establishments where goods are sold.

The largest clusters of business locations handling freight are located in and around Phillipsburg and Lopatcong, and in the area of Hackettstown. A newly emerging warehousing cluster is being developed at Bridge Point in Lopatcong Township, which has brought new logistics facilities to Warren County recently, and new facilities are expected to continue arriving there over time. There is also agricultural land covering much of the County that generates freight.

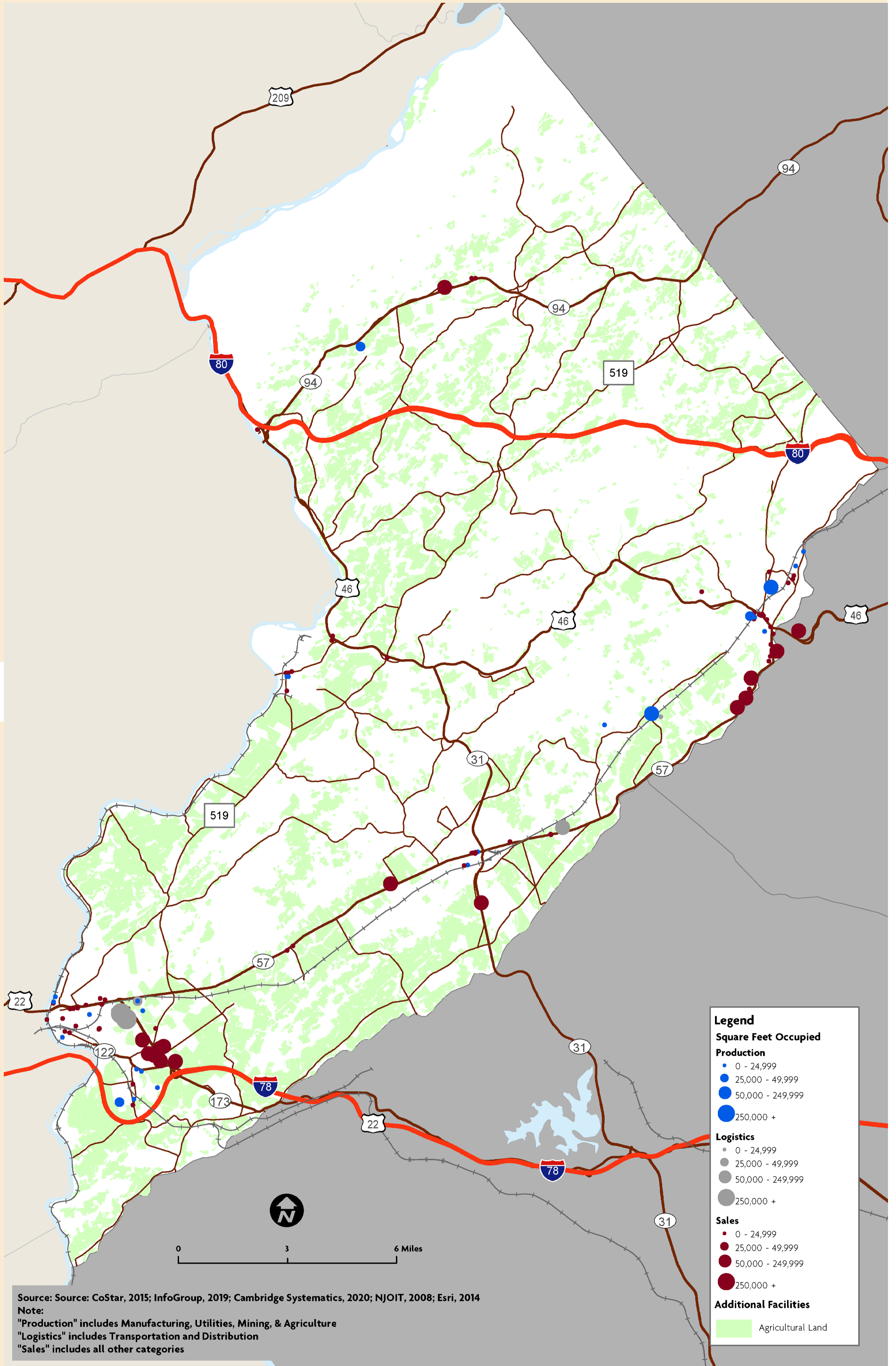
Top 5 Business Establishments in Freight-Generating Industry Sectors, by Size

Company	Square Footage	Municipality	Business Type
UNIQLO	600,000	Lopatcong Township	Logistics
Mark Anthony Beverage	420,000	Lopatcong Township	Logistics
NYK Logistics	240,000	Mansfield Township	Logistics
Mars Chocolate North America	175,000	Hackettstown	Production
Borealis Compounds	175,000	Mansfield Township	Production

Source: Infogroup, 2019; CoStar, 2015

Note: Some companies may have multiple locations in the county and/or region.

Business Square Footage by Industry Type

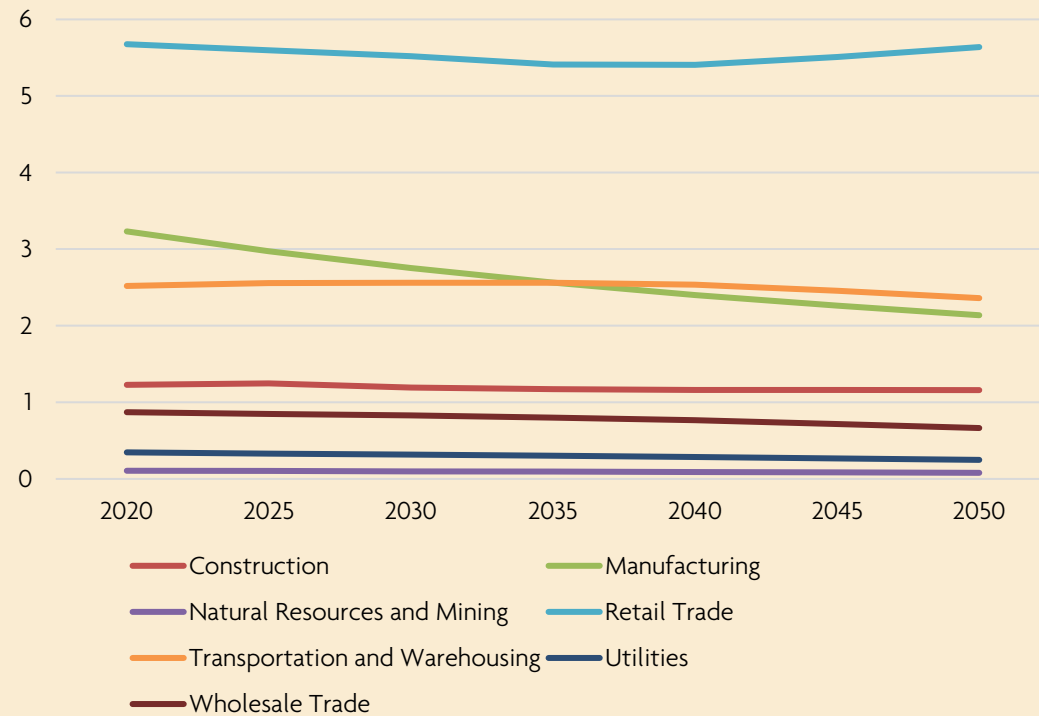


Source: Source: CoStar, 2015; InfoGroup, 2019; Cambridge Systematics, 2020; NJOIT, 2008; Esri, 2014
Note:
"Production" includes Manufacturing, Utilities, Mining, & Agriculture
"Logistics" includes Transportation and Distribution
"Sales" includes all other categories

EMPLOYMENT FORECAST

Employment in freight-intensive industries is expected to decrease by about 12 percent during the forecast period. The manufacturing, utilities, natural resources, and wholesale trade sectors are expected to experience the largest reductions in employment. Retail trade, construction, and transportation and warehousing employment are expected to decrease by 1 percent, 6 percent, and 6 percent respectively, between 2020 and 2050.

Forecasted Employment in Freight-Generating Industry Sectors, 2020-2050 (Thousands of Jobs)



Source: Moody's, 2020

Commodity Flow Forecast, 2020-2050

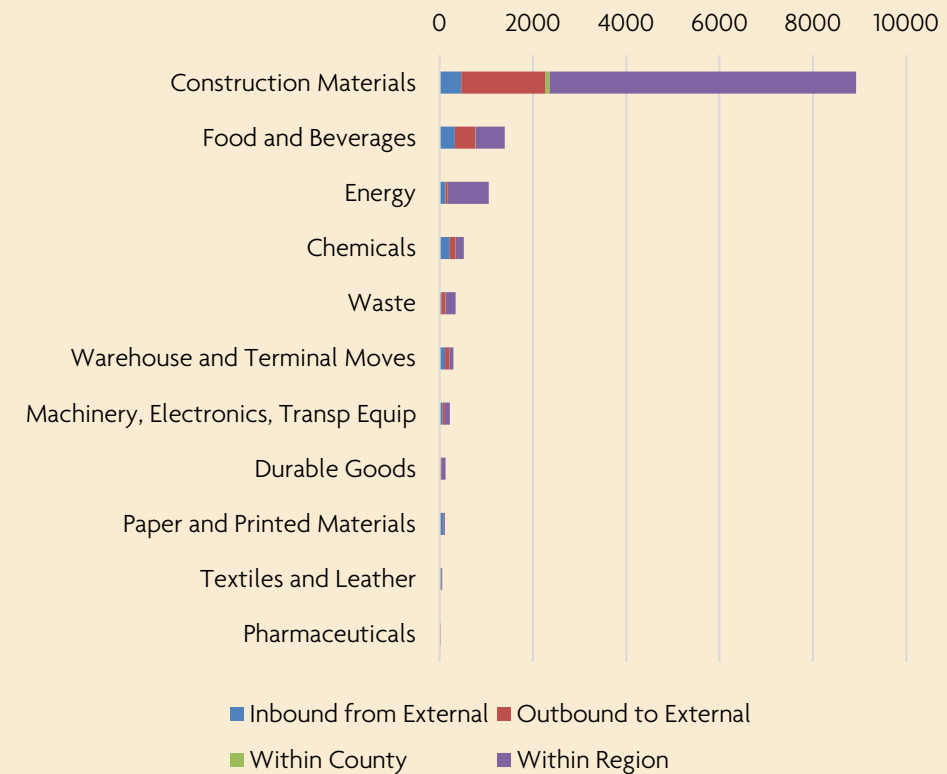
By 2050, commodity flows into, out of, and within Warren County are expected to have increased by about 7 percent, from 12.2 million tons to 13.1 million tons (a difference of about 900,000 tons). Construction materials is expected to remain the number one commodity transported by tonnage, followed by food and beverages and energy products. Machinery, electronics, and transportation equipment and food and beverages are the top commodity bundles by value of goods and are expected to remain the top two bundles by value through 2050.

Commodity Bundle	2020 Tons (thousands)	2050 Tons (thousands)	2020 Value (millions \$)	2050 Value (millions \$)	Change in Tons	Change in Value
Chemicals	492	521	1,856	1,966	6%	6%
Construction Materials	8,348	8,926	1,995	2,073	7%	4%
Durable Goods	123	129	843	886	5%	5%
Energy	969	1,056	893	975	9%	9%
Food and Beverages	1,293	1,397	2,398	2,532	8%	6%
Machinery, Electronics, Transp Equip	208	223	2,449	2,617	7%	7%
Paper and Printed Materials	93	114	231	314	22%	36%
Pharmaceuticals	28	29	868	904	4%	4%
Textiles and Leather	51	57	460	513	11%	12%
Warehouse and Terminal Moves	275	298	1,439	1,602	8%	11%
Waste	323	347	75	81	8%	7%
Grand Total	12,203	13,097	13,508	14,463	7%	7%

Source: NJTPA Freight Forecasting Tool, 2020

Note: Commodities assigned a value of \$0 indicate the absence of sales or commercial value

Thousands of Tons by Commodity by Direction, 2050



Source: NJTPA Freight Forecasting Tool, 2020

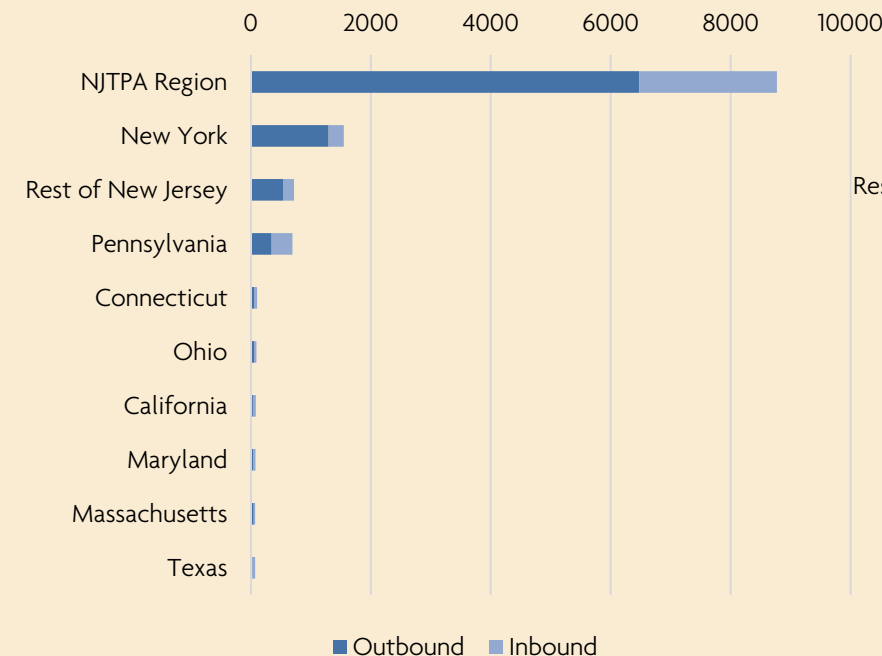
COMMODITY VOLUMES AND DIRECTION

The directional movement of shipments containing the top 10 commodities are expected to remain nearly constant as well. In 2050, like 2020, most construction materials moves will be within the NJTPA region. Intraregional moves are expected to remain the predominant travel pattern across many of the other commodity bundles as well.

FUTURE TRADING PARTNERS

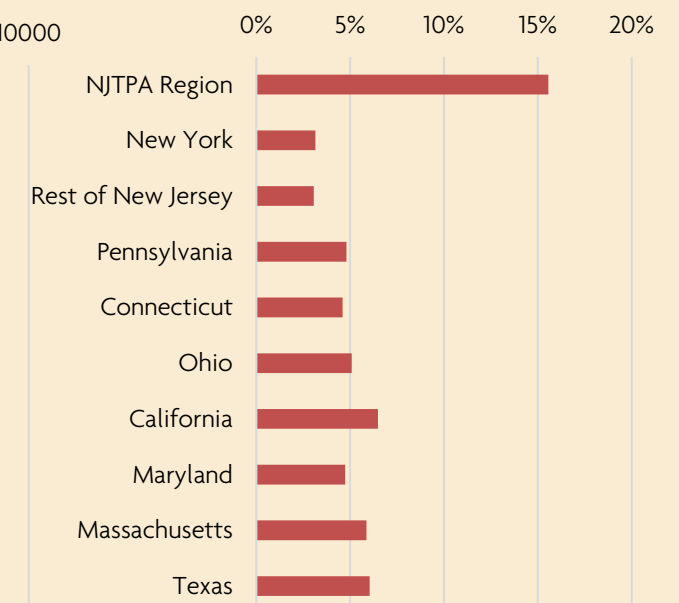
Warren County's largest trading partners will continue to be other counties in the NJTPA region, followed by New York, portions of New Jersey outside the NJTPA region, and Pennsylvania. The volume of tons moved between Warren and other NJTPA counties is expected to grow by 15 percent between 2020 and 2050.

Thousands of Tons by Domestic Trading Partner, 2050



Source: NJTPA Freight Forecasting Tool, 2020

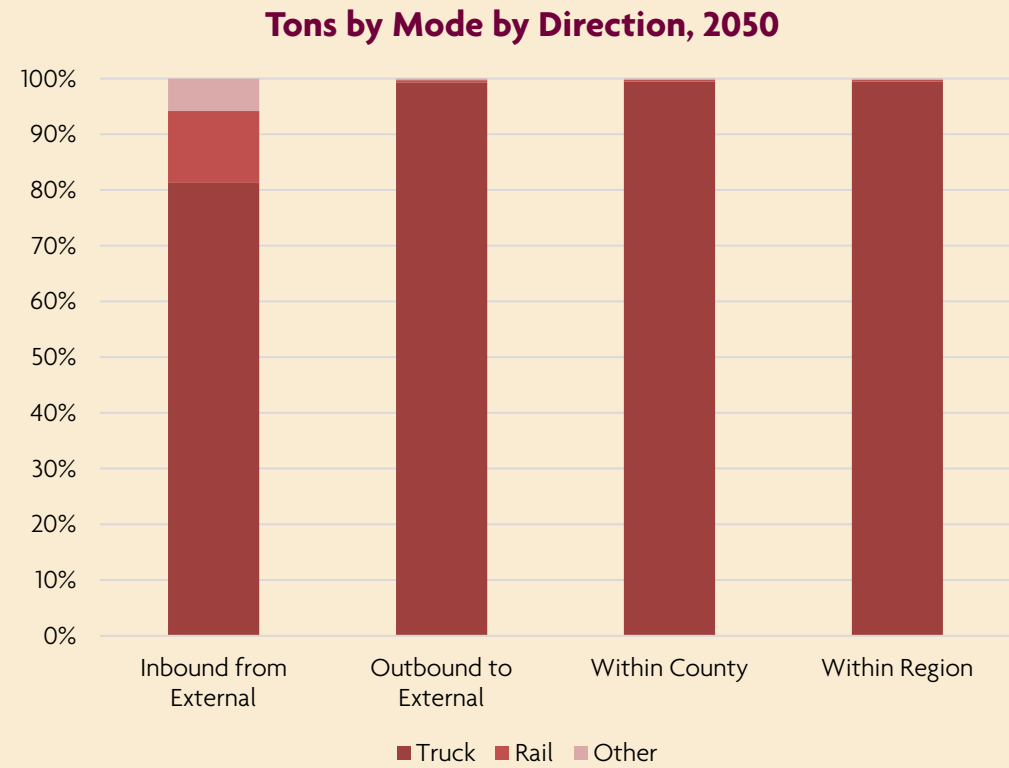
Growth, 2020-2050



Source: NJTPA Freight Forecasting Tool, 2020

FUTURE MODE UTILIZATION

The forecast anticipates that freight mode splits in 2050 will be similar to 2020 mode splits. Trucks are expected to carry 97 percent of all freight tons, while rail is expected to move 2 percent and other modes are expected to carry about 1 percent. Rail is expected to move 16 percent of inbound tonnage, and truck will carry about 99 percent of intracounty and intraregional freight moves.



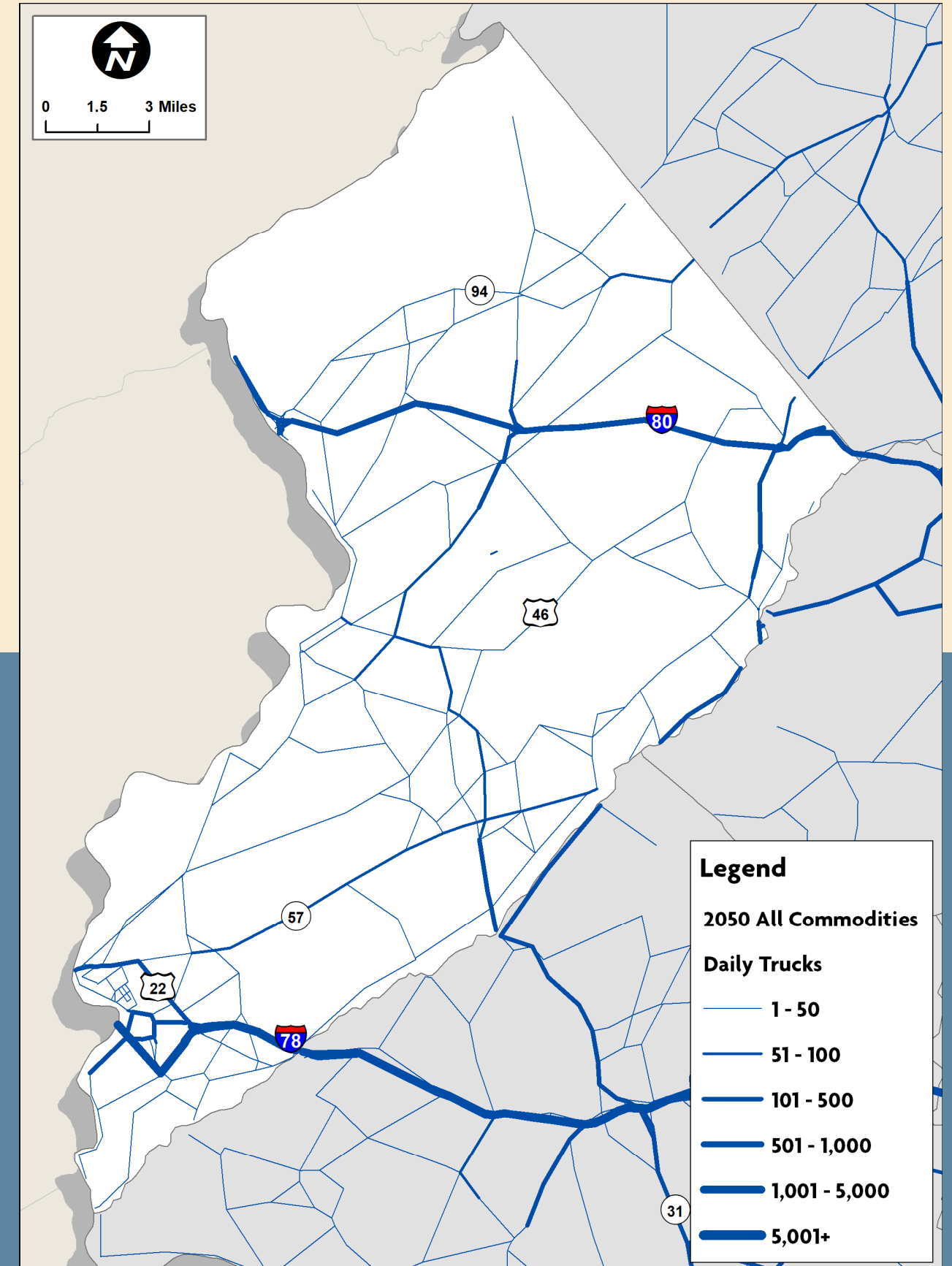
Source: NJTPA Freight Forecasting Tool, 2020

Future Highway Network Utilization

In 2050, 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 commodity trucks traveling on Interstates 78 and 80 is expected to increase by about 200-400 trucks per day in each direction between 2020 and 2050. Portions of Routes 22, 46, 57, and are expected to see numeric increases of between 50-100 daily trucks in each direction between 2020 and 2050.

The map on Page 11 illustrates the projected commodity truck volumes in 2050 on highways in Warren County.

Highway Network Utilization, 2050



Source: NJTPA Freight Forecasting Tool, 2020; NJRTM-E, 2019; NJOIT, 2008; Esri, 2014.

ABOUT THE NJTPA

The North Jersey Transportation Planning Authority (NJTPA) is the federally authorized Metropolitan Planning Organization for 6.7 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, 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 Director of NJ TRANSIT, the Chairman of the Port Authority of New York and New Jersey, a Governor's Representative and a Citizens' Representative appointed by the Governor.

Warren County Freeholder Jason Sarnoski is Secretary of the NJTPA Board of Trustees.

ABOUT THE STUDY

Conditions in the goods movement industry have changed over the last several years. The 2050 Freight Industry Level Forecasts Study developed updated information on current and projected freight demand through 2050 for the NJTPA to use in its freight planning activities. This effort built on two previous NJTPA freight planning studies: the 2040 Freight Industry Level Forecasts Study (completed in 2012) and the Regional Freight Commodity Profiles Study (completed in 2015).

This study helps identify locations with concentrations of goods movement activity and where they will occur in the future; the types of commodities that are and will be moving through the region; and where strategic investments should be considered to support economic growth and enhance regional resiliency. The results of this work will serve as background for the NJTPA's next Long Range Transportation Plan as well as freight planning and subregional planning studies.

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 NJTPA with funding from the Federal Transit Administration and the Federal Highway Administration. The NJTPA is solely responsible for its contents.