

SUBREGIONAL FREIGHT PROFILE

Passaic 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 503,310, Passaic is the 9th most populous County in the State, and 8th 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 the last century. The County's median household income is about 10 percent lower than that of the State overall.

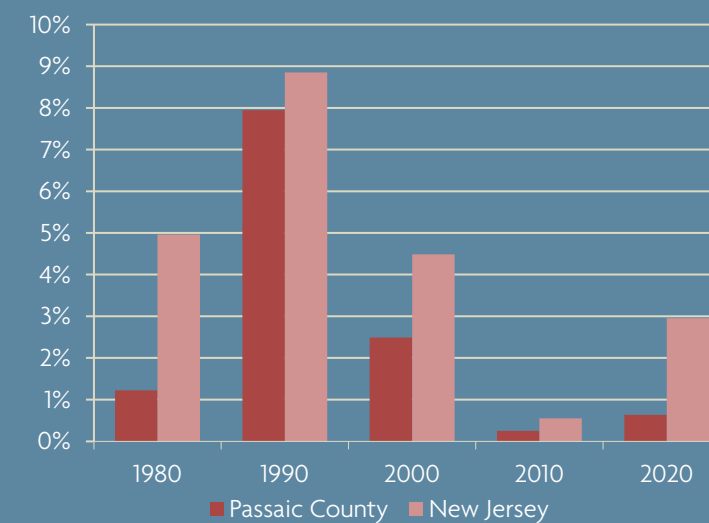
Passaic County is home to:

- 503,310 people
- Nearly 13,000 businesses that employ 165,600 people; about 38 percent of these jobs are in industry sectors that are highly dependent on freight movement
- About 29 million tons of domestic freight shipped or received annually
- Nearly 4 million e-commerce packages delivered annually
- Interstate, State, and County highways used by tens of thousands of trucks every day
- New York, Susquehanna and Western Railway and Norfolk Southern freight rail service

Highlights

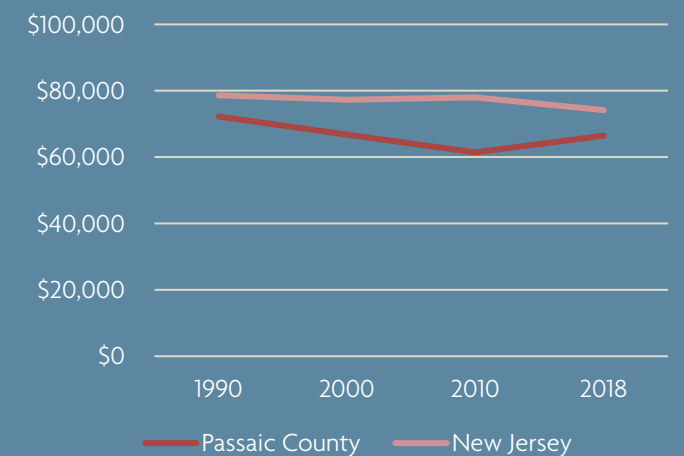
Population Growth by Decade

Source: U.S. Census Bureau



Median Household Income, Constant 2018 Dollars

Source: U.S. Census Bureau



EMPLOYMENT

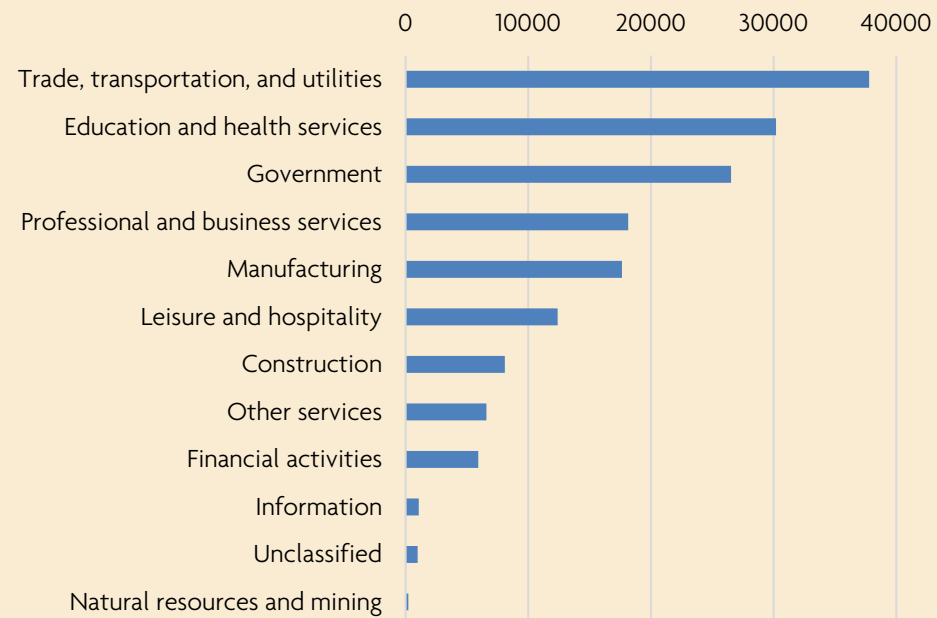
The County's economy employs 165,600 people in more than 12,900 establishments. About 38 percent are employed in "freight-intensive" industries, such as construction, manufacturing, mining and extraction, retail trade, wholesale trade, and logistics. About 62 percent are employed in industries that may generate freight but are less dependent on freight movement.

FREIGHT FLOWS

In 2020, an estimated 29 million tons of domestic freight will move into, out of, or within Passaic County, by all modes of transportation (truck, rail, pipeline, 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).

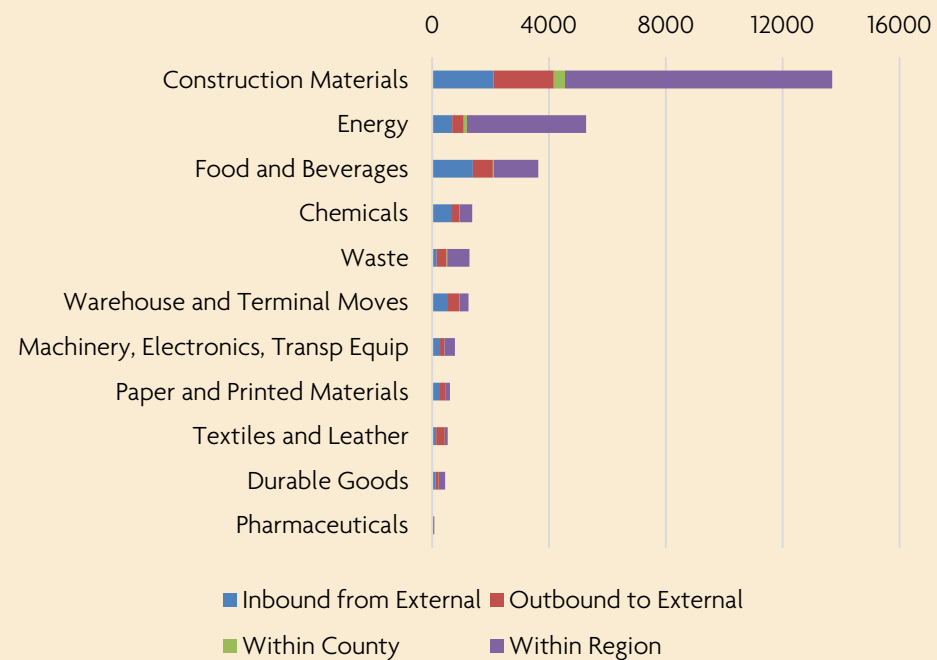
For domestic tonnage with an origin and/or destination in the County, around 47 percent consists of construction materials, most of which travel between Passaic County and locations in the NJTPA region. Other leading commodities in Passaic County include moves of energy products, food and beverages, chemicals, and waste.

Employment by Industry, 2019



Source: U.S. Bureau of Labor Statistics

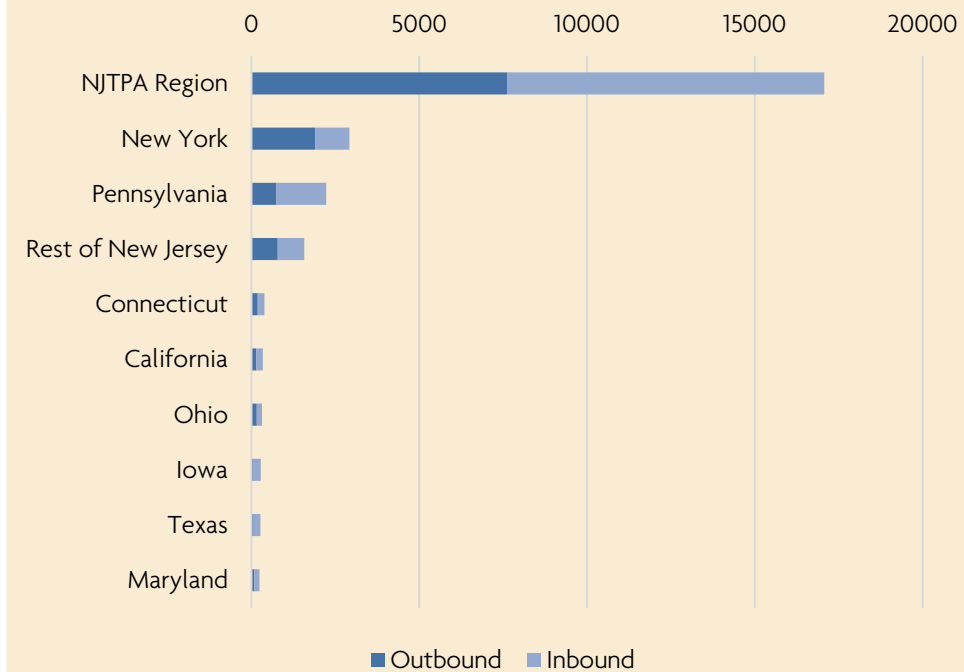
Thousands of Tons by Commodity by Direction, 2020



Source: NJTPA Freight Forecasting Tool, 2020

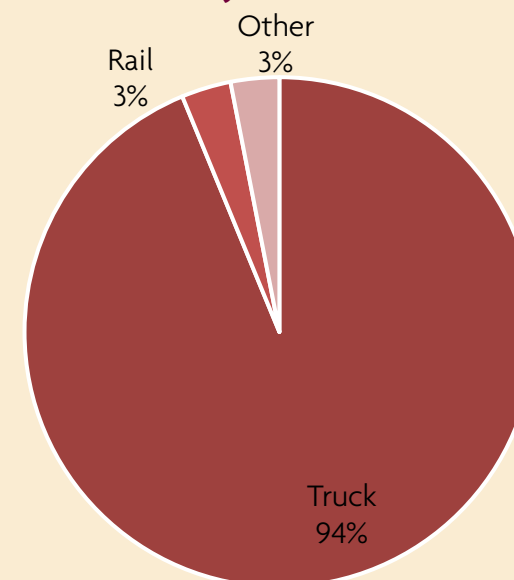
E-commerce has a growing presence in the retail landscape. Some of the freight shipments described in this profile include goods that are ultimately delivered to consumers who shop online. In 2019, about 4 million e-commerce shipments containing 5.8 million items were delivered to consumers in Passaic 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

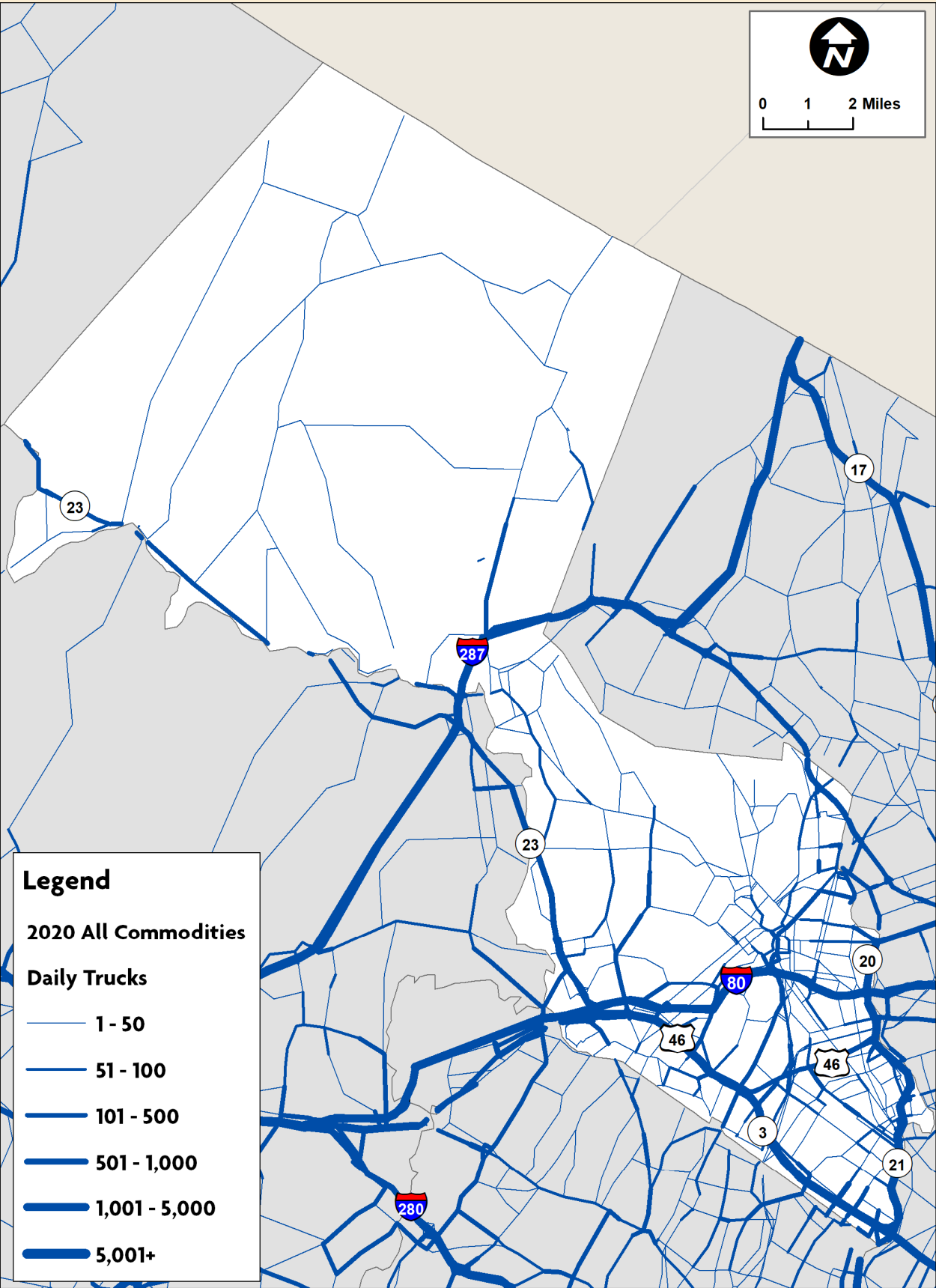
Passaic County's major trading partners are, not surprisingly, its neighbors. As illustrated to the right, locations in the NJTPA region are the greatest origins of inbound freight and destinations for outbound freight. New York, Pennsylvania, and the portions of New Jersey outside the NJTPA region are also among the top origins and destinations for freight traded with Passaic 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 Passaic County, 94 percent travels by truck, 3 percent by rail, and 3 percent by other modes.

Highway Network Utilization, 2020



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

HIGHWAY 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.

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 80 and 287, and portions of Routes 3 and 46 carry between 4,000 and 5,000 commodity trucks per day in each direction. Routes 20 and 21 carry about 1,800 commodity trucks per day in each direction.

BUSINESS ESTABLISHMENTS

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

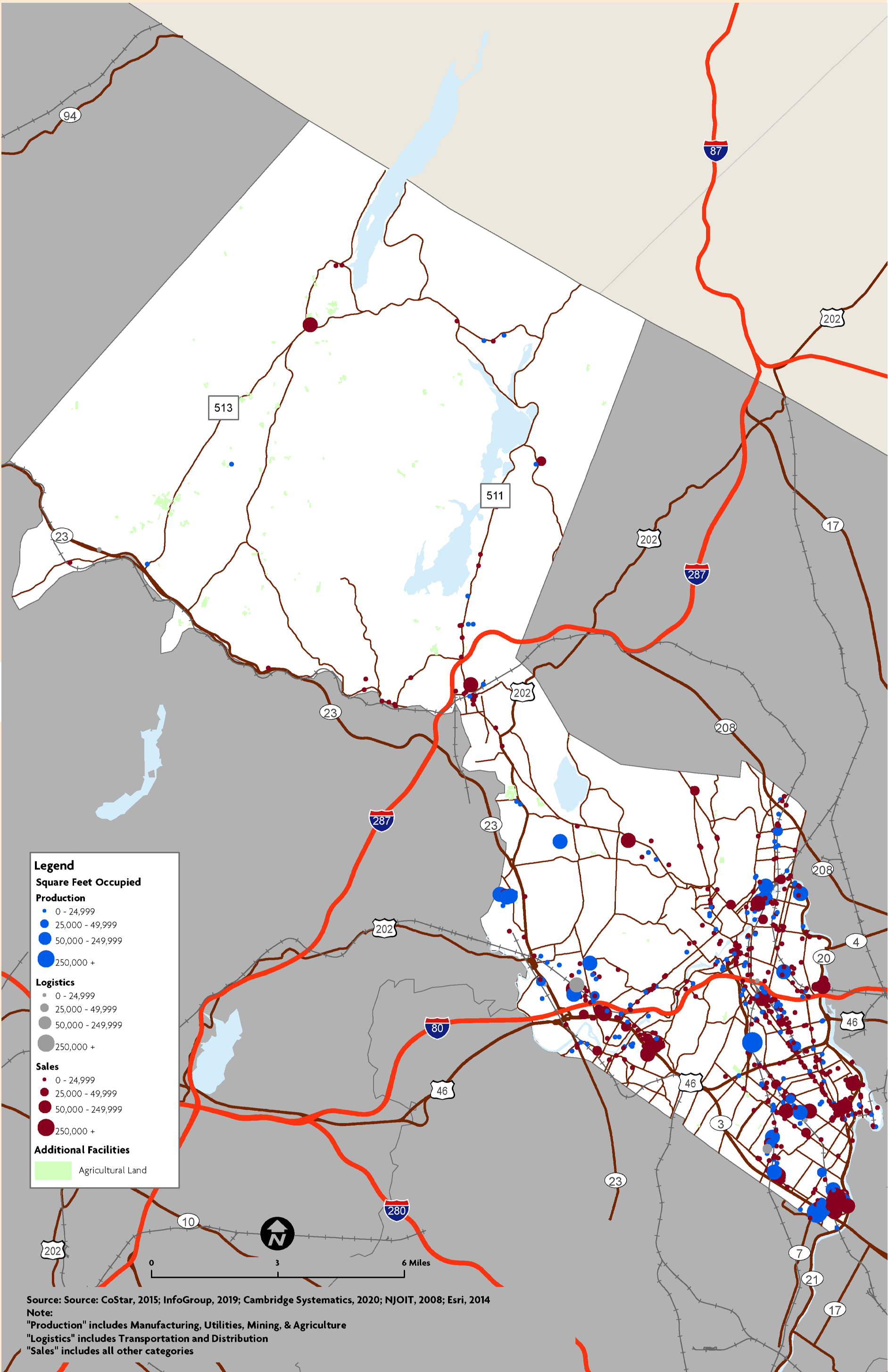
- Production facilities such as manufacturing businesses or mining and quarrying facilities where goods are produced or raw materials are extracted;
- Logistics facilities, including warehousing and transportation facilities through which goods are distributed; and
- Sales, including retail, services,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

Clusters of production and logistics facilities are in Paterson, Clifton, Passaic, Totowa, and Wayne. Sales facilities are located along major retail corridors such as Route 3 in Clifton and Route 46 in Totowa and Little Falls, and on commercial districts in Paterson, Passaic, and Clifton.

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

Company	Square Footage	Municipality	Business Type
ITT Electronic Systems	920,000	Clifton	Production
Benjamin Moore & Co.	250,000	Clifton	Production
Driscoll Foods	248,000	Clifton	Production
International Paper	230,000	Clifton	Sales
Precision Textiles	208,000	Totowa	Production

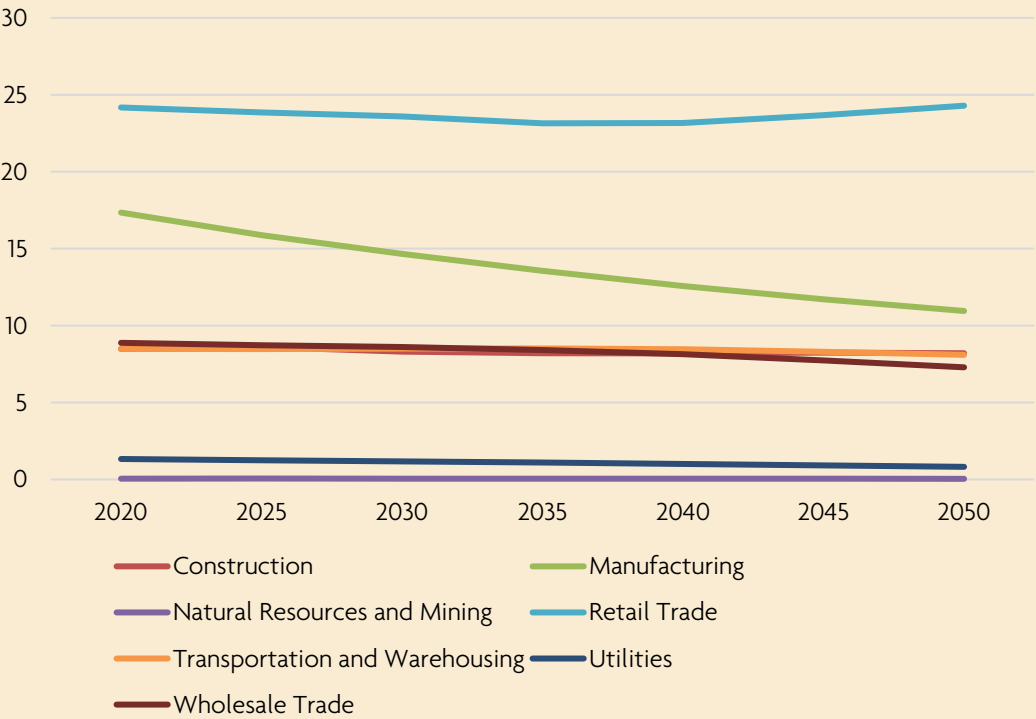
Source: Infogroup, 2019; CoStar, 2015
Note: In addition to the establishments listed in this table, other major freight generating facilities are in Passaic County, including the Bay State Milling Company complex in Clifton.
Note: Some companies may have multiple locations in the county and/or region.



EMPLOYMENT FORECAST

Employment in freight-intensive industries is expected to decrease by about 13 percent during the forecast period. The utilities, manufacturing, and natural resources, sectors are expected to experience the largest reductions in employment. Retail trade employment is expected to increase by 1 percent between 2020 and 2050.

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



Source: Moody's, 2020

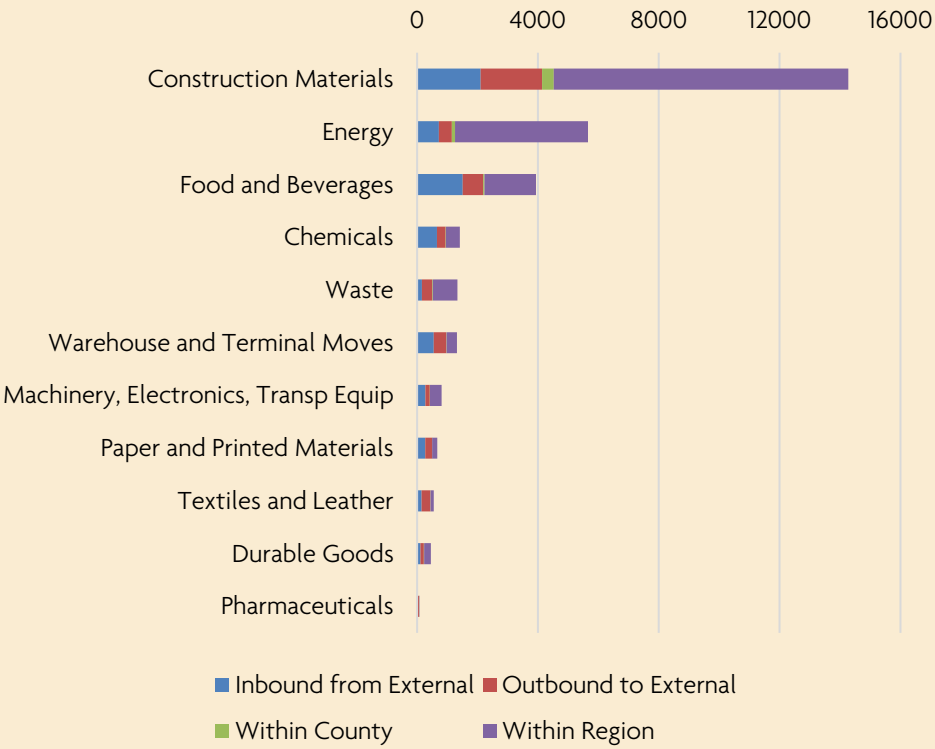
Commodity Flow Forecast, 2020-2050

By 2050, commodity flows into, out of, and within Passaic County are expected to have increased by about 5 percent, from 29 million tons to 30.5 million tons (a difference of about 1.5 million tons). Construction materials is expected to remain the number one commodity transported by tonnage, followed by energy products and food and beverages. Machinery, electronics, and transportation equipment, warehouse and terminal moves, 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	1,371	1,414	5,260	5,426	3%	3%
Construction Materials	13,696	14,278	5,344	5,400	4%	1%
Durable Goods	444	457	4,848	4,941	3%	2%
Energy	5,273	5,657	4,832	5,198	7%	8%
Food and Beverages	3,637	3,937	6,452	6,865	8%	6%
Machinery, Electronics, Transp Equip	782	815	8,802	9,151	4%	4%
Paper and Printed Materials	612	671	1,474	1,707	10%	16%
Pharmaceuticals	75	75	2,847	2,849	0%	0%
Textiles and Leather	534	554	4,134	4,328	4%	5%
Warehouse and Terminal Moves	1,246	1,319	6,851	7,474	6%	9%
Waste	1,281	1,339	340	350	5%	3%
Grand Total	28,950	30,517	51,183	53,689	5%	5%

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

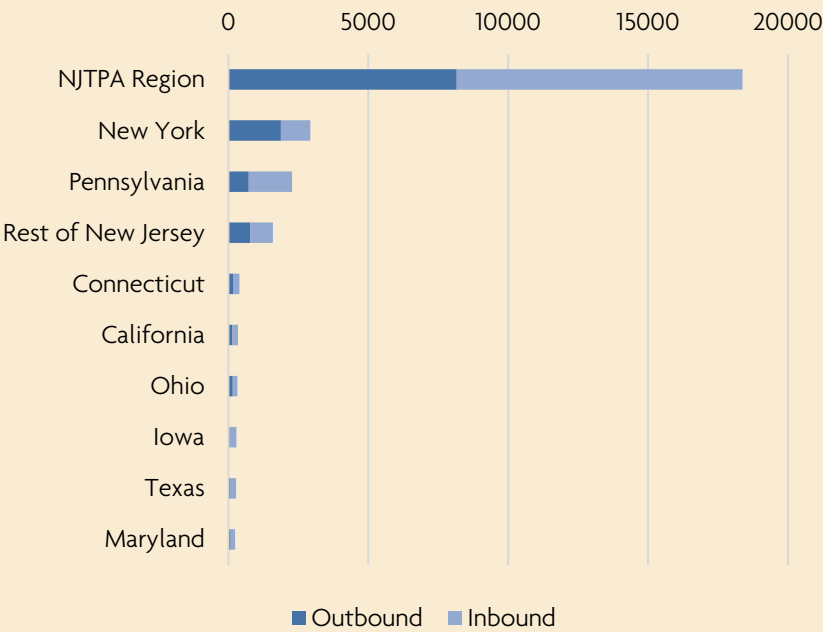
COMMODITY VOLUMES AND DIRECTION

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

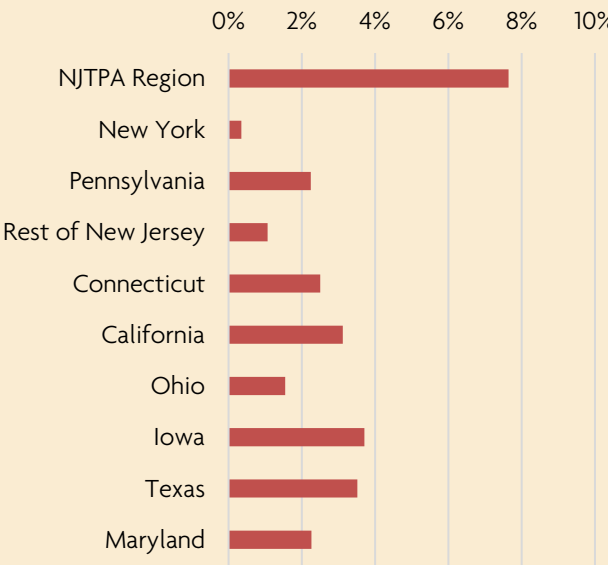
Passaic County's largest trading partners will continue to be other counties in the NJTPA region, followed by New York, Pennsylvania, and portions of New Jersey outside the NJTPA region. The volume of trade with other counties in the NJTPA region is expected to grow at a greater rate (8 percent) than trade with other top trading partners between 2020 and 2050.

Thousands of Tons by Domestic Trading Partner, 2050



Source: NJTPA Freight Forecasting Tool, 2020

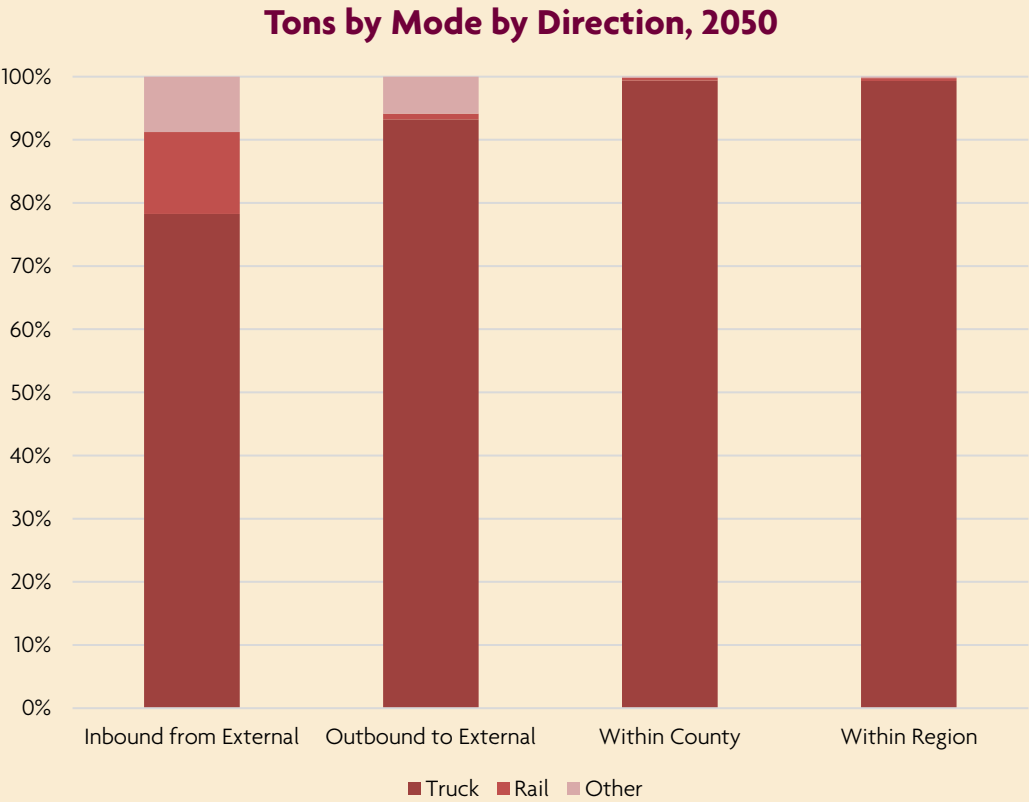
Growth, 2020-2050



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 94 percent of all freight tons, while rail is expected to move 3 percent and other modes are expected to carry about 3 percent. Rail is expected to move 13 percent of inbound tonnage, and truck will carry about 99 percent of intracounty and intraregional freight moves.



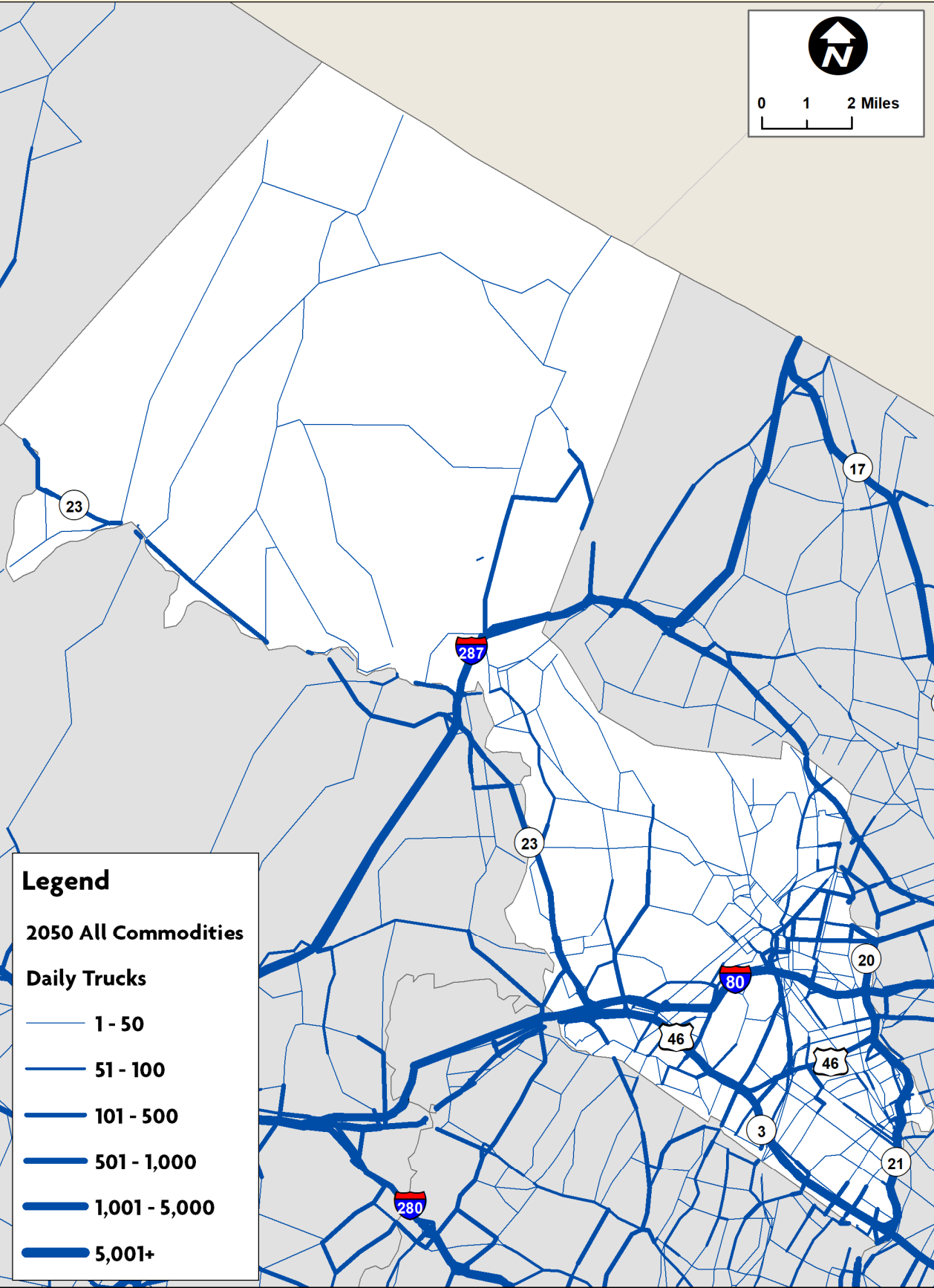
Source: NJTPA Freight Forecasting Tool, 2020

Future Highway Network Utilization

In 2050, 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 commodity trucks traveling on Interstates 80 and 287 each day is expected to increase by 500 to 1,000 in each direction between 2020 and 2050. Routes 3, 21, and 46 are expected to carry 300-400 more commodity trucks per day in each direction by 2050.

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

Highway Network Utilization, 2050



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.

Passaic County Freeholder John Bartlett is First Vice Chair 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.