

SUBREGIONAL FREIGHT PROFILE

Somerset 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 331,164, Somerset is the 13th most populous County in the State, and 10th in the NJTPA region. Somerset County's population has historically grown more rapidly than the State overall, though growth slowed since 2000. The median household income in Somerset County, in constant 2018 dollars, rose by 4 percent from 2010 to 2018.

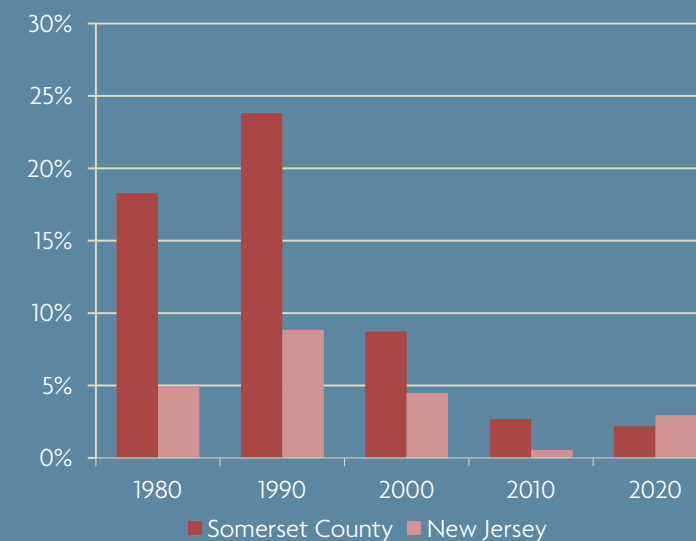
Somerset County is home to:

- 331,164 people
- More than 10,300 businesses that employ 189,400 people; about 32 percent of these jobs are in industry sectors that are highly dependent on freight movement
- About 35.7 million tons of domestic freight shipped or received annually
- Approximately 4.5 million e-commerce packages delivered 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

Highlights

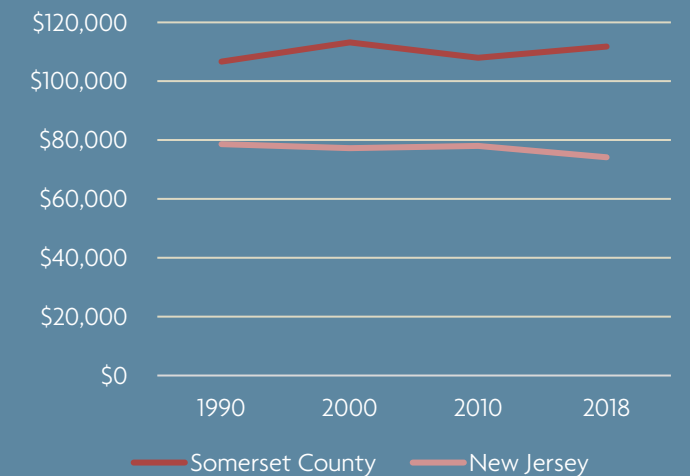
Population Growth by Decade

Source: U.S. Census Bureau



Median Household Income, Constant 2018 Dollars

Source: U.S. Census Bureau



EMPLOYMENT

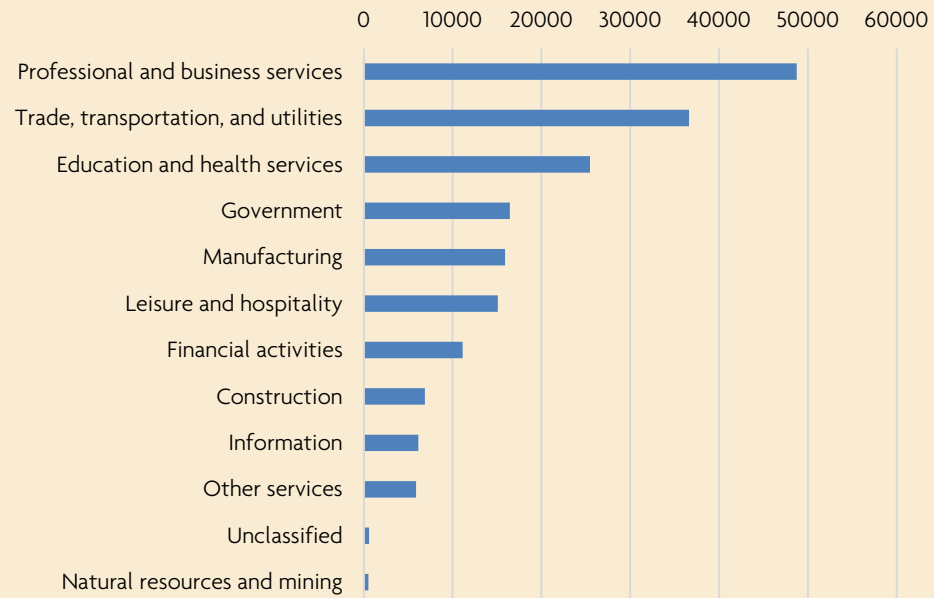
The County's economy employs 189,400 people in more than 10,300 establishments. About 32 percent are employed in "freight-intensive" industries, such as construction, manufacturing, mining and extraction, retail trade, wholesale trade, and logistics. About 68 percent are employed in industries that may 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 Somerset County, by all modes of transportation (truck, rail, pipeline, 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).

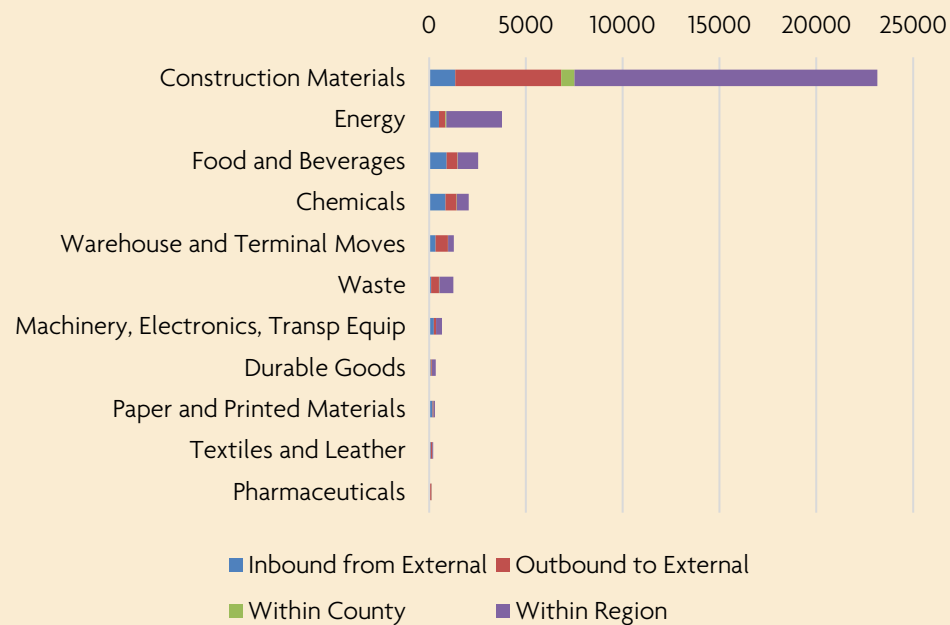
For domestic tonnage with an origin and/or destination in the County, almost 65 percent consists of construction materials, most of which travel between Somerset County and locations in the NJTPA region. Other leading commodities in Somerset County include moves of energy products, food and beverages, chemicals, and mixed or unspecified freight from warehouses or terminals.

Employment by Industry, 2019



Source: U.S. Bureau of Labor Statistics

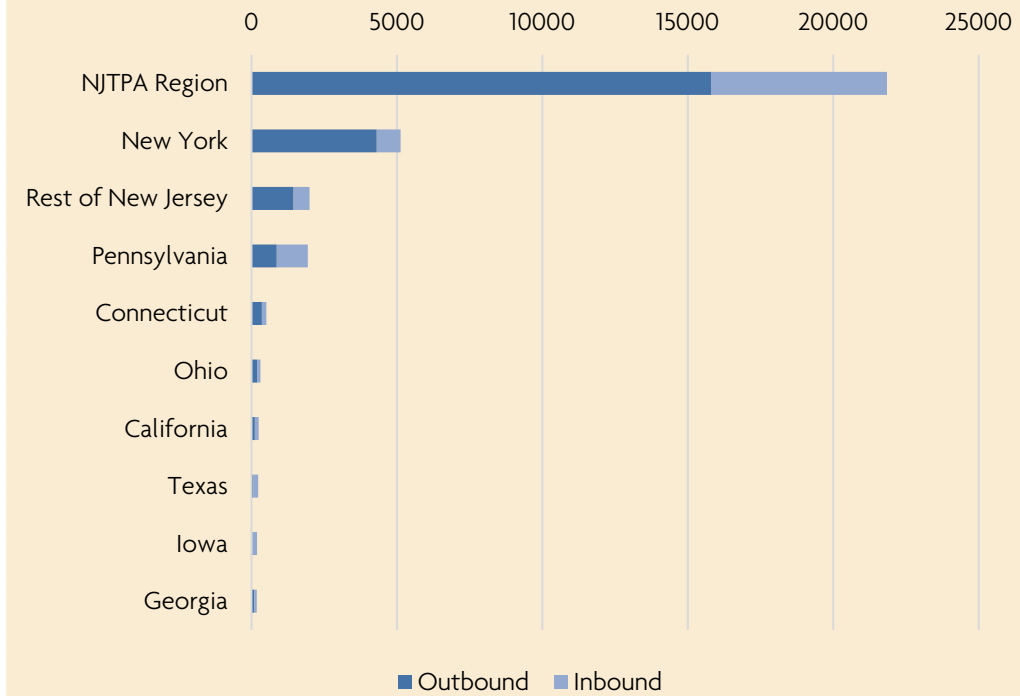
Thousands of Tons by Commodity by Direction, 2020



Source: NJTPA Freight Forecasting Tool, 2020

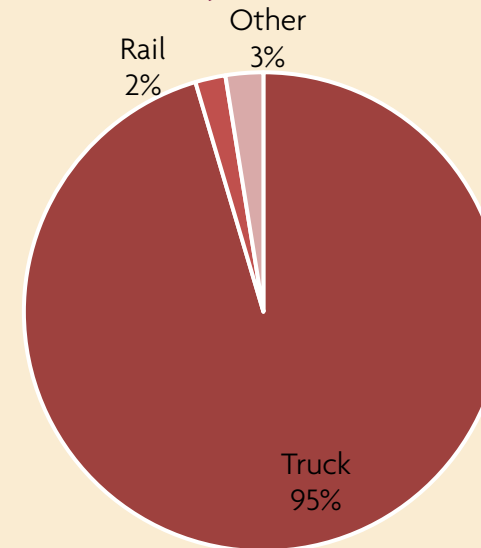
E-commerce has a growing presence in the retail landscape. Some of the freight shipments described in this profile include goods that are ultimately delivered to consumers who shop online. In 2019, about 4.5 million e-commerce shipments containing 6 million items were delivered to consumers in Somerset 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

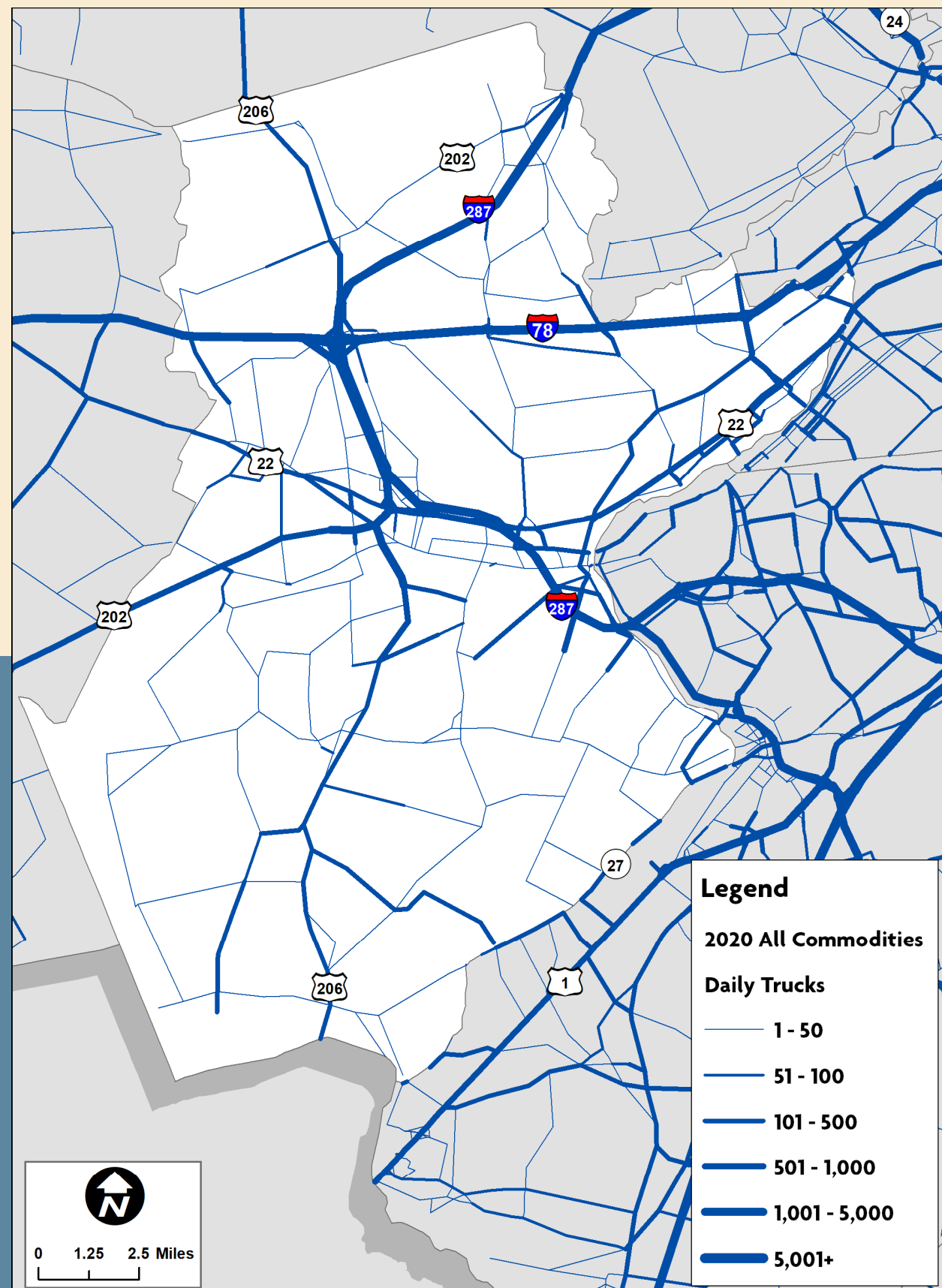
Somerset County's major trading partners are, not surprisingly, its neighbors. As illustrated to the left, locations in the NJTPA region are the greatest origins of inbound freight and destinations for outbound freight. Much of the outbound freight is construction material extracted from Somerset County quarries. 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 Somerset 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 Somerset County, 95 percent travels by truck, 2 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

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.

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.

Interstate 78, which runs the length of the County, and portions of Interstate 287, which is in the eastern, central, and northern parts of the County, accommodate about 6,000 commodity trucks in each direction, while portions of routes 202 and 206 carry more than 1,000 commodity trucks in each direction daily.

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 production establishments are in Somerset near Interstate 287 and in Branchburg along routes 202 and 22. Sales establishments are clustered in Bridgewater, Hillsborough, and the Route 22 corridor east of Interstate 287.

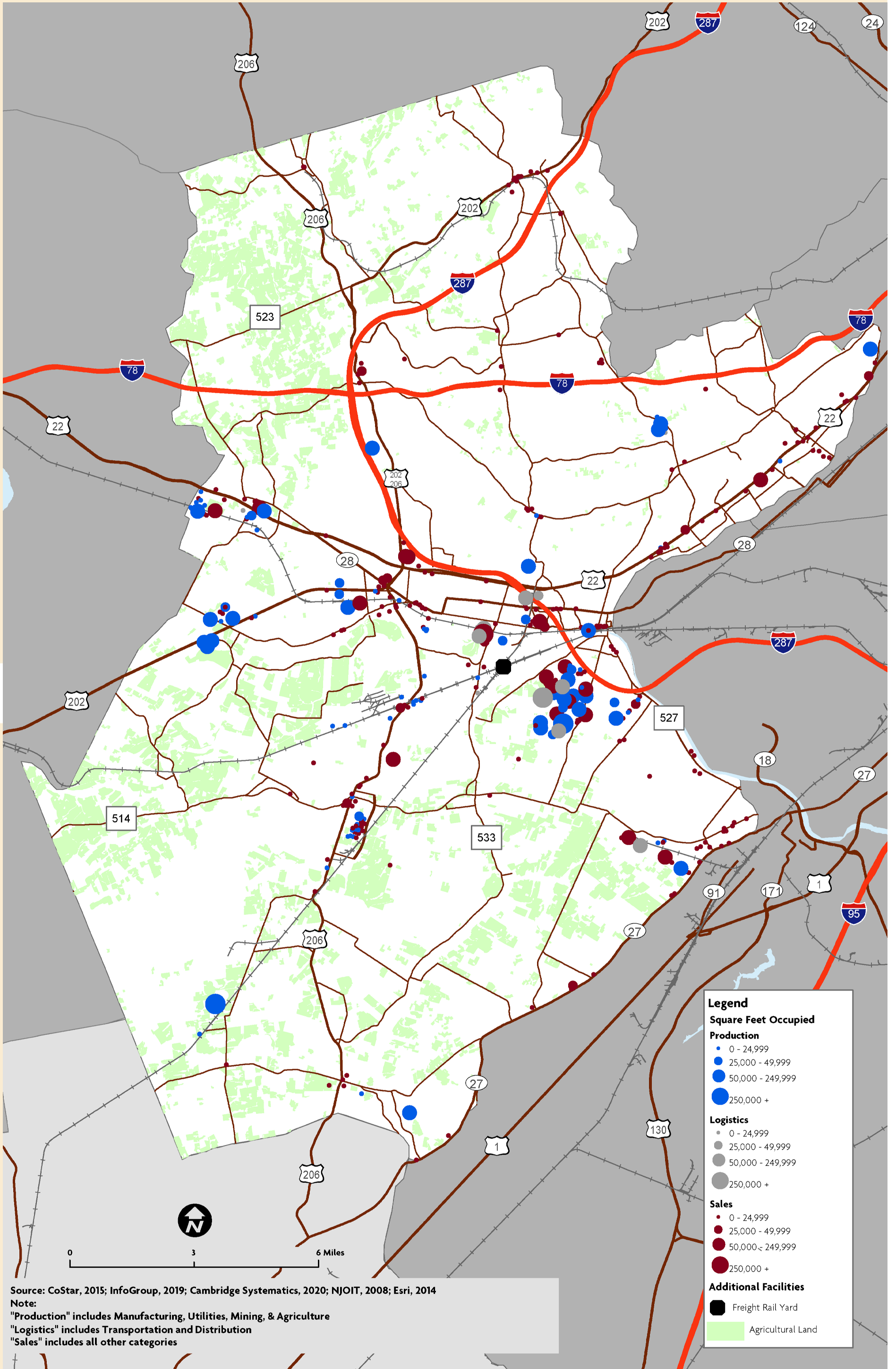
Top 5 Business Establishments in Freight-Generating Industry Sectors, by Size

Company	Square Footage	Municipality	Business Type
Amazon Fulfillment Center	616,000	Franklin Township	Logistics
Johnson & Johnson	440,000	Montgomery Township	Production
GAF Materials	310,000	Bridgewater Township	Sales
Catalent Pharma Solutions	265,000	Franklin Township	Production
IMClone Systems	250,000	Branchburg Township	Production

Source: Infogroup, 2019; CoStar, 2015

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

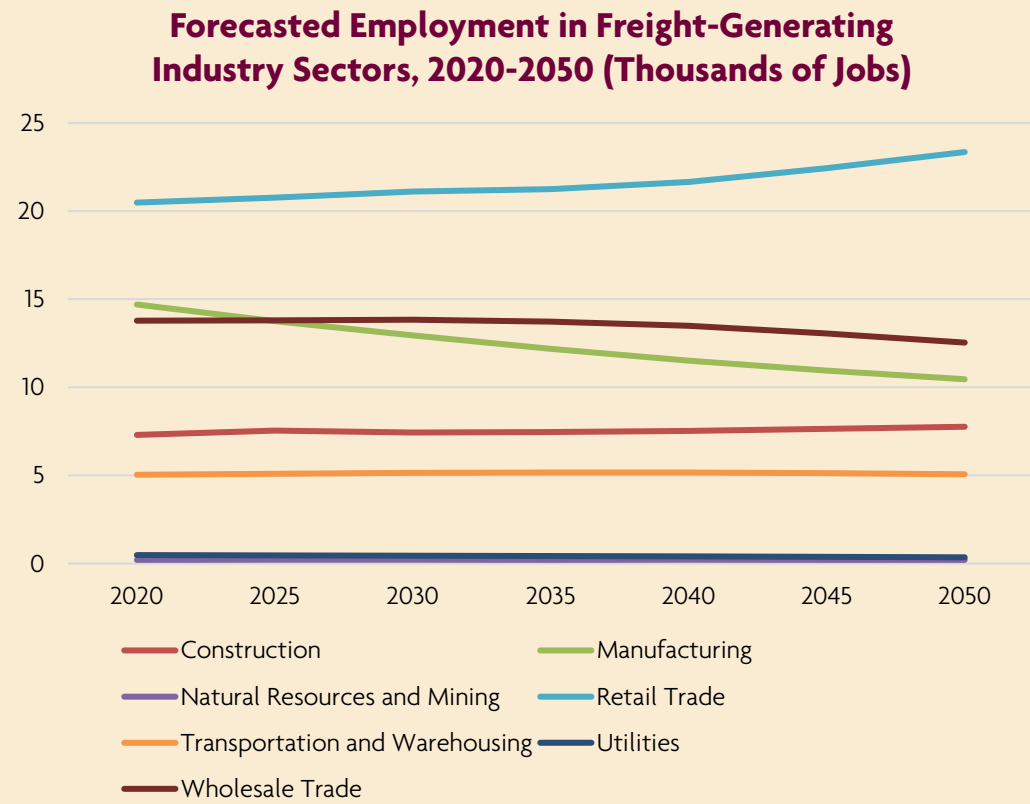
Business Square Footage by Industry Type



Source: 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 4 percent during the forecast period. The manufacturing, utilities, wholesale trade, and natural resources sectors are expected to experience reductions in employment. Retail trade and construction employment is expected to increase by 14 percent and 5 percent, respectively, between 2020 and 2050.



Source: Moody's, 2020

Commodity Flow Forecast, 2020-2050

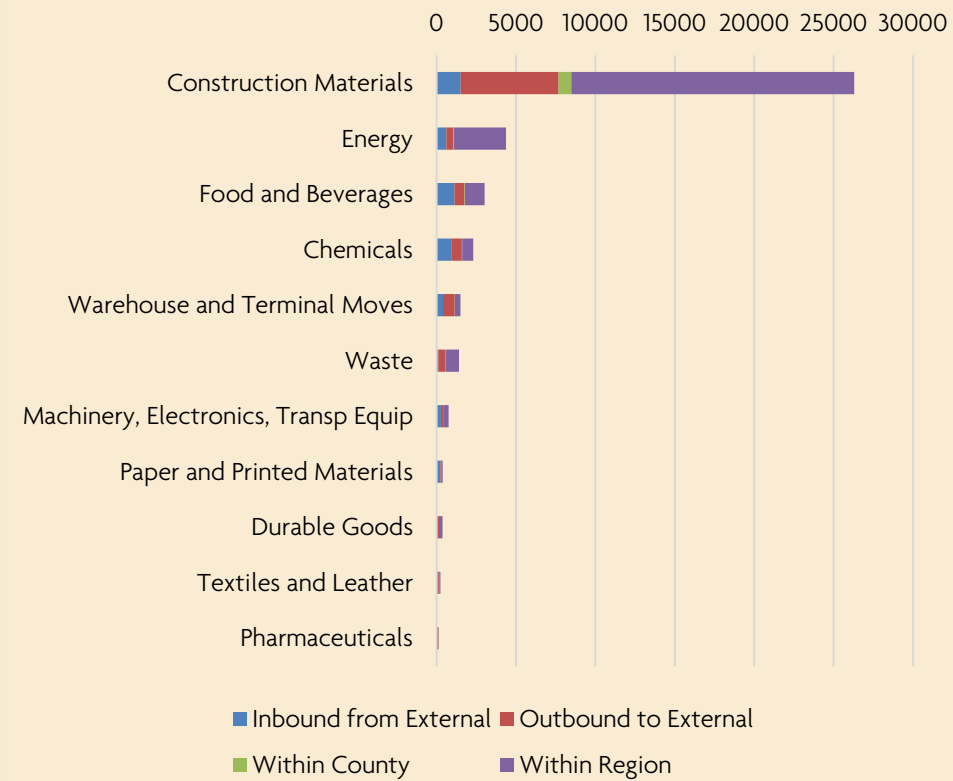
By 2050, commodity flows into, out of, and within Somerset County are expected to have increased by about 15 percent, from 35.7 million tons to 40.8 million tons (a difference of about 5.1 million tons). Construction materials is expected to remain the number one commodity transported by tonnage, followed by energy products and food and beverages. Chemicals, machinery, electronics, and transportation equipment, and warehouse and terminal moves 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	2,049	2,314	7,734	8,718	13%	13%
Construction Materials	23,155	26,294	4,483	5,008	14%	12%
Durable Goods	340	378	2,651	2,998	11%	13%
Energy	3,765	4,375	3,446	4,013	16%	16%
Food and Beverages	2,530	3,030	4,962	5,847	20%	18%
Machinery, Electronics, Transp Equip	663	757	7,318	8,428	14%	15%
Paper and Printed Materials	301	391	737	1,058	30%	44%
Pharmaceuticals	125	139	3,391	3,786	12%	12%
Textiles and Leather	207	244	1,741	2,063	18%	18%
Warehouse and Terminal Moves	1,280	1,508	6,928	8,335	18%	20%
Waste	1,255	1,419	349	396	13%	13%
Grand Total	35,670	40,849	43,740	50,649	15%	16%

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

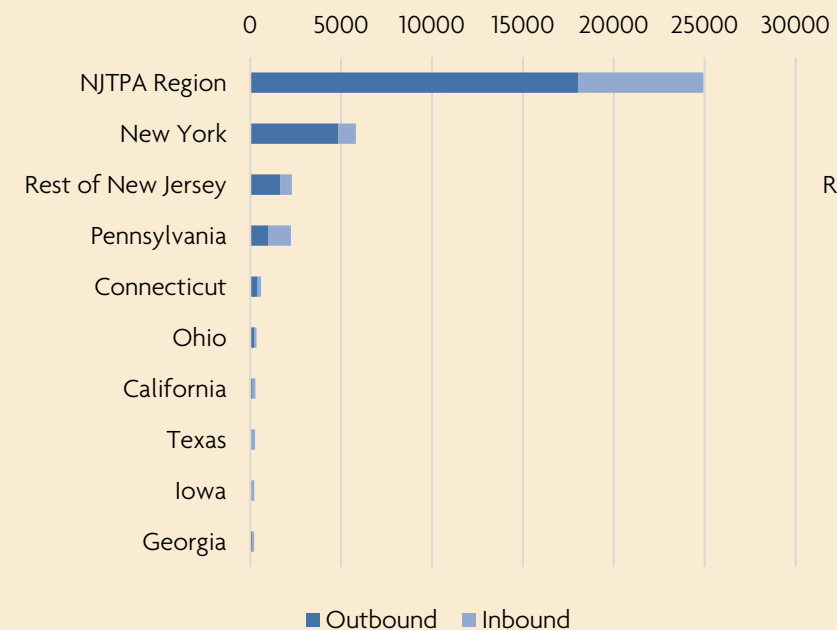
COMMODITY VOLUMES AND DIRECTION

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

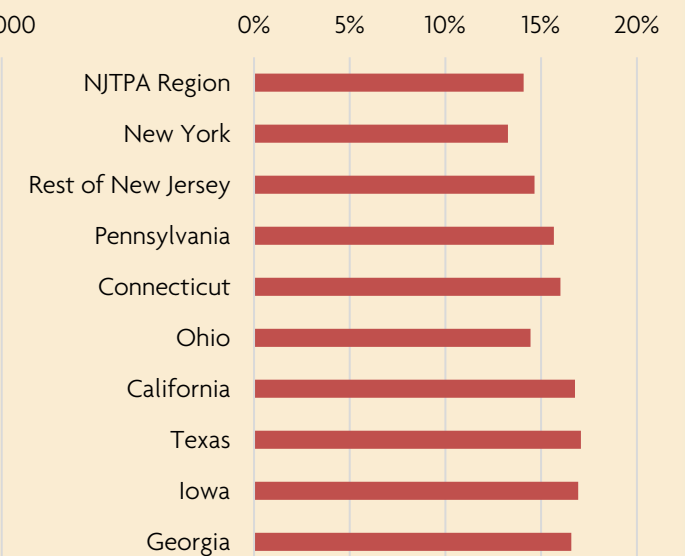
Somerset County's largest trading partners will continue to be other counties in the NJTPA region, followed by New York, portions of New Jersey outside the NJTPA region, and Pennsylvania. The volume of trade with Texas, Iowa, California, and Georgia are expected to grow at a greater rate (17 percent) 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

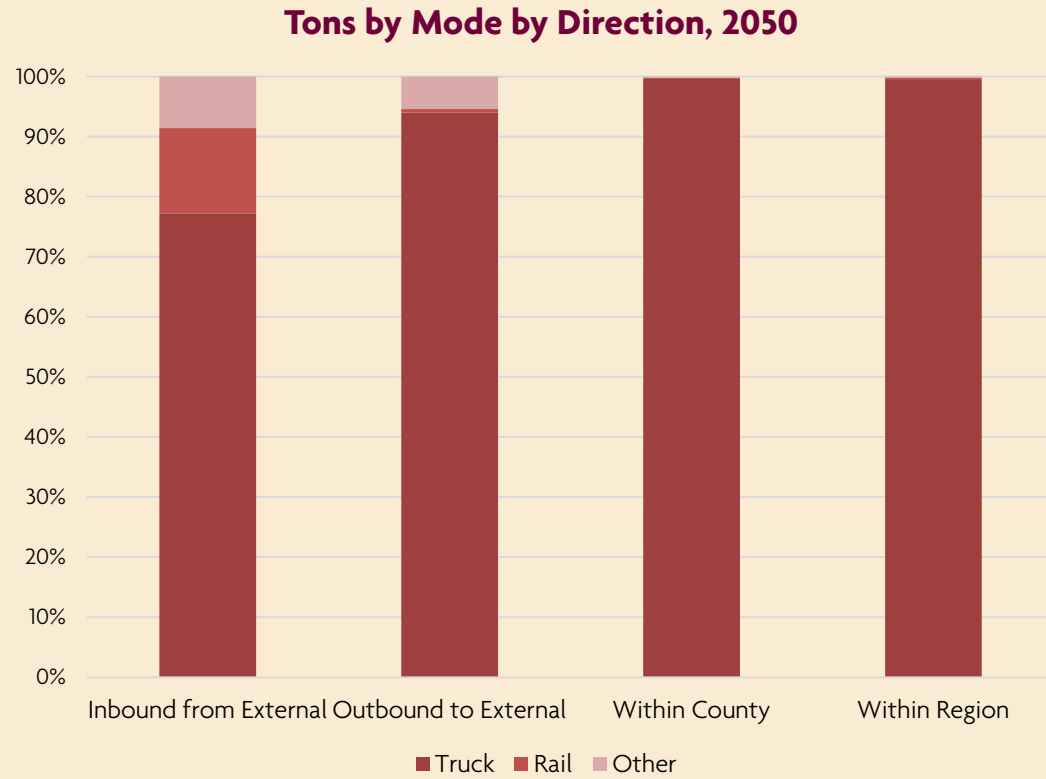
Growth, 2020-2050



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 95 percent of all freight tons, while rail is expected to move 2 percent and other modes are expected to carry about 3 percent. Rail is expected to move 14 percent of inbound tonnage, and truck will carry about 99 percent of intracounty and intraregional freight moves.



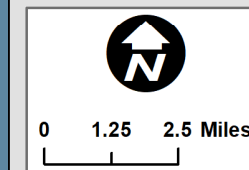
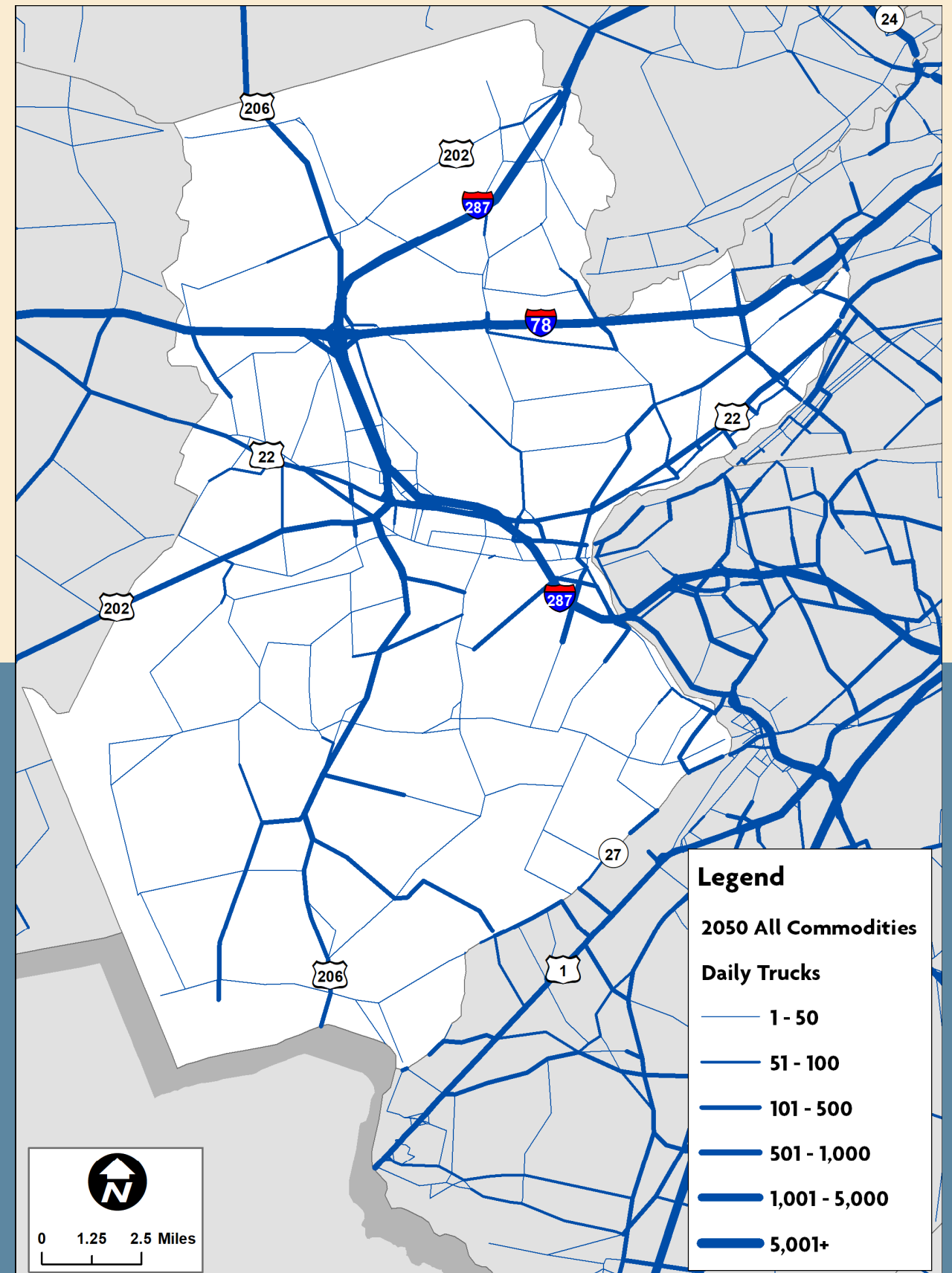
Source: NJTPA Freight Forecasting Tool, 2020

Future Highway Network Utilization

In 2050, 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 commodity trucks traveling on Interstates 78 and 287 is expected to increase by about 400 trucks per day in each direction between 2020 and 2050. Portions of Routes 202 and 206 are expected to see numeric increases of between 100-200 daily trucks in each direction during the forecast period.

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

Somerset County's representative on the NJTPA Board of Trustees is County Freeholder Sara Sooy.

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.