

REGIONAL FREIGHT COMMODITY PROFILE

Durable Goods

COMMODITY BUNDLE OVERVIEW

This bundle consists of three specific commodity groups of durable goods not classified in other commodity bundles. These include: furniture and fixtures, which includes household or office furniture and pallets; forest products, including barks, gums, and other products originating from trees; and ordinance and accessories, which includes firearms and ammunition.

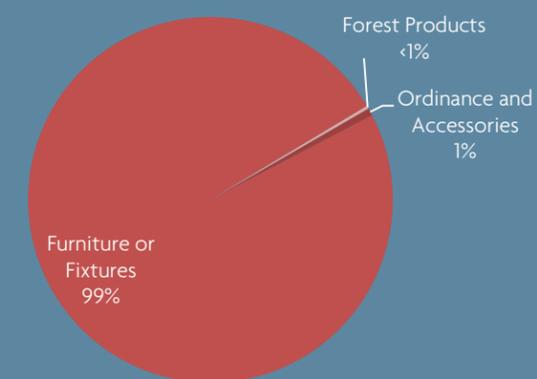
The primary data source for commodity flows reported in this profile is NJTPA's Freight Forecasting Tool, which generates commodity freight data and forecasts for a 2010 base year and 2040 forecast year. This profile describes freight flows between domestic origins and destinations.

- 2.8 million tons in 2010, increasing 33% to 3.7 million tons in 2040.
- Represents 0.4% of the goods moved in the region by weight and 0.6% by value.
- 1,294 business establishments employing 13,379 people send or receive goods in this bundle.
- More than 26 million square feet of warehousing/distribution center space dedicated to this commodity bundle.
- 99% moves by truck, 1% by rail, and less than 1% moves by other modes

Highlights

Composition

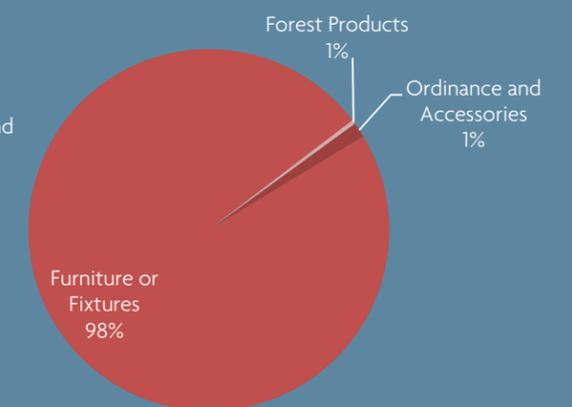
Domestic Tons in 2010



Total Tons: 2.8 million

Source: NJTPA Freight Forecasting Tool, 2012

Domestic Value in 2010



Total Value: \$11 billion

Source: NJTPA Freight Forecasting Tool, 2012

Furniture or fixtures composes 99 percent of all goods in the durable goods commodity bundle by weight, and 98 percent by value. Ordinance and accessories represents 1 percent by weight and by value, and forest products represent less than 1 percent by weight and about 1 percent by value.

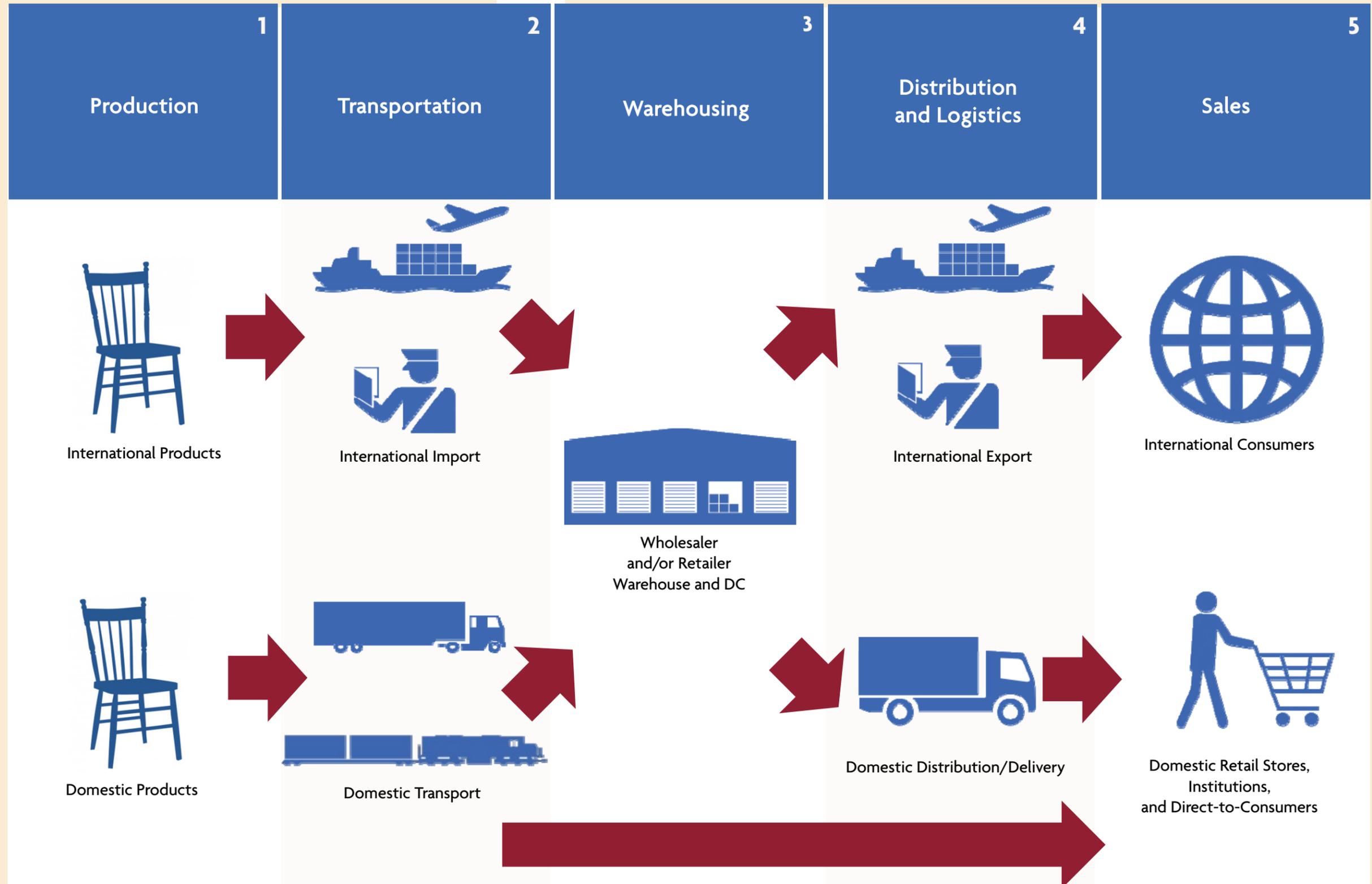
LOGISTICS SUMMARY

The graphic to the right represents the supply chain for the durable goods commodity bundle from initial production of finished goods to delivery of goods to consumers.

This supply chain consists of five steps:

1. Internationally and domestically sourced goods are produced by manufacturers.
2. International products are transported by ocean vessel to U.S. Ports-of-Entry where they are inspected by U.S. Customs and transloaded to truck or rail intermodal modes. Domestically produced products are transported by truck and rail intermodal.
3. Finished products are sorted and stored at wholesaler or retailer warehouses and distribution centers.
4. Products are distributed to customers via one of two routes:
 - A. By truck to an export distributor or freight forwarder for export by ocean vessel or air.
 - B. By truck from the warehouse or distribution center to retail stores, institutions, or to fulfill direct-to-customer orders.
5. Shipments are delivered to international and domestic consumers, according to customers' specification.

Note that some goods move directly from a primary manufacturer directly to consumers.



Business Locations by Industry Type

Business Square Footage by Industry Type

Durable Goods

Legend

Square Feet Occupied

Production

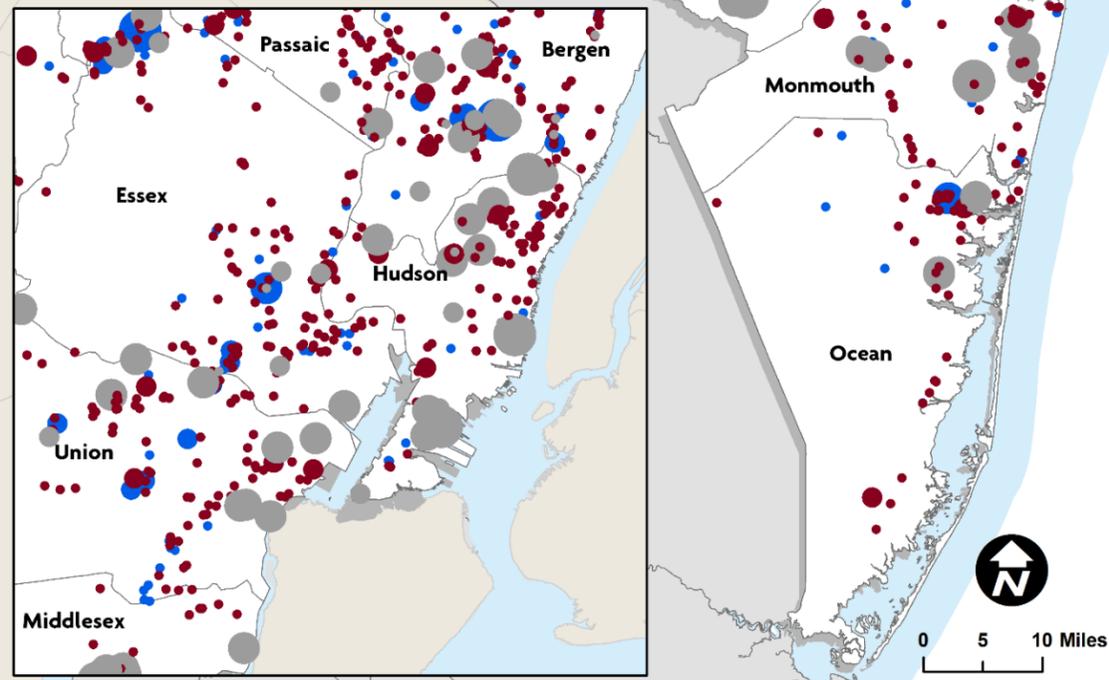
- 0 - 24,999
- 25,000 - 49,999
- 50,000 - 249,999
- 250,000 +

Logistics

- 0 - 24,999
- 25,000 - 49,999
- 50,000 - 249,999
- 250,000 +

Sales

- 0 - 24,999
- 25,000 - 49,999
- 50,000 - 249,999
- 250,000 +



Source: Co-Star, 2014; NJOIT, 2008; Esri, 2014.

Note: "Production" includes Manufacturing, Utilities, Mining & Agriculture, corresponding to Step 1 in the Logistics Summary on Pages 2-3.

"Logistics" includes Wholesale Trade and Warehousing, corresponding to Steps 2-4 in the Logistics Summary on Pages 2-3.

"Sales" includes Retail, Health Care, and Professional Services, corresponding to Step 5 in the Logistics Summary on Pages 2-3.

BUSINESS LOCATIONS SUMMARY

The map on the previous page illustrates the locations of facilities that ship, handle, or receive commodities in this bundle, including:

- Production facilities such as manufacturing businesses where goods are produced, and correspond to Step 1 in the logistics summary chart on pages 2 and 3.
- Logistics facilities, including warehousing and transportation facilities through which goods are distributed, and correspond to steps 2 through 4 on the logistics summary chart.
- Sales, represented in Step 5 on the logistics summary chart, including retail, services, and institutional establishments where goods are sold.

The largest clusters of business locations handling durable goods are located in southern Bergen and Passaic counties, Hudson, eastern Essex, and northern and eastern Union County, and Middlesex County. Smaller clusters cover portions of Morris, Somerset, Monmouth, and Ocean counties.

KEY INDUSTRY TRENDS

The following trends are shaping demand for durable goods commodities today, and projected demand in the future:

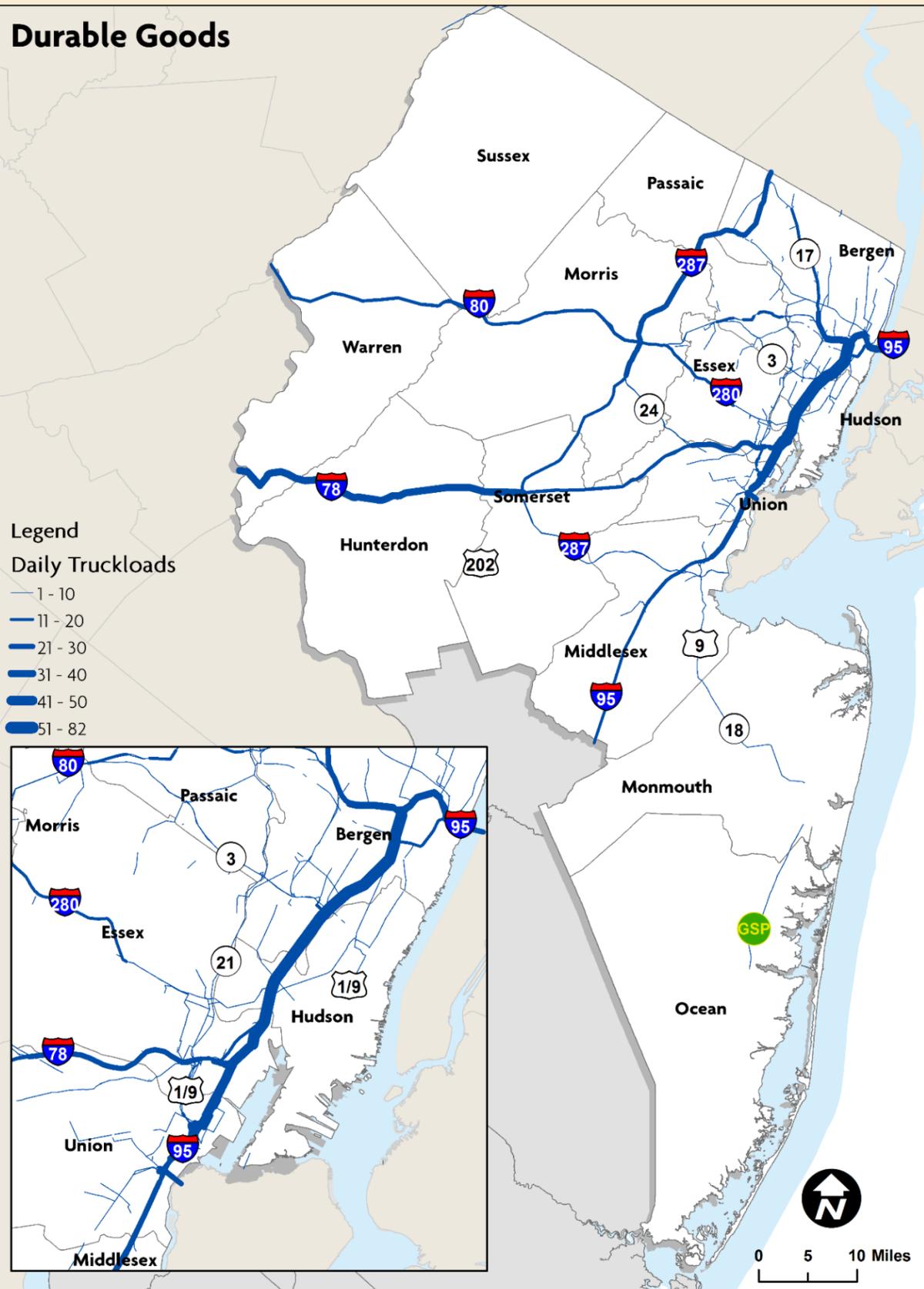
- Rising consumer spending leads to growing demand for durable goods.
- Rising costs associated with overseas production and quality control are leading some durable goods manufacturers to return production to the U.S. or nearby nations.
- Electronic features are being added to some furniture and durable goods that allow sync-and-control with mobile devices, thus changing the methods of production, assembly, and marketing.
- Consumer purchases of goods made online or using mobile devices, with requests for home delivery, are making up a growing share of sales of these goods.

Major Furniture Retailer in Union County



Highway Network Utilization, 2010

Durable Goods



Source: NJTPA Freight Forecasting Tool, 2012; NJOIT, 2008; Esri, 2014.

HIGHWAY NETWORK FLOWS OF DURABLE GOODS

The map to the left shows the volume of truckloads of goods in this bundle traveling on highway segments in the NJTPA region every day.

Portions of the NJ Turnpike between Exit 14 in Essex County and Exit 18 in Bergen County carry more than 50 truckloads of durable goods daily. Parts of the NJ Turnpike between Exit 13 in Union County and Exit 14, the George Washington Bridge, Interstate 78 west of Interstate 287, and Interstate 80 in the vicinity of Hackensack in Bergen County carry 40-50 truckloads every day. Portions of the NJ Turnpike south of Exit 13, Interstate 78 in Essex and eastern Union counties, carry 30-40 truckloads of durable goods daily.

COMMODITY FLOW SUMMARY

Collectively, about 2.8 million tons of goods in this bundle, worth \$11 billion, moved into, out of, through, or within the NJTPA region in 2010. By 2040, nearly 3.7 million tons worth more than \$16 billion will move in the region. These projections represent 33 percent growth by tons and 45 percent growth by value.

This bundle represented 0.4 percent of the goods moved in the region by weight and 0.6 percent by value in 2010. By 2040, these shares are expected to remain the same.

As the table below shows, the top five commodities in this bundle are: furniture or fixtures (not elsewhere classified); beds, dressers, chests, etc.; household or office furniture not elsewhere classified; metal lockers or partitions; and benches, chairs, or stools. Together they represent 80 percent of all of the durable goods commodities moved into, out of, or within the NJTPA region by weight.

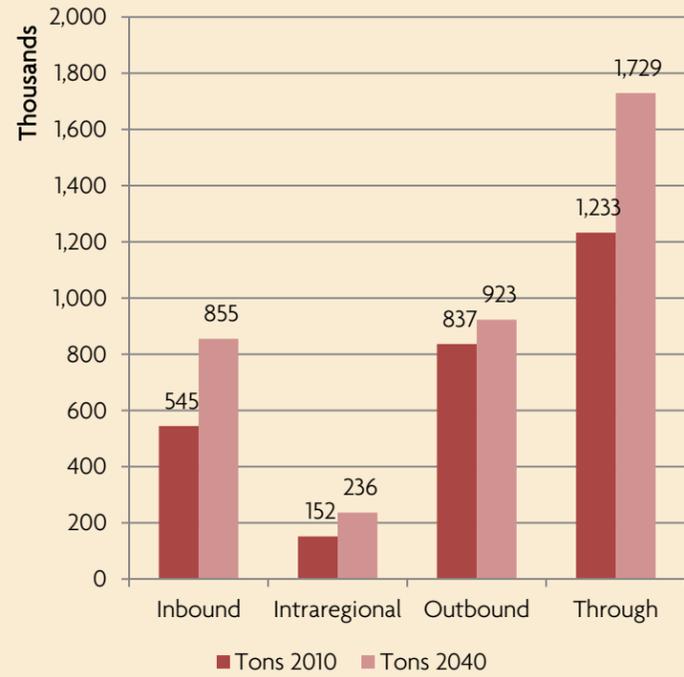
Commodities in the Durable Goods Commodity Bundle

STCC4 Commodity	Tons (thousands)	Value (millions)	STCC4 Commodity	Tons (thousands)	Value (millions)
2599 Furniture or Fixtures, Not Elsewhere Classified	798	\$1,647	2514 Buffets, China Closets, Etc.	9	\$56
2516 Beds, dressers, chests, Etc.	196	\$201	2518 Childrens Furniture	8	\$52
2519 Household or Office Furn, Not Elsewhere Classified	108	\$286	1961 Small Arms Ammo, 30mm or Less	6	\$8
2542 Metal Lockers, partitions, Etc.	74	\$148	0842 Barks or Gums, crude	2	\$12
2511 Benches, chairs, Stools	55	\$306	2510 Household or Office Furniture	2	\$7
2513 Sofas, Couches, Etc.	54	\$280	1929 Ammo or Related Parts, Nec	2	\$33
2515 Bedsprings or Mattresses	52	\$310	0840 Barks or Gums,crude	1	\$3
2512 Tables or Desks	48	\$152	1900 Ordnance or Accessories	1	<\$1
2541 Wood Lockers, partitions, Etc.	38	\$249	1931 Tracked Combat Vehic or Parts	1	\$15
2591 Venetian Blinds, shades, Etc.	25	\$71	2540 Lockers, Partitions or Shelves	<1	<\$1
2531 Public Building or Related Furniture	25	\$140	0861 Misc Forest Products	<1	<\$1
2517 Cabinets or Cases	16	\$176	1951 Small Arms, 30mm or Less	<1	\$1
2590 Misc Furniture or Fixtures	12	\$20	0860 Misc Forest Products	<1	<\$1

Source: NJTPA Freight Forecasting Tool, 2012

Note: "STCC4" represents the four-digit Standard Transportation Commodity Code (STCC)

Domestic Tons by Direction, 2010 and 2040



About 1.2 million tons of durable goods (45 percent of all tons in this bundle) passed through the NJTPA region. About 837,000 tons (30 percent) are moving outbound, 545,000 tons (20 percent) are moving inbound, and 152,000 tons (5 percent) are moving intraregionally.

About 68 percent of the goods in this bundle imported to the NJTPA region originate in one of the locations shown in the graph to the right. About 56,000 tons originated in the Grand Rapids region of Michigan. Among the top origins, flows are projected to grow by 52 to 58 percent by 2040.

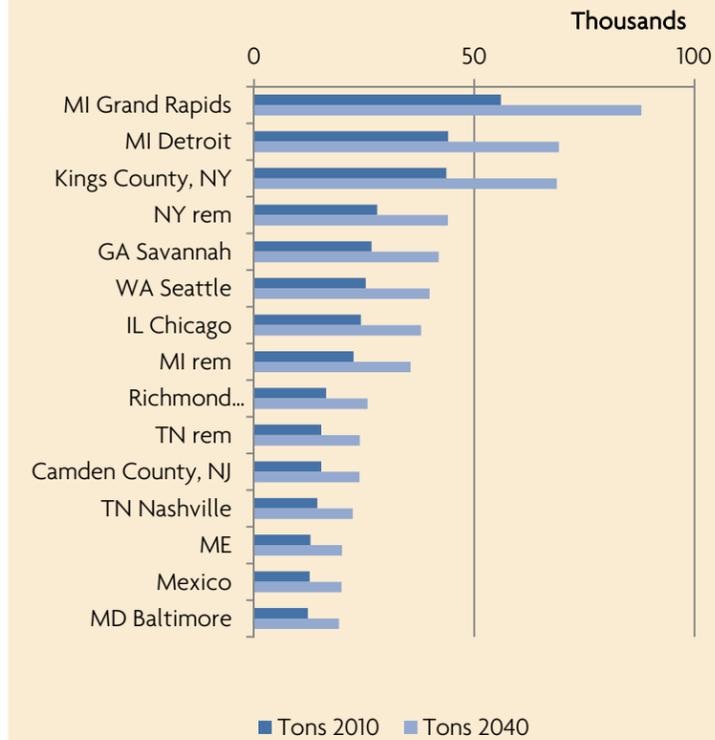
The locations shown in the far-right graph are the destinations of 72 percent of the goods in this commodity bundle that leave the NJTPA region. Kings County, NY (Brooklyn), the Chicago region of Illinois, Philadelphia County in Pennsylvania, and portions of Connecticut outside the New York metropolitan region are among the top destinations. Among the top destinations, flows to Washington, DC are expected to grow fastest (6 percent) and flows to Vermont and New Hampshire are expected to decrease by 3 percent by 2040.

Source: NJTPA Freight Forecasting Tool, 2012

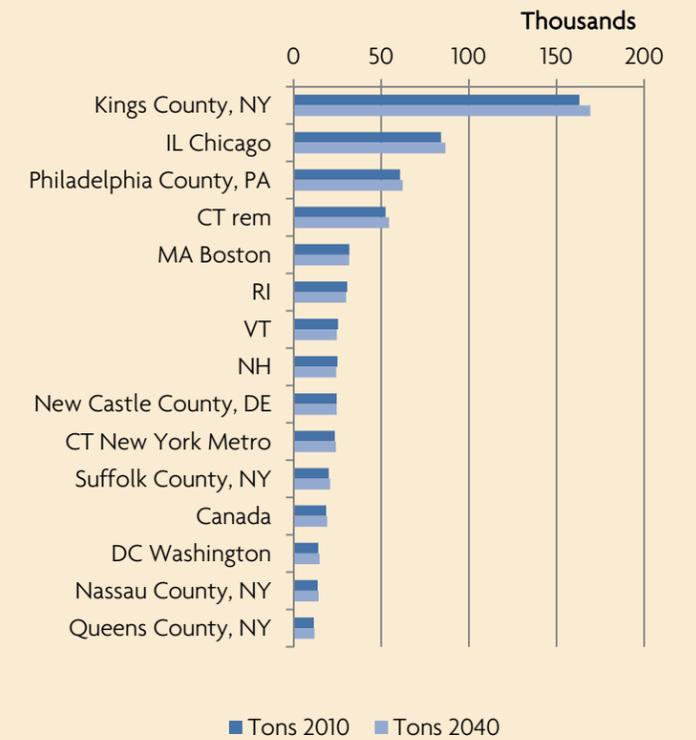
Nearly All of the Durable Goods Commodities Move by Truck (Left) . About One Percent Move by Rail (Right)



Top Origins of Inbound Commodities (Left) and Top Destinations of Outbound Commodities (Right), 2010 and 2040



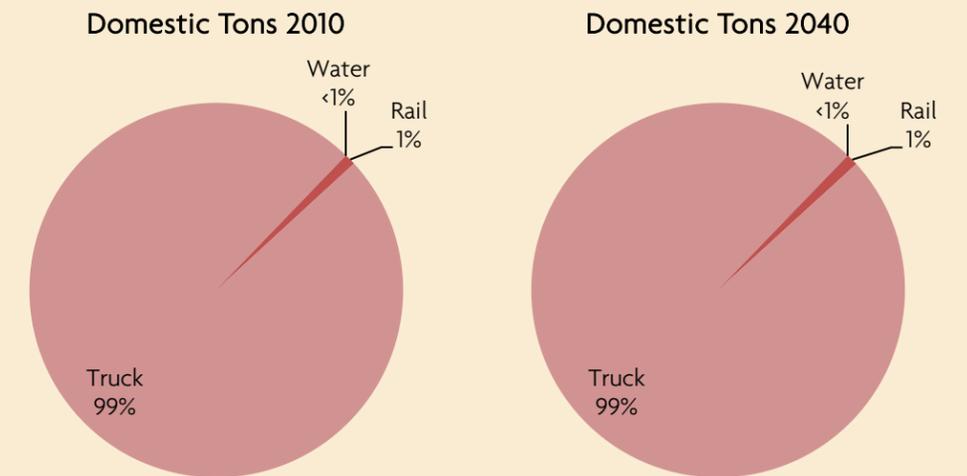
Source: NJTPA Freight Forecasting Tool, 2012
Note: "rem" stands for "remainder," which refers to the portions of a state outside major metropolitan regions.



Source: NJTPA Freight Forecasting Tool, 2012
Note: "rem" stands for "remainder," which refers to the portions of a state outside major metropolitan regions.

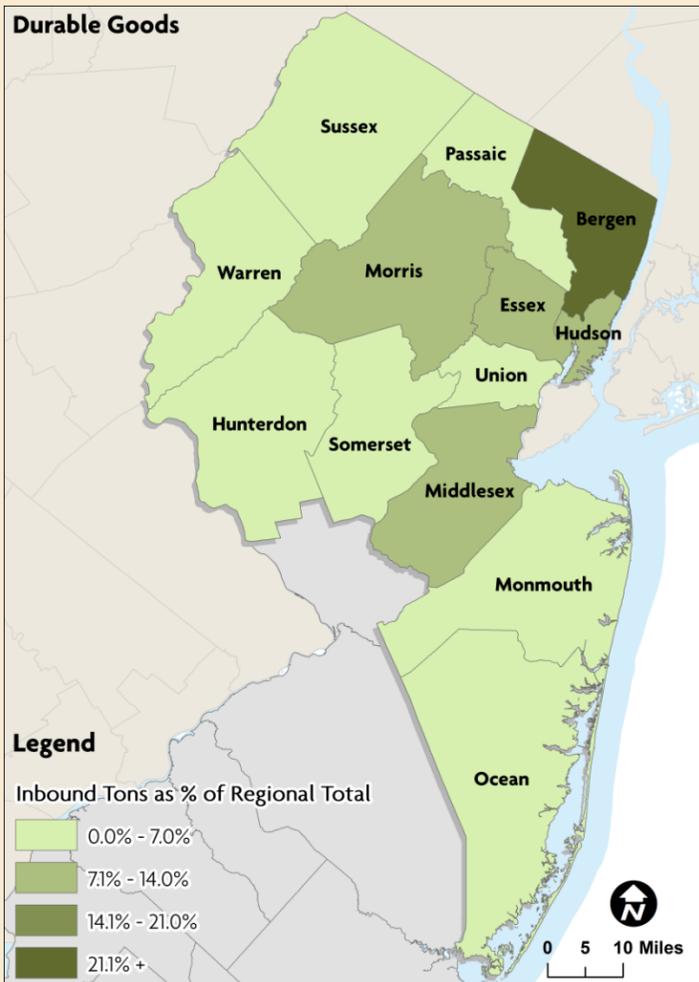
Mode Splits, 2010 and 2040

In 2010, about 99 percent of the durable goods commodities moving in the NJTPA region traveled by truck. Rail carried about 1 percent, and less than 1 percent moved by domestic water. No significant share of volumes moved by domestic air or other modes. By 2040, the share of tons moving by each mode is expected to remain similar.



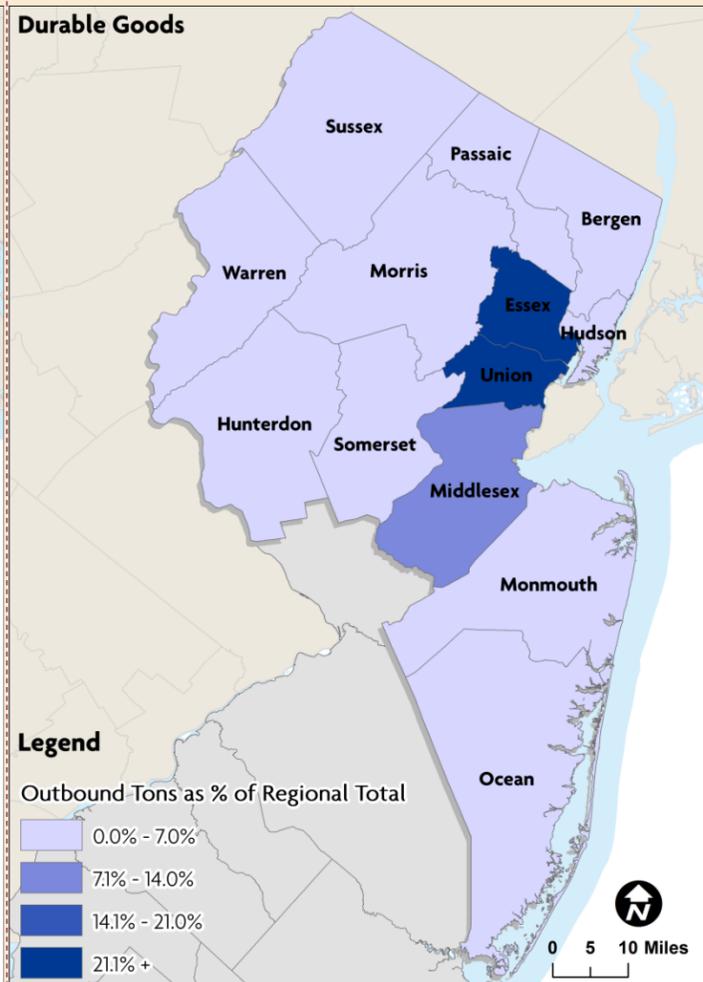
Source: NJTPA Freight Forecasting Tool, 2012

Inbound Domestic Tons by County, 2010



Source: NJTPA Freight Forecasting Tool, 2012; NJOIT, 2008; Esri, 2014.

Outbound Domestic Tons by County, 2010



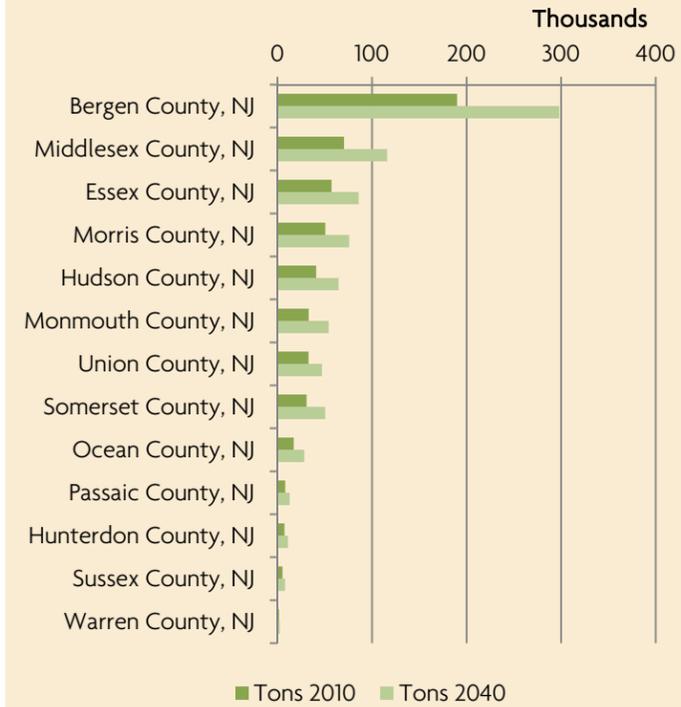
Source: NJTPA Freight Forecasting Tool, 2012; NJOIT, 2008; Esri, 2014.

The maps above and the graphs on the opposite page show the top counties of origin and top counties of destination for goods in this commodity bundle traveling to or from the NJTPA region.

About 35 percent of inbound goods in the durable goods commodity bundle are destined for Bergen County. Projected growth rates in inbound durable goods tonnage between 2010 and 2040 range from 43 percent (Union County) to 65 percent (Middlesex County).

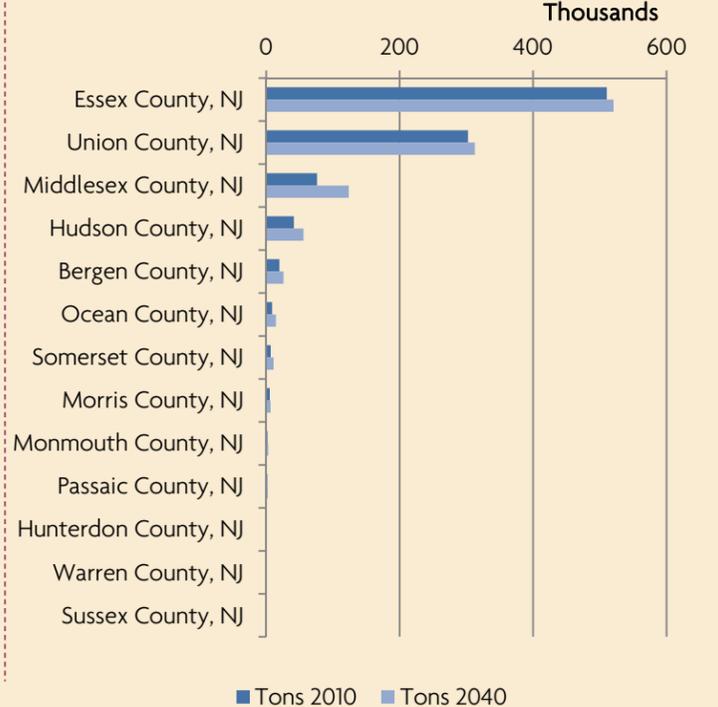
About 53 percent of all goods in the durable goods commodity bundle traveling outbound from the NJTPA region originate in Essex County. Union County is the origin for about 31 percent of outbound shipments of goods in this bundle. Projected growth rates in outbound tonnage between 2010 and 2040 range from -5 percent (Sussex County) to 63 percent (Ocean County).

Inbound Domestic Tons by County, 2010 and 2040



Source: NJTPA Freight Forecasting Tool, 2012

Outbound Domestic Tons by County, 2010 and 2040



Source: NJTPA Freight Forecasting Tool, 2012

References

For more information on durable goods commodity flows and logistics in the North Jersey region and elsewhere, consult the following sources:

- National Association of Wholesaler-Distributors, www.naw.org
- National Retail Federation, www.nrf.com
- Greater Metropolitan Furnishings Association, www.gnyhfa.org
- Bureau of Labor Statistics, U.S. Department of Labor, www.bls.gov

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, 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.

ABOUT THE STUDY

The NJTPA regional Freight Commodity Profiles study enhanced the NJTPA's freight modeling tools, analyzed, and identified gaps in existing freight and industry data, collected data and information to fill those gaps, and prepared summary data products, including a set of Regional Commodity Profile documents. In addition to supporting freight planning, these profiles will be used in stakeholder outreach and education. Key work tasks included:

- Enhancement of the NJTPA's Freight Forecasting Tool to produce commodity-specific truck trip tables.
- Identification of "Top 11 Regional Commodity Groups" based upon economic and commodity flow data.
- Collection and analysis of data on each of the commodity groups, including: direction of movement; locations of production, shipping, handling, and receiving centers; modes and routes used to transport the commodities.
- Production of "Regional Commodity Profile" documents for each of the Top 11 Regional Commodity Groups, which summarize the data analysis findings using charts, graphs, maps, and descriptive text.

ABOUT THIS PROFILE

The NJTPA developed a Freight Forecasting Tool (FFT) in 2012, which generates alternative domestic freight forecasts to support transportation, land use, and economic development decisions. The FFT was built by Cambridge Systematics, Inc., using commodity flow data from IHS Global Insight and econometric forecasts from the R/ECON model, produced and managed by the Center for Urban Policy Research at Rutgers University. Cambridge Systematics and Parsons Brinckerhoff enhanced the FFT in 2015 to produce commodity group-specific forecast tables.

The NJTPA conducted research on commodity flows and logistics chains for 11 key "commodity bundles," that move in the North Jersey region, including warehouse and terminal moves, food, apparel, paper and printed materials, waste, construction materials, machinery and transportation equipment, other durable goods, pharmaceuticals, chemicals, and hazardous materials. This profile offers an overview of the components, freight demand, and logistics chain for durable goods moving into, out of, through, and within the North Jersey region.

For further information, please contact Jakub Rowinski, NJTPA Project Manager, at jrowinski@njtpa.org. 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.