

## REGIONAL FREIGHT COMMODITY PROFILE

# Food and Beverages

### COMMODITY BUNDLE OVERVIEW

The food and beverages commodity bundle consists of five sub-categories of commodities. The food products category includes processed food products, canned foods, and prepared foods. The farm products category includes fruits, nuts, vegetables, and livestock. The beverages category includes soft drinks, mineral water, and alcoholic beverages. Tobacco products includes cigars, cigarettes, and chewing tobacco.

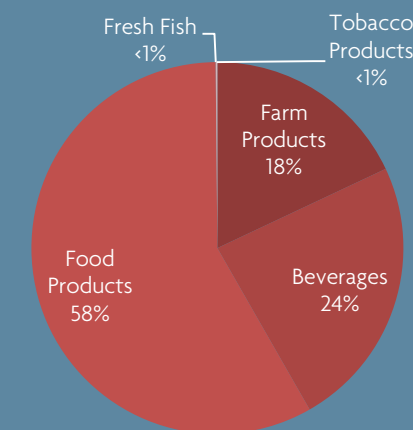
The primary data source for commodity flows reported in this profile is NJTPA's Freight Forecasting Tool, which generates commodity freight data and forecasts for a 2010 base year and 2040 forecast year. This profile describes freight flows between domestic origins and destinations.

- 68 million tons in 2010, increasing 42% to 97 million tons in 2040.
- Represents 10% of the goods moved in the region by weight and 4% by value.
- 3,511 business establishments employing 26,257 people send or receive goods in this bundle.
- More than 29 million square feet of warehousing/distribution center space
- 93% moves by truck, 7% by rail, and less than 1% by air or water..

# Highlights

# Composition

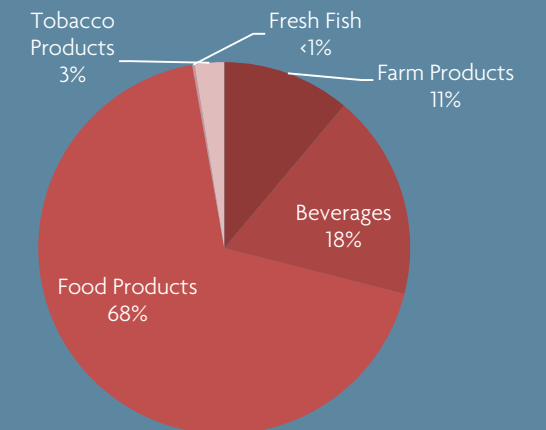
### Domestic Tons in 2010



Total Tons: 68 million

Source: NJTPA Freight Forecasting Tool, 2012

### Domestic Value in 2010



Total Value: \$74 billion

Source: NJTPA Freight Forecasting Tool, 2012

Food products represent the largest sub-group by weight and by value in this commodity bundle. Beverages account for nearly one-quarter of goods by weight and 18% by value. Farm products represent 18 percent of this bundle by weight and 11 percent by value. Tobacco products and fresh fish each represent less than 1 percent of this bundle by weight.

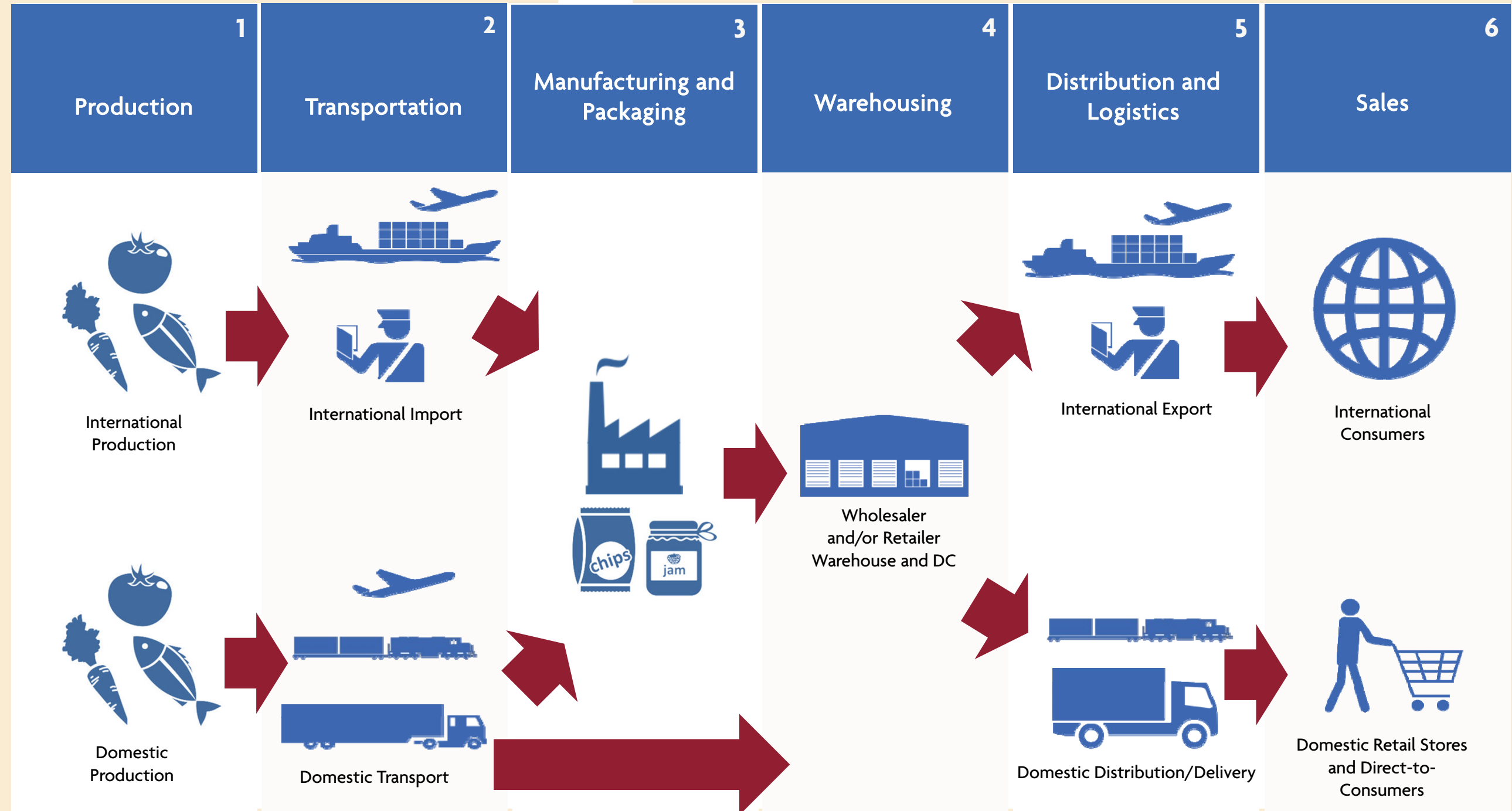
## LOGISTICS SUMMARY

The graphic to the right represents the supply chain for the food subsection of this bundle from initial production through distribution of products to retail stores and consumers.

This supply chain consists of six steps:

1. International and domestic raw goods are produced and collected.
2. International goods are transported by ocean vessel or air to U.S. Ports-of-Entry where they are inspected by U.S. Customs and transloaded to truck and rail. Domestically produced goods are transported by truck, rail, and air.
3. Goods are delivered to a manufacturing center where they are processed and packaged.
4. Finished goods are sent to a wholesaler or retailer distribution center or warehouse for sorting and storage.
5. Products are distributed via one of two routes:
  - A. By truck to an export distributor or freight forwarder for export to international customers via air or ocean vessel.
  - B. By truck for domestic delivery to retail stores and to fulfill direct-to-consumer orders.
6. Shipments are delivered to international and domestic customers according to customers' specification.

Note that a limited amount of goods are shipped directly from domestic producers to wholesaler and retailer distribution centers, bypassing the manufacturing and packaging step.



# Business Locations by Industry Type

## Business Square Footage by Industry Type

### Food and Beverages

#### Legend

##### Square Feet Occupied

##### Production

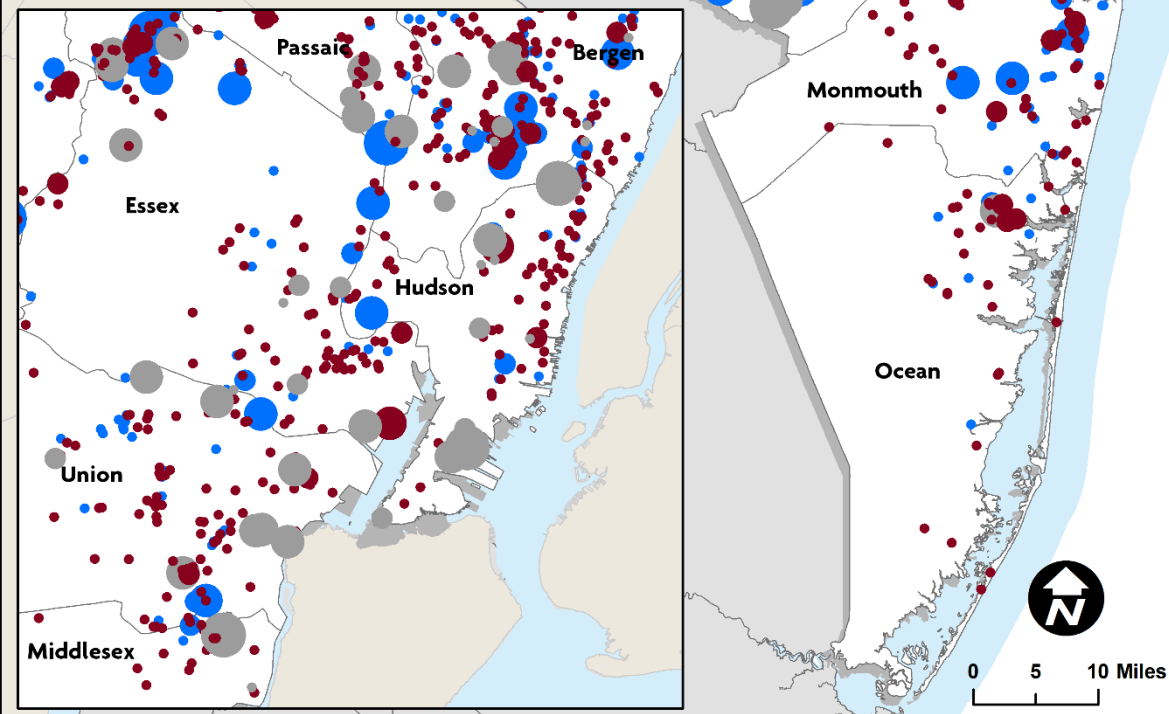
- 0 - 24,999
- 25,000 - 49,999
- 50,000 - 249,999
- 250,000 +

##### 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 2-5 in the Logistics Summary on Pages 2-3.

"Sales" includes Retail, Health Care, and Professional Services, corresponding to Step 6 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 mining, agriculture, and 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 5 on the logistics summary chart.
- Sales, represented in Step 6 on the logistics summary chart, including retail, services, and institutional establishments where goods are sold.

Clusters of establishments are located in the urban areas of the region, including southern Bergen, southern Passaic, Hudson, eastern Essex and Union, and Middlesex counties. Northwestern Essex, eastern Morris, and eastern Somerset counties also contain clusters of facilities handling food and beverages.

## KEY INDUSTRY TRENDS

The following trends are shaping demand for food and beverages today, and projected demand in the future:

- Forecasted growth in population in the NJTPA region indicates growing demand for food and transportation of fresh and processed food products.
- The demand for locally sourced food is growing. This trend will shorten the supply chain for many products and reduce the cost associated with food transportation.
- Online sales of food and beverages is increasing, mirroring the growth of e-commerce in other industries.
- Demand for ethnic foods, especially Hispanic, South Asian, and East Asian foods, will increase with growing ethnic diversity in the region.

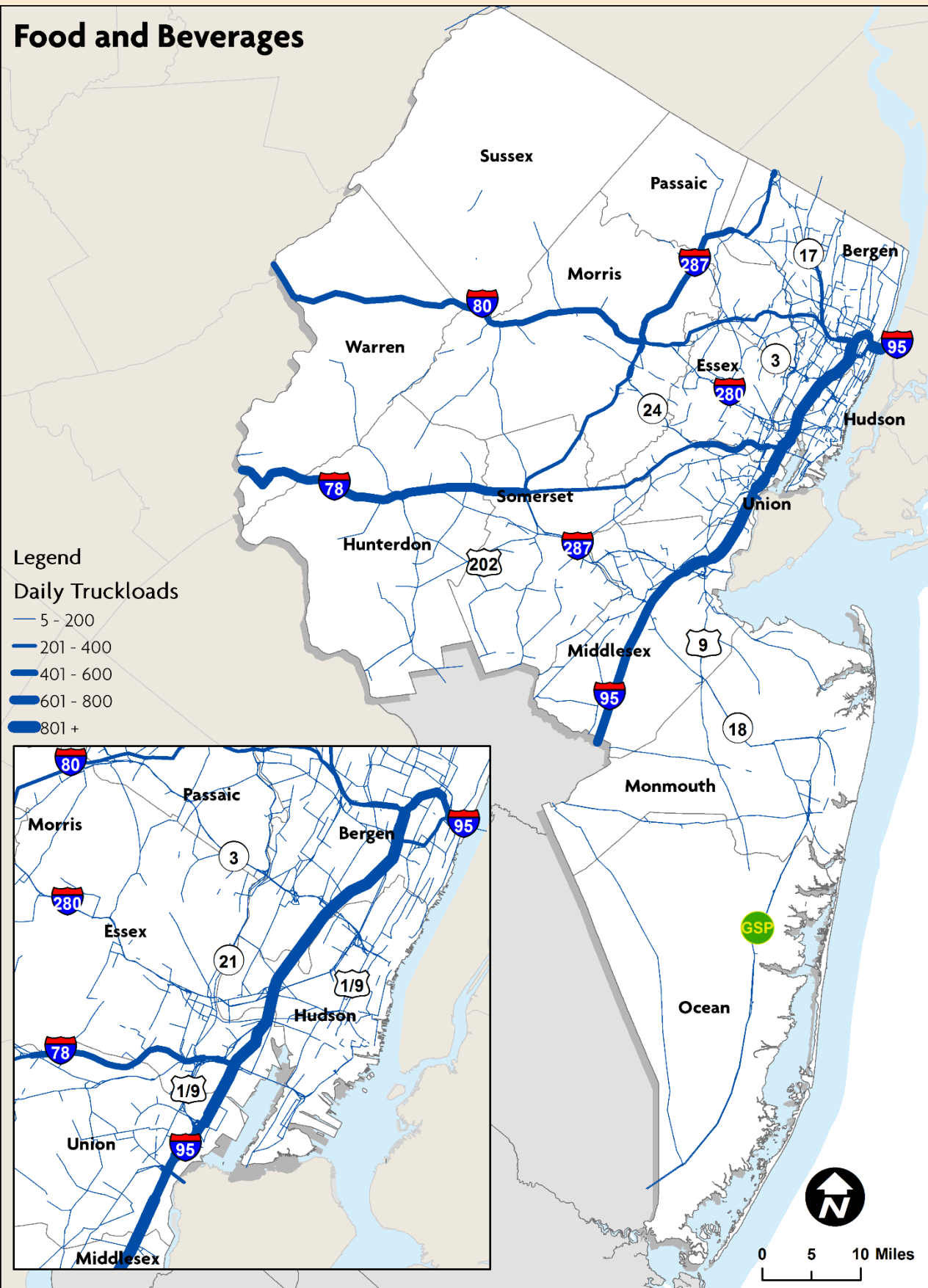
## Beverage Product Manufacturing Facility (Left) and Food and Beverages Retail Outlet (Right)





## Highway Network Utilization, 2010

### Food and Beverages



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

## HIGHWAY NETWORK FLOWS OF FOOD AND BEVERAGES

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 in between Exit 14 in Essex County and Exit 18 in Bergen County carry more than 1,000 truckloads of food and beverages each day. The NJ Turnpike between Exit 14 and Exit 10 in Middlesex County and the George Washington Bridge carry between 800 and 1,000 truckloads daily. 600 to 800 daily truckloads of food and beverages move on the NJ Turnpike south of Exit 10 and on Interstate 78 between Interstate 287 in Somerset County and the Pennsylvania border. Interstate 78 in Essex and eastern Union County, Interstate 80 between Interstate 287 in Morris County and the Pennsylvania border and in the vicinity of Hackensack in Bergen County, Interstate 287 between Interstate 80 and Route 208 in Bergen County, and the Goethals Bridge (Interstate 278) carry 400-600 daily truckloads of food and beverages.

## COMMODITY FLOW SUMMARY

Collectively, more than 68 million tons of food and beverage commodities, worth \$74 billion, moved into, out of, through, or within the NJTPA region in 2010. By 2040, nearly 97 million tons worth \$106 billion (constant 2010 dollars) will move in the region. These projections represent 42 percent growth by tons and 43 percent growth by value.

Food and beverages represented 10 percent of the goods moved in the region by weight and 4 percent by value in 2010 and are expected to represent the same shares of weight and value of goods moved in the region in 2040.

Canned or preserved food, miscellaneous food preparations, field crops, grain mill products, and soft drinks or mineral water are the top five commodities within this bundle that originate and/or terminate in the region. Together they represent 60 percent of all goods in this bundle, as the table below shows.

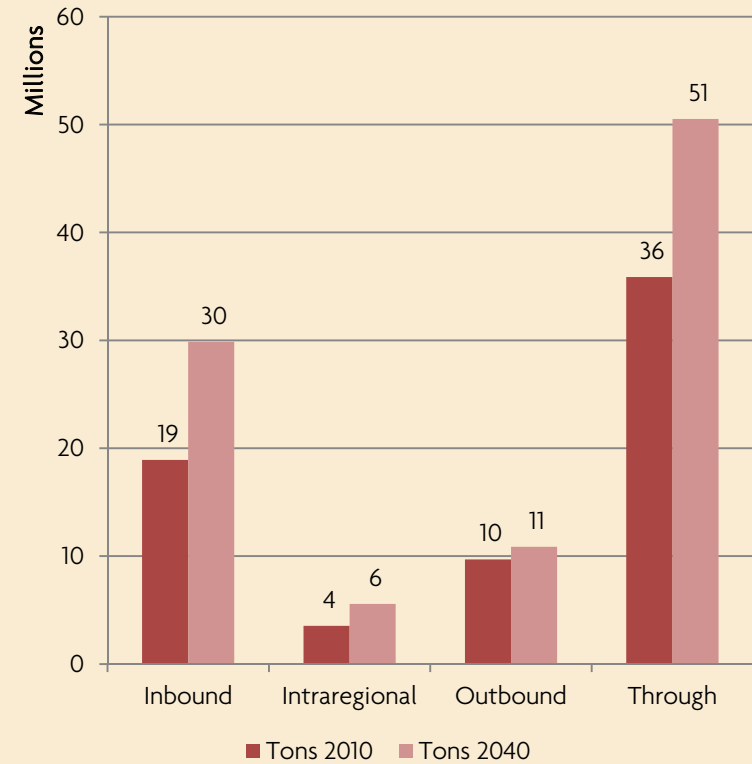
### Commodities in the Food and Beverages Commodity Bundle

STCCA Commodity	Tons (thousands)	Value (millions)	STCCA Commodity	Tons (thousands)	Value (millions)
2030 Canned or Preserved Food	4,714	\$1,142	2085 Distilled or Blended Liquors	404	\$1,448
2090 Misc Food Preparations	4,541	\$1,165	2087 Misc Flavoring Extracts	389	\$1,161
0110 Field Crops	3,415	\$1,191	0142 Dairy Farm Products	192	\$474
2040 Grain Mill Products	3,331	\$795	0152 Poultry Eggs	181	\$333
2086 Soft Drinks or Mineral Water	3,215	\$1,228	2083 Malt	168	\$3,891
2020 Dairy Products	2,040	\$1,267	0151 Live Poultry	109	\$6,309
2082 Malt Liquors	1,798	\$804	0190 Misc Farm Products	49	\$11,305
2050 Bakery Products	1,569	\$865	2110 Cigarettes	19	\$13,576
Meat or Poultry, Fresh or					
2010 Chilled	1,567	\$1,114	2080 Beverages or Flavor Extracts	14	\$17,028
2084 Wine, brandy or Brandy Spirit	949	\$975	2120 Cigars	13	\$17,598
Confectionery or Related					
2070 Prod	847	\$717	910 Fresh Fish or Marine Products	11	\$15,554
2060 Sugar, Beet or Cane	773	\$1,365	2140 Stemmed or Redried Tobacco	6	\$18,524
0120 Fresh Fruits or Tree Nuts	758	\$1,495	989 Fish Hatcheries	<1	\$17,927
0130 Fresh Vegetables	620	\$1,574	2130 Chewing or Smoking Tobacco	<1	\$16,022
0141 Livestock	461	\$1,450			

Source: NJTPA Freight Forecasting Tool, 2012

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

### Tons by Direction, 2010 and 2040



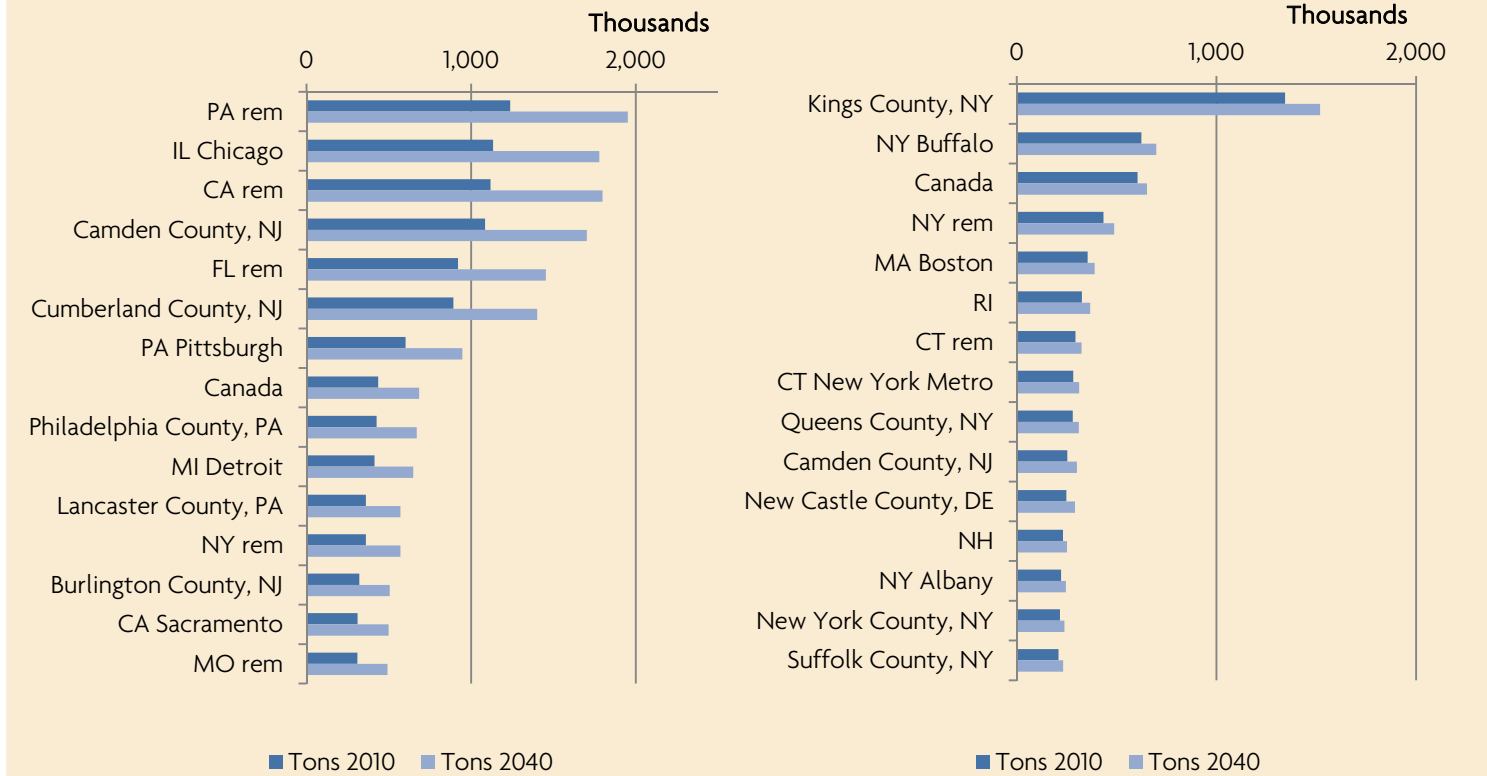
Movement of food and beverage commodities are primarily passing through the region (36 million tons, or 53 percent). About 19 million tons, or 28 percent, are moving inbound, 10 million tons, or 14 percent, moving outbound, and 4 million tons, or 5 percent, are intraregional movements.

About half of the food and beverages imported to the NJTPA region originate in one of the locations shown in the graph to the right. Pennsylvania “remainder,” Chicago, California “remainder,” and Camden County each sent more than 1 million tons of food or beverages to the NJTPA region in 2010. Among the top origins, flows from California are expected to grow fastest (61 percent) and flows from Detroit are expected to grow slowest (56 percent) through 2040.

The locations shown in the far-right graph are the destinations of 61 percent of the goods in this commodity bundle that leave the NJTPA region. About 1.3 million tons are destined for Kings County, NY (Brooklyn). Among the top destinations, flows to Camden County are expected to grow fastest (19 percent) and flows to Canada are expected to grow slowest (8 percent) through 2040.

Source: NJTPA Freight Forecasting Tool, 2012

### Top Origins of Inbound Domestic Commodities (Left) and Top Destinations of Outbound Domestic 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.

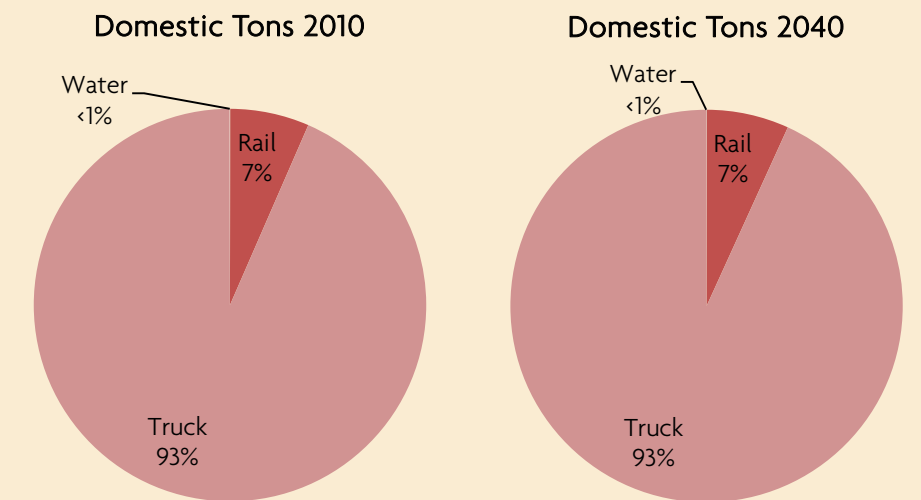
Source: NJTPA Freight Forecasting Tool, 2012  
 Note: “rem” stands for “remainder,” which refers to the portions of a state outside major metropolitan regions.

### Nearly All of the Food and Beverage Goods in the Region Travel by Truck or Rail



### Mode Splits, 2010 and 2040

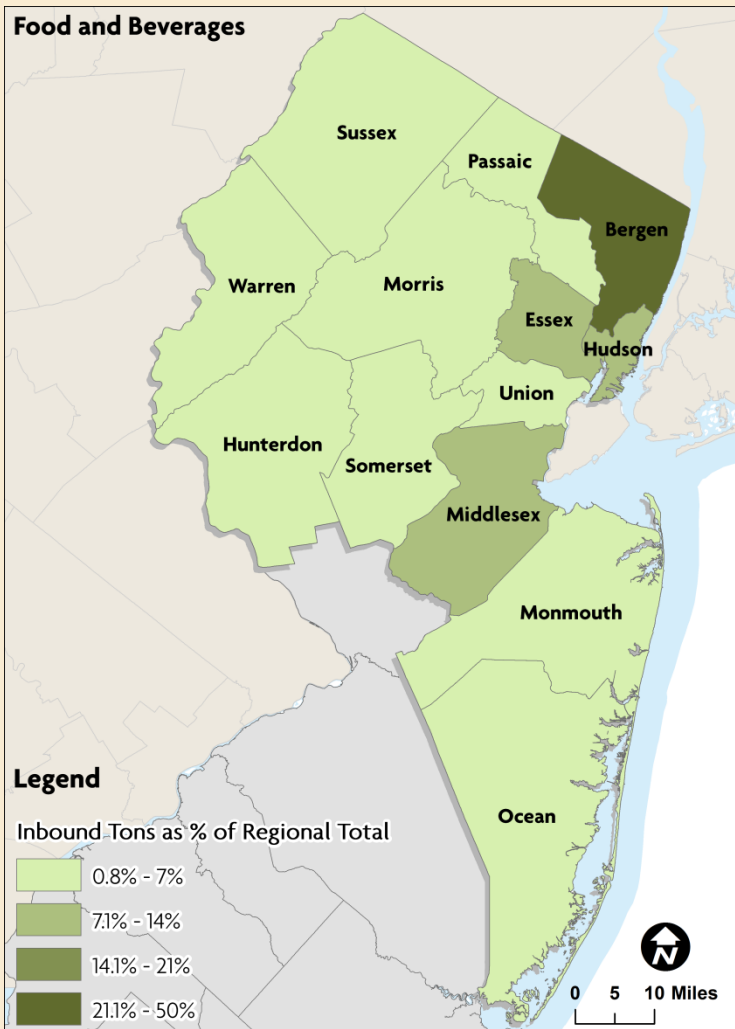
In 2010, about 93 percent of the food and beverages commodities moving in the NJTPA region traveled by truck. Rail carried about 7 percent of goods in this commodity bundle. Domestic water carried less than 1 percent, and air and other modes carried no significant volume of goods in this commodity bundle. By 2040, the share of tons moving by each mode is expected to remain similar.



Source: NJTPA Freight Forecasting Tool, 2012

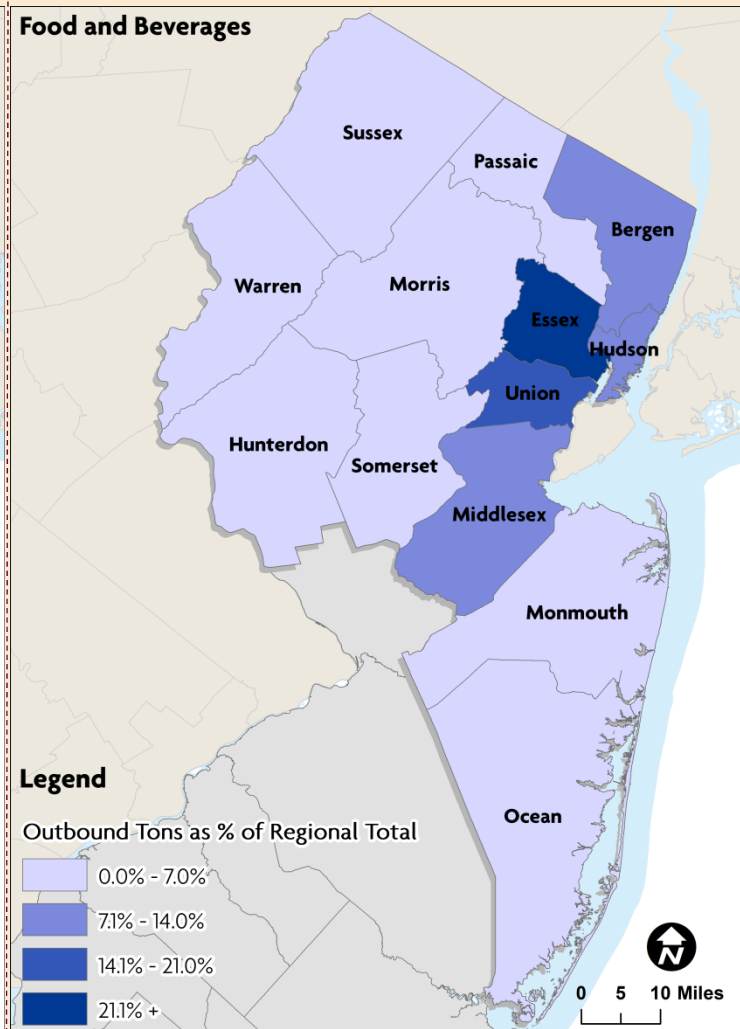


### Inbound Domestic Tons by County, 2010



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

### Outbound Domestic Tons by County, 2010



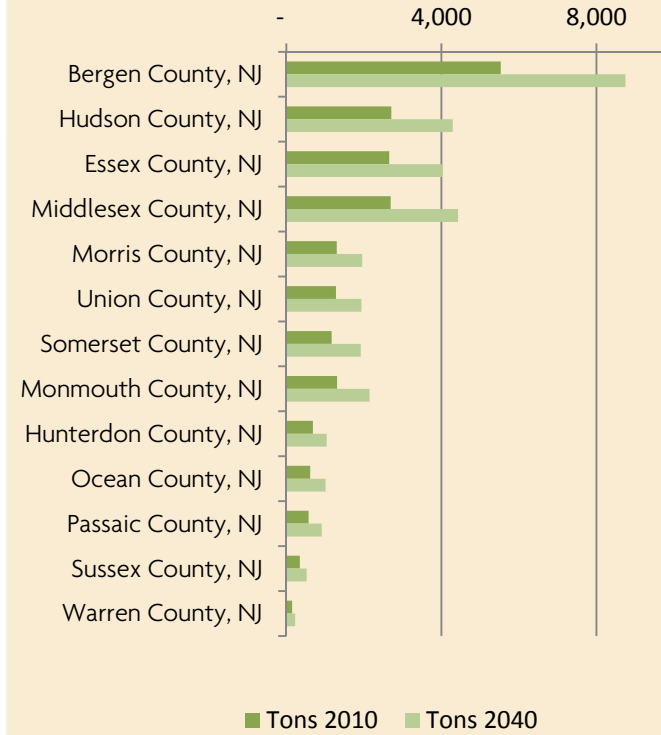
Source: NJTPA Freight Forecasting Tool, 2012; NJOIT, 2008; Esri, 2014.

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.

More than one-fifth of all food and beverages traveling into the NJTPA region terminate in Bergen County. More than 2 million tons terminate in each Hudson, Essex, and Middlesex counties. Projected growth rates in inbound tonnage of food and beverages between 2010 and 2040 range from 51 percent (Essex, Morris, and Union counties) to 65 percent (Middlesex County).

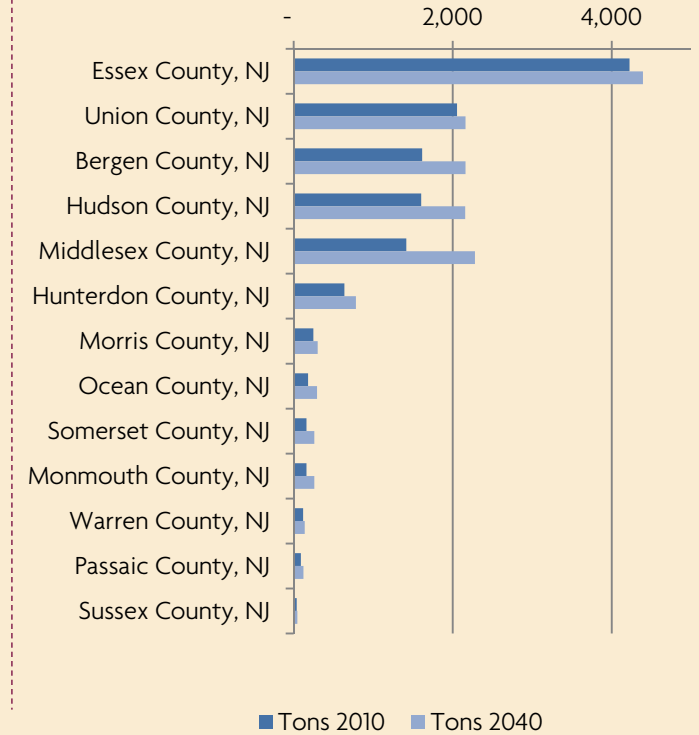
More than one-third of all food and beverages shipped outbound originate in Essex County. More than 1 million tons originate in each of the following: Union, Bergen, and Hudson counties. Projected growth rates in outbound tonnage between 2010 and 2040 range from 4 percent (Essex County) to 62 percent (Ocean, Somerset, and Monmouth counties).

### 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 food and beverage commodity flows and logistics in the North Jersey region and elsewhere, consult the following sources:

- New Jersey Food Processors Association, [www.njfoodprocessors.org](http://www.njfoodprocessors.org)
- New Jersey Farm Bureau, [www.njbf.org](http://www.njbf.org)
- American Beverage Association, [www.ameribev.org](http://www.ameribev.org)
- Association of Food Industries, [www.afius.org](http://www.afius.org)
- Bureau of Labor Statistics, U.S. Department of Labor, [www.bls.gov](http://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 food and beverages 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](mailto: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.