



Future Regional Freight and Goods Flow Profile

Central Florida Regional Freight Study

technical report



prepared for

MetroPlan Orlando

**FDOT District 5, Lake-Sumter MPO, Space Coast TPO,
and Volusia TPO**

prepared by

Cambridge Systematics, Inc.

with

**HDR Engineering, Inc.
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date

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1.0 Introduction

This report presents the results of the future commodity flow profile. Two forecasts were developed to examine the future demand for freight transportation in the region¹.

1. Forecast 1 - Adjusted Trade and Logistics Forecast: The forecast developed for the Florida Trade and Logistics study was adjusted to reflect the most up to date expected growth in population and Gross Domestic Product (GDP) in the region, state and country.
2. Forecast 2 - FAF3 Based Forecast: The Federal Highway Administration's (FHWA) Freight Analysis Framework version 3.3 (FAF3.3) growth rates were calculated by mode, commodity and origin-destination (O-D) and were applied to the base year.

The results from these two forecasts are presented for truck, rail and international waterborne cargo moving to, from, through and within the study area. The air cargo existing and future demand is not included in this commodity flow profile due to the lack of international data in the Trade and Logistics database. Air cargo forecasts were developed separately and are analyzed in the air cargo profile.

1.1 DATA AND FORECAST METHODOLOGY

The data source for the base year commodity flow analysis were, the Florida Trade and Logistics database provided by Florida Department of Transportation (FDOT) for truck and waterborne freight movements, and the Surface Transportation Board (STB) Full Carload Waybill Sample for rail flows. The Florida Trade and Logistics database was developed for the Florida Trade and Logistics Study commissioned by the Florida Chamber of Commerce Foundation and the Florida Department of Transportation. The base year for this database was normalized to 2010 and forecasts were developed for 10-, 25-, and 50-year time periods. It used IHS Global Insight TRANSEARCH commodity flow data to describe the truck flows; and used the Journal of Commerce's Port Import Export Reporting System (PIERS) data to describe Florida's international waterborne imports and exports. Rail freight flows were analyzed with the 2009 Surface Transportation Board Full Carload Waybill Sample.

¹ The study area is comprised of seven counties in the Central Florida region. This area includes Brevard, Lake, Orange, Osceola, Seminole, Sumter, and Volusia counties.

The Trade and Logistics forecast was developed for each mode separately. The projection bases were U.S. and State growth rates for population, GDP, industry employment, and trading country GDP for international exports. These growth rates were applied to the base year flows depending on the type of trade (imports, exports or domestic), direction (inbound, outbound, intrastate and through), and the type of commodity.

Updated Trade and Logistics Forecast

The Trade and Logistics truck and international water forecasts were updated to include the most current 2040 projections of population² and GDP³ for the study region, State and the country. Only the flows that used these growth rates were updated in the new forecast. For the remaining flows, the forecast remained unchanged and a simple interpolation was done using the 2035 and 2060 volumes to obtain 2040 volumes.

The rail forecast was developed from scratch because the base year did not use the original Trade and Logistics rail data. The 2009 STB Full Carload Waybill Sample was forecasted following the same methodology used in the Trade and Logistics forecast and using the original and updated growth rates as needed.

FAF3 Forecast Growth Rates

The Federal Highway Administration Freight Analysis Framework version 3.3 (FAF3.3) database was used to forecast to the year 2040 the base year Trade and Logistics data and the STB Waybill data. The FAF3 is based in 2007, includes 2010 provisional data, and forecasts through 2040 in five-year increments. Growth rates were calculated for the FAF3 flows from/to Florida by Origin-Destination, commodity type and mode, and were then applied to the base year data.

Adjustments

Adjustments were made to the updated Trade and Logistics forecast and the FAF3-based forecast to better reflect the expected growth or decline of various industries in the region. The Trade and Logistic growth rate for clay, concrete, glass and stone products was reduced by 50 percent from an average Compound

² The seven-county study region and statewide population forecast source was the University of Florida Bureau of Economic and Business Research (BEBR) forecast. The U.S. population forecast source was the U.S. Census Bureau International Database.

³ The seven-county study region and statewide GDP forecast source was the University of Central Florida Institute for Economic Competitiveness Florida & Metro Forecast (October 2012) adjusted by Cambridge Systematics. The U.S. GDP forecast source was the Florida Office of Economic & Demographic Research (EDR) adjusted by Cambridge Systematics.

Annual Growth Rate (CAGR) of 3.2% to 1.6%. The FAF3 growth rate for nonmetallic ores and minerals was reduced by 50 percent from an average Compound Annual Growth Rate (CAGR) of 1.3% to 0.6%. A 4 percent cap for annual growth was set as an upper bound on the FAF3 growth rate for instruments, photographic and optical goods.

1.2 KEY FINDINGS

A summary of key findings and trends in the future regional commodity flow profile are presented below. More detailed analysis follows in Sections 2.0 and 3.0.

Commodity Flow Summary

- Nearly 202 million tons of inbound, outbound, intraregional, and through freight moved over the Central Florida study region's transportation network in 2010. Nineteen percent of this traffic was inbound, 11 percent was outbound, 10 percent was intraregional, and 60 percent was through traffic.
- By 2040, inbound, outbound, intraregional and through freight is expected to increase to the range of 271 million to 325 million tons - a 35 to 61 percent increase respectively.
- When measured by weight, 95 percent of the regional freight moved by truck, 4 percent rail, and 1 percent water via Port Canaveral in 2010.
- In 2040, the freight transportation mode split is expected to be 96 percent of the regional freight moved by truck, 3 percent rail, and 1 percent water via Port Canaveral.
- Orange County is the largest freight generator and receiver within the region. It accounted for more than 45 percent of all inbound tonnage and over 40 percent of all outbound tonnage. Brevard County accounted for 23 percent of all outbound tonnage. Orange County is projected to account for similar shares of the 2040 inbound and outbound tonnage in the region.

Truck Flows

- In 2010, over 191 million tons of inbound, outbound, intraregional, and through freight was hauled by truck over the region's roadway infrastructure.
- By 2040, inbound, outbound, intraregional, and through truck freight is expected to grow to 260 or 311 million tons, a 36 to 63 percent increase respectively depending on the low and high forecast scenario.
- In 2010, 15 percent of the truck traffic was inbound, 12 percent was outbound, 11 percent was intraregional, and 62 percent was moving through

the region (i.e., had both an origin and a destination outside of the study area).

- Forecast 1, the updated Trade and Logistics forecast, projects that by 2040 16 percent of the truck traffic will be inbound, 13 percent outbound, 9 percent intraregional, and 63 percent through traffic.
- Forecast 2, the FAF based forecast, projects that by 2040 15 percent of the truck traffic will be inbound, 10 percent outbound, 7 percent intraregional, and 69 percent through traffic.

Rail Flows

- In 2010, more than 9 million tons of inbound and outbound freight was hauled by rail over the region's rail network. Ninety-five percent of this traffic was inbound, and 5 percent was outbound.
- By 2040, inbound and outbound rail freight is expected to grow to 9.2 or 11.7 million tons, a 2 to 30 percent increase respectively depending on the forecast scenario.
- By weight, in 2010 the rail freight was 92 percent carload, and 8 percent intermodal. By number of railcars, 62 percent was carload, and 38 percent was intermodal.
- Forecast 1 projects that by 2040, the share of intermodal rail freight is expected to grow to 17 percent of the tonnage and 59 percent of the railcars. Forecast 2 projects the share of intermodal rail freight to increase to 11 percent of the tonnage and 48 percent of the railcars.

Top Commodities

- The top three commodity groups moving inbound, outbound and intraregionally in both 2010 and 2040 are nonmetallic ores and minerals, clay, concrete, glass and stone products, and warehoused goods (defined here as freight flows to and from distribution centers or via intermodal facilities and typically represents consumer goods). Together they account for more 70 percent of total commodities by weight both currently and in the future.
- In 2010, the top truck commodity was nonmetallic ores and minerals, which accounted for 30 percent of total truck tonnage (i.e., sum of inbound, outbound, and intraregional truck tonnage). Clay, concrete, glass and stone products were second (25 percent of total truck tonnage), and warehoused goods (19 percent of total truck tonnage) was third.
- In 2040, the share of the top truck commodities are expected to be: 24 to 31 percent for warehoused goods; 25 to 30 percent for clay, concrete, glass and stone products; and 16 to 23 percent for nonmetallic ores and minerals.
- In 2010, the top rail commodity was nonmetallic ores and minerals, which accounted for 47 percent of the region's total rail tonnage (i.e., sum of

inbound and outbound rail tonnage). Coal was second (25 percent of total rail tonnage), and food and kindred products were third (6 percent of total rail tonnage).

- In 2040, the share of the top rail commodities are expected to be: 29 to 52 percent for nonmetallic ores and minerals; 10 to 30 percent for coal; and 8 to 9 percent for food and kindred products.

Top Trading Partners

- The top three trading partners of the study region – Miami-Dade County, Marion County, and Polk County – account for about 29 percent of total inbound and outbound freight flows by weight. By 2040, these counties are expected to account for a 26 to 29 percent share of the inbound and outbound tonnage.
- In 2010, the top commodity group moved to and from the region’s top trading partner (Miami-Dade County) was nonmetallic ores and minerals, accounting for 38 percent of total tonnage. This was followed by warehoused goods, at 34 percent, and clay, concrete, glass and stone products at 11 percent. These commodities are expected to account for 83 to 85 percent of the 2040 tonnage traded with Miami-Dade County.
- In 2010, the top commodity group moved to and from the region’s second largest trading partner (Marion County) was nonmetallic ores and minerals, accounting for 79 percent of total tonnage. This was followed by clay, concrete, glass, and stone products at 15 percent and warehoused goods at 3 percent. These commodities are expected to account for 95 to 98 percent of the 2040 tonnage traded with Marion County.
- In 2010, the top commodity group moved to and from region’s third largest trading partner (Polk County) was clay, concrete, glass, and stone products, accounting for 40 percent of total tonnage. This was followed by warehoused goods at 27 percent and nonmetallic ores and minerals at 18 percent. These commodities are expected to account for 90 percent of the 2040 tonnage traded with Polk County.

2.0 Regional Commodity Flow Analysis

2.1 OVERVIEW

In 2010, 201 million tons of freight moved into, out of, within, or through the study region. By 2040 these flows are expected to grow within 35 to 61 percent amounting to 271 million and 325 million tons respectively. Inbound flows, at 38 million tons in 2010, are expected to grow 33 to 50 percent by 2040 to 50 million tons (conservative scenario) and 57 million tons (optimistic scenario) respectively. Twenty-three million tons traveled outbound in 2010. These shipments are expected to increase 42 to 46 percent over the next thirty years to the 33 million - 34 million tons range. Intraregional freight was 21 million tons in 2010 and the 2040 projections estimate a modest increase of 1 to 12 percent (21 million to 23 million tons). Through freight is expected to increase from 120 million tons in 2010 to within the range of 164 million and 215 million tons over the next thirty years.

2.2 DIRECTIONAL ANALYSIS

In 2010, more than 201 million tons of freight moved over the region's transportation system. Projections over the next thirty years estimate freight will increase to the range of 271 million to 325 million tons by 2040 - a 35 to 61 percent increase respectively. Table 2.1 displays freight flows by weight and direction in 2010 and 2040 including the two forecasts projections developed for this study. Figure 2.1 graphically displays the proportion of regional freight tonnage by direction for 2010 and for the two forecast scenarios in 2040.

The largest component of total regional freight, through traffic, is expected to maintain or increase its share over the next thirty years from 60 percent of the total in 2010 to 61 - 66 percent by 2040. Inbound freight is the second largest component and it is expected to maintain this share over the next thirty years (19 percent of the 2010 total and 18 - 19 percent of the 2040 total) which indicates that the Central Florida study region will continue to be a net importer of goods.

Outbound freight is the third largest component, 11 percent of the 2010 total, and by 2040 this share will likely remain constant (10 to 12 percent of the 2040 total). Intraregional freight accounted for 10 percent of the total freight movements in 2010, and over the next thirty years the intraregional freight is expected to decrease to 8-6 percent.

Table 2.1 Total Tonnage by Direction
2010-2040, Tons in Thousands

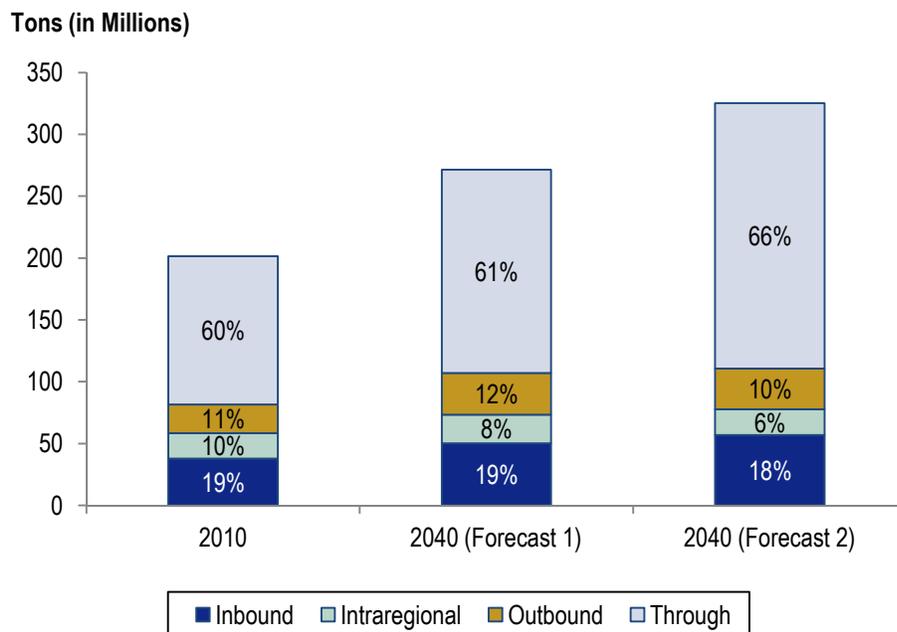
Direction	2010 ^a	2040 (Forecast 1)	2040 (Forecast 2)	% Change (2010 to 2040 Forecast 1)	% Change (2010 to 2040 Forecast 2)
Inbound	37,894	50,282	56,926	33%	50%
Intraregional	20,560	23,033	20,832	12%	1%
Outbound	23,129	33,713	32,798	46%	42%
Through ^b	119,857	164,406	214,653	37%	79%
Total	201,440	271,434	325,209	35%	61%

Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

^a The base year for the rail data is 2009.

^b Through rail moves were not included due to the inability to estimate it with the full Surface Transportation Board (STB) Waybill dataset. Therefore, the total through tonnage shown here likely underestimates actual through tonnage due to the lack of through rail data.

Figure 2.1 Direction of Total Freight Flows by Weight
2010-2040



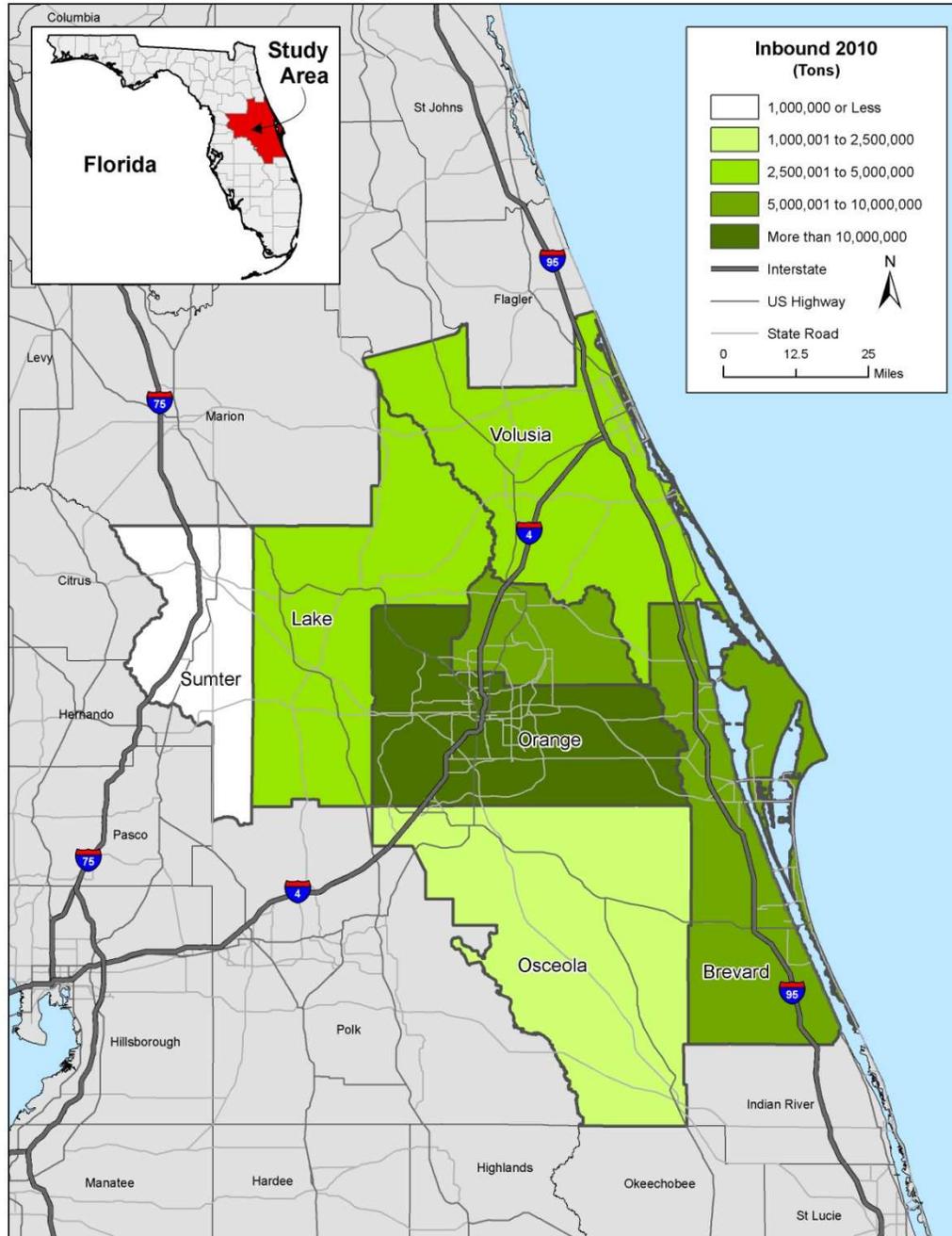
Source: 2010 FDOT Trade and Logistics data and 2009 full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

Directional Analysis – Inbound Freight

Terminating Counties for Total Inbound Freight

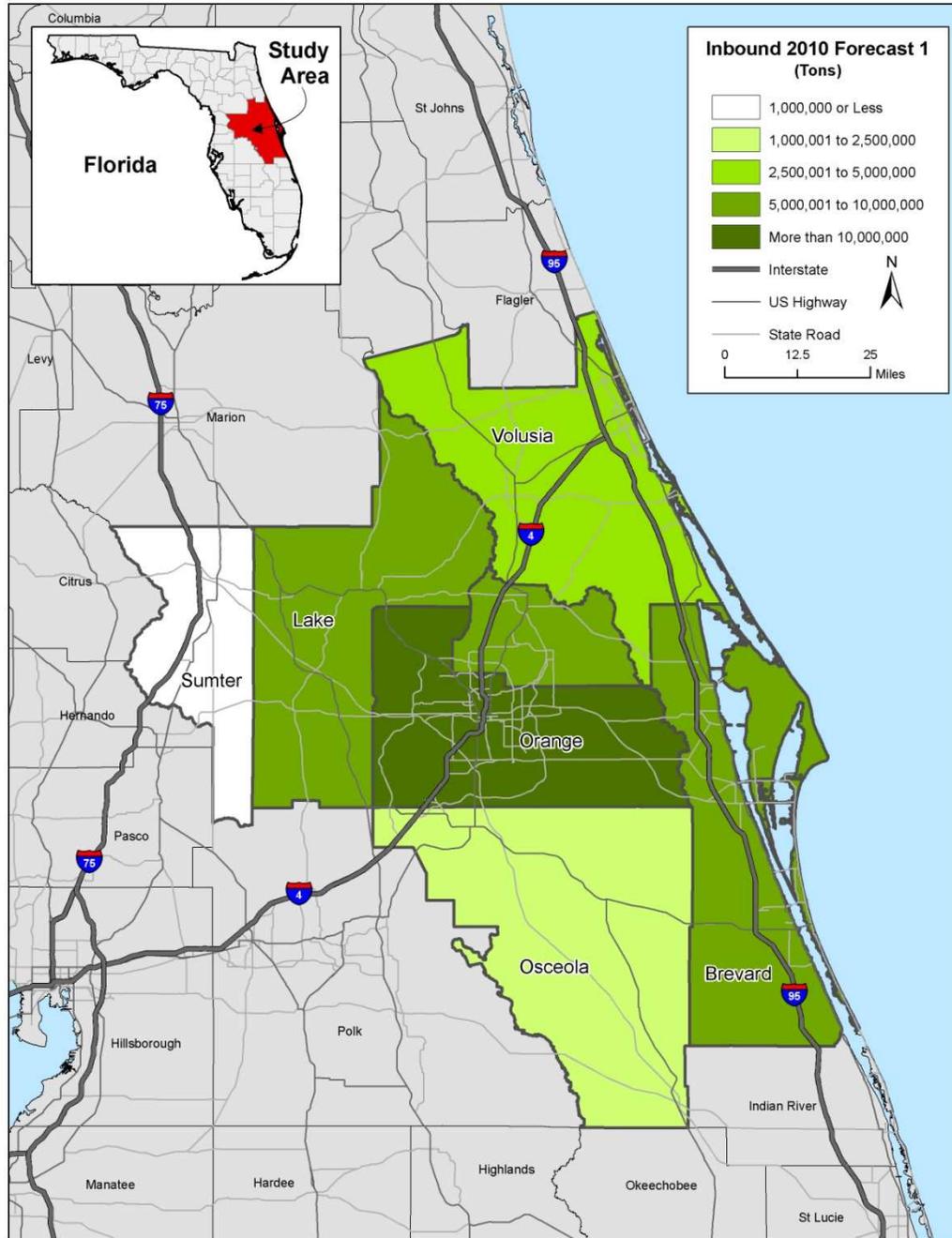
Figures 2.2, 2.3 and 2.4 graphically present, by county, the distribution of total inbound tonnage for 2010 and the 2040 forecasts. Over the next thirty years Orange County is expected to remain the top county in the region receiving freight shipments, accounting in 2040 for 44 -46 percent of all inbound tonnage to the region or 23 million to 25 million tons. Brevard and Seminole counties are expected to each receive in 2040 approximately 15 percent of the inbound tonnage (8 million to 9 million tons depending on the forecast estimate). Lake County's share is expected to account for 10 to 12 percent (5 million to 7 million tons) in 2040. The remaining counties (Volusia, Osceola, and Sumter) combined are projected to account for 13 - 15 percent or 7 million to 8 million tons of inbound tonnage in 2040.

Figure 2.2 Terminating Counties for Total Inbound Freight by Weight 2010



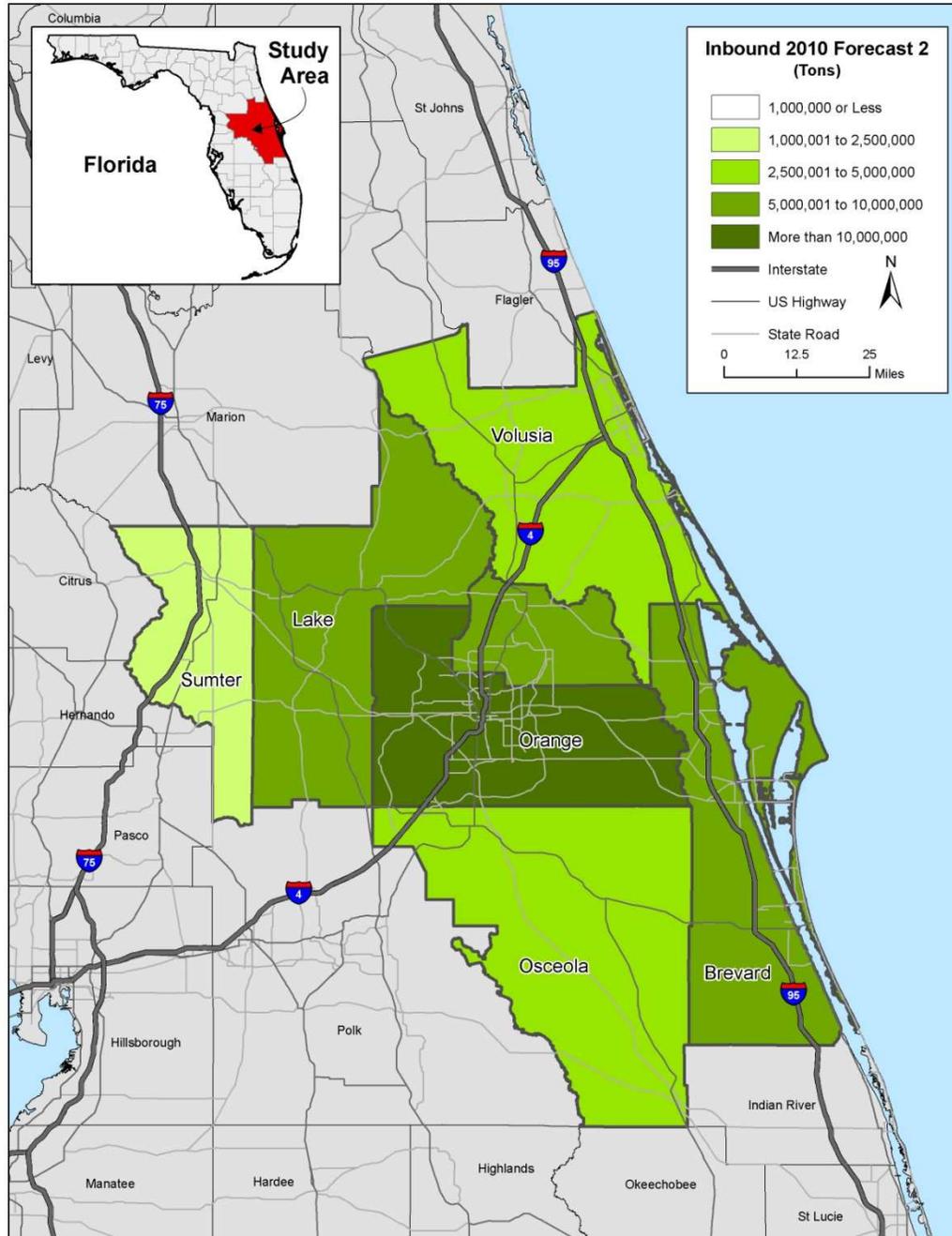
Source: Cambridge Systematics with 2010 FDOT Trade and Logistics data and 2009 Full Surface Transportation Board (STB) Waybill data.

Figure 2.3 Terminating Counties for Total Inbound Freight by Weight 2040 (Forecast 1)



Source: 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

Figure 2.4 Terminating Counties for Total Inbound Freight by Weight 2040 (Forecast 2)



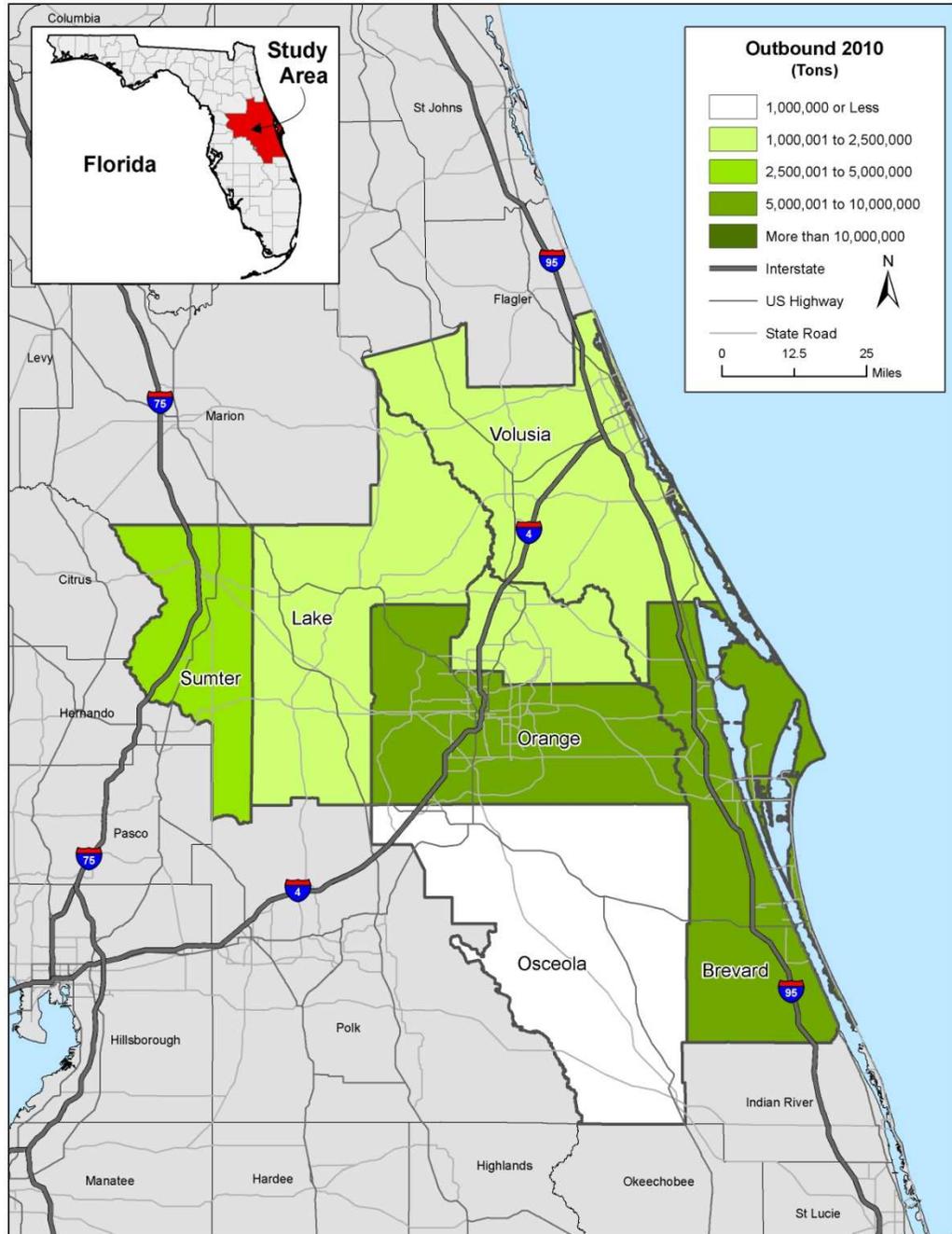
Source: 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

Directional Analysis - Outbound Freight

Originating Counties for Total Outbound Freight

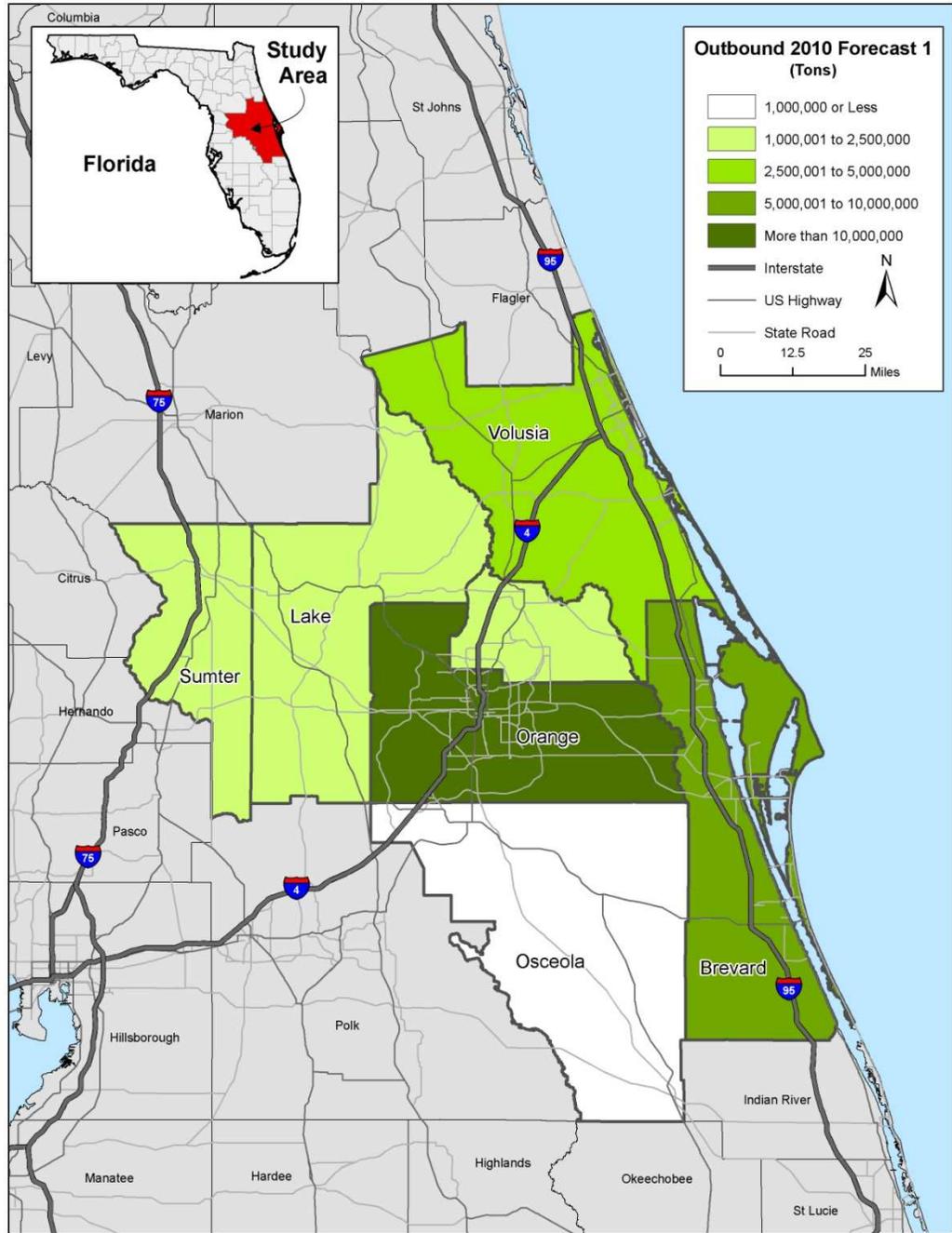
Figures 2.5, 2.6 and 2.7 graphically present, by county, the distribution of total outbound tonnage for 2010 and the two 2040 forecasts. Orange County accounted for 40 percent (9 million tons) of outbound freight tonnage originating from the region in 2010 and over the next thirty this share is expected to increase to 44 - 46 percent (14 million - 15 million tons). Brevard County is next accounting for 23 percent (5 million tons) of the outbound freight tonnage in 2010. By 2040 Brevard's share is projected to increase to 24 - 26 percent (8 million - 9 million tons). Sumter County represented 11 percent (3 million tons) in 2010, this share is expected to decrease to 5 - 6 percent (1 million-2 million tons) of the 2040 outbound freight tonnage. Volusia County, accounting for 10 percent (2 million tons) of the 2010 outbound tonnage, is expected to slightly increase this share to 11 - 12 percent (3 million-4 million tons) in 2040. The remaining share of the outbound freight movements in 2010 originated is split 8 percent from Lake County, 7 percent from Seminole and 1 percent from Osceola County. By 2040 Lake County is projected to represent 5 - 7 percent of the outbound freight, Seminole is expected to account for 5 - 9 percent, and Osceola is expected to maintain the 1 percent share.

Figure 2.5 Originating Counties for Total Outbound Freight by Weight
2010



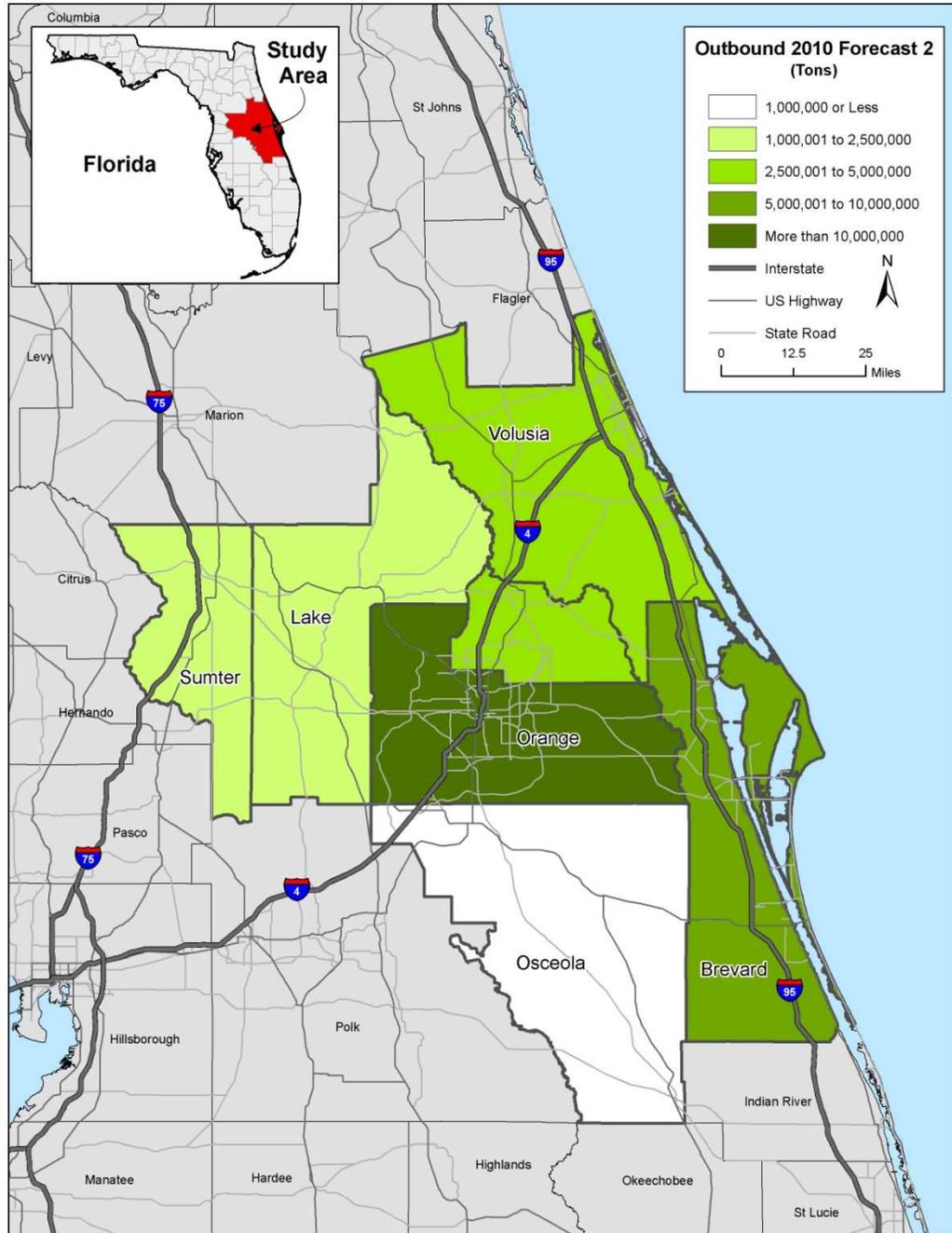
Source: Cambridge Systematics with 2010 FDOT Trade and Logistics dataset and 2009 full Surface Transportation Board (STB) Waybill dataset.

Figure 2.6 Originating Counties for Total Outbound Freight by Weight 2040 (Forecast 1)



Source: 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

Figure 2.7 Originating Counties for Total Outbound Freight by Weight 2040 (Forecast 2)



Source: 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

Directional Analysis - Intraregional Freight

To understand more about the future intraregional freight moves, a ranked list of origin-destination pairs was developed for the current and future intraregional tonnage (see Table 2.2 below). In 2010, the top intraregional origin-destination movements were from Brevard County to Orange County (18 percent of the intraregional moves or 3.6 million tons). This is expected due to the Port-related activity in Brevard County and the large freight market in Orange County. In 2040 the lower bound of the forecast projects a 9 percent decrease in the tonnage moving between these two counties (3.3 million tons), and the upper bound of the forecast projects an increase of 61 percent to 5.9 million tons. About 13 percent (2.6 million tons) of all intraregional freight by weight moved in 2010 were between origins and destinations within Orange County. In 2040, this share is expected to be 13 - 17 percent (2.6 million - 3.8 million tons) of the intraregional freight. The third and fourth most significant origin-destination pairs in 2010 were Lake County to Orange County (1.7 million tons), and intracounty movements within Brevard County (1.4 million tons). By 2040, movements from Lake County to Orange County are expected to decrease 17 - 38 percent to 1 million - 1.4 million tons. Movements within Brevard County are expected to increase by 2040 and account for 8 percent of the intraregional freight.

All of the intraregional freight is handled by trucks and a relatively large proportion by weight of these moves are nonmetallic ores and minerals, and clay, concrete, glass or stone products, indicative of construction activity. Over the next thirty years these shipments are expected to continue to make up the majority of the intraregional movements by weight.

Table 2.2 Top 10 Origin-Destination Pairs for Total Intra-regional Traffic by Weight
2010-2040, Tons in Thousands

Origin	Destination	2010 ^a	2040 (Forecast 1)	2040 (Forecast 2)
Brevard County	Orange County	3,640	3,321	5,877
Orange County	Orange County	2,584	3,842	2,645
Lake County	Orange County	1,734	1,432	1,076
Brevard County	Brevard County	1,388	1,744	1,660
Orange County	Seminole County	1,247	1,704	1,090
Sumter County	Lake County	1,207	840	685
Lake County	Lake County	832	650	504
Brevard County	Seminole County	824	843	1,342
Sumter County	Orange County	805	562	458
Orange County	Brevard County	660	1,086	422
All Others		5,640	7,009	5,072
Total		20,560	23,033	20,832

Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

^a The base year for the rail data is 2009.

2.3 MODE SHARE ANALYSIS

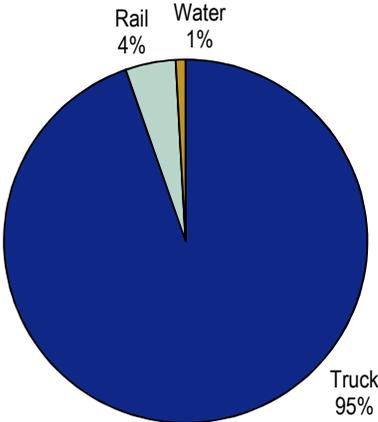
Freight utilizes different modes of transportation. This section will analyze the future trends of the regional movement of freight via the roadways, railways, and water.

Mode Share Analysis – All Directions (Inbound, Outbound, Intra-regional, and Through)

Table 2.3 and Figures 2.8 and 2.9 display the breakdown of total freight tonnage by mode for 2010 and the two forecast scenarios in 2040. Clearly, trucks are the dominant mode of freight transportation throughout the region. About 95 percent of all freight tonnage in 2010 and 96 percent in 2040 was moved by truck. Like most regions, Central Florida is dependent on trucks for movement of most of its freight, particularly those shipments that both originate and terminate within the region. This total is reasonable since trucks normally provide the last link in the transportation chain, transporting all types of commodities from their intermediate destinations, such as seaports or rail terminals, to their final destinations.

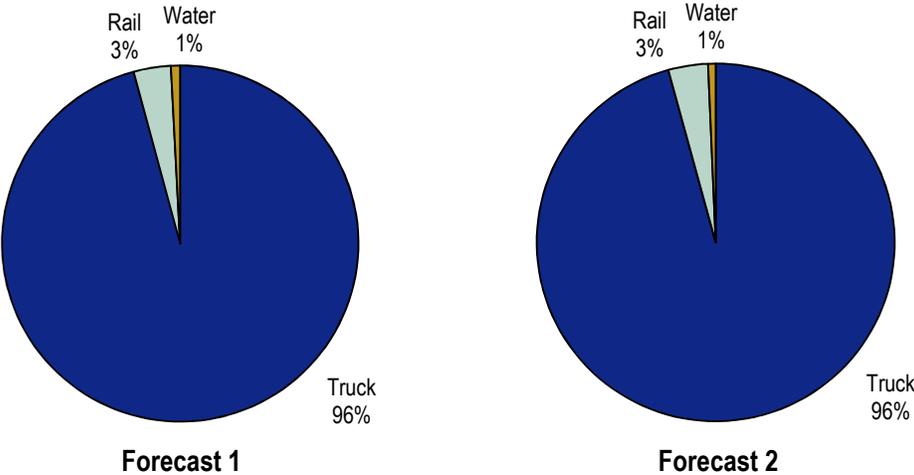
Rail is the second most common mode transporting nearly 4 percent of the freight tonnage in 2010 and 3 percent of the total in 2040, not including rail traffic that simply moves through the region. International waterborne freight through Port Canaveral follows, accounting for 1 percent of the tonnage in 2010 and expected to remain constant in 2040.

Figure 2.8 Mode Share by Weight – All Directions
2010 (Exclusive of Through Rail Tons)



Source: 2010 FDOT Trade and Logistics dataset and 2009 full Surface Transportation Board (STB) Waybill dataset.

Figure 2.9 Mode Share by Weight – All Directions
2040 (Exclusive of Through Rail Tons)



Source: 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

Table 2.3 Summary of Regional Freight Flows by Weight
 2010-2040, Tons in Thousands (Exclusive of Through Rail Tons)

Direction	Truck			Rail			International Water		
	2010	2040 (Forecast 1)	2040 (Forecast 2)	2009	2040 (Forecast 1)	2040 (Forecast 2)	2010	2040 (Forecast 1)	2040 (Forecast 2)
Inbound	28,745	40,979	45,270	8,530	8,497	10,850	620	806	806
Intraregional	20,560	23,033	20,832	0	0	0	0	0	0
Outbound	22,631	32,942	31,925	480	726	828	18	45	45
Through	118,714	163,010	213,257	N/A ^a	N/A ^a	N/A ^a	1,142	1,396	1,396
Total	190,650	259,964	311,284	9,010	9,223	11,678	1,780	2,247	2,247

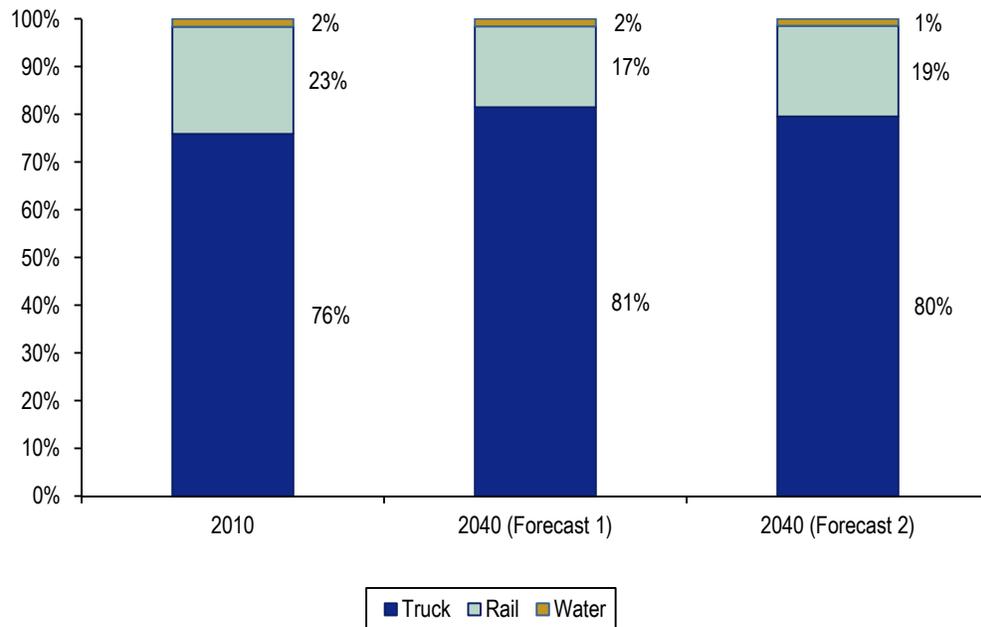
Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

^a Through rail moves were not included due to the inability to estimate it with the full Surface Transportation Board (STB) Waybill dataset. Therefore, the total through tonnage shown here likely underestimates actual through tonnage due to the lack of through rail data.

Mode Share Analysis – Inbound

Figure 2.10 shows the mode share by weight in 2010 and 2040 for freight moving in the inbound direction. Compared to total freight tonnage (all directions), a greater proportion of inbound freight arrives via the rail and water modes. The reasons for this become apparent when analyzing the commodity mix of inbound freight (discussed in some detail in Section 2.4) as compared to that of total freight. For example, two of the top inbound commodities are nonmetallic ores and minerals (transported primarily by truck and rail and some water) and coal (transported primarily by rail). These two commodities are a greater proportion of inbound freight than they are of total freight which partly explains why the rail and water modes account for a greater share of inbound tonnage than they do for total tonnage. By 2040, the share of inbound truck movements is expected to increase from 76 percent to 80 percent of the total inbound tonnage. On the other hand the share of inbound tonnage by rail is expected to decrease from 23 percent in 2010 to 17 – 19 percent in 2040.

Figure 2.10 Mode Share by Weight – Inbound
2010-2040

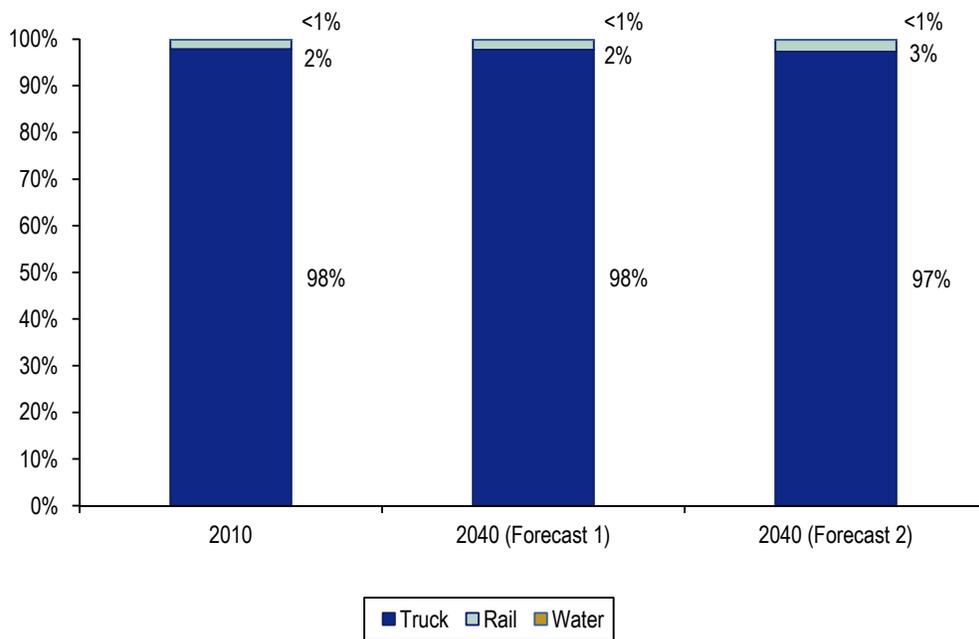


Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

Mode Share Analysis – Outbound

Figure 2.11 shows the current and future mode share by weight for freight moving in the outbound direction. Compared to total freight tonnage (all directions), a slightly greater proportion of outbound freight (98 percent) was shipped via truck in 2010. This proportion is expected to remain constant over the next thirty years. A smaller proportion moved via train or water. When analyzing the commodity mix originating in the region (discussed in Section 2.4) the traffic related to warehouse and distribution activities accounts for a larger share of the outbound freight than of the total freight. This commodity group is transported entirely by truck. Also, the heavier loads such as clay, concrete, glass or stone products, and nonmetallic ores and minerals are mostly transported by truck for the outbound traffic; and in the case of the inbound moves the share of rail for these same commodity groups is considerably larger.

Figure 2.11 Mode Share by Weight – Outbound
2010 -2040



Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

Mode Share Analysis – Intraregional

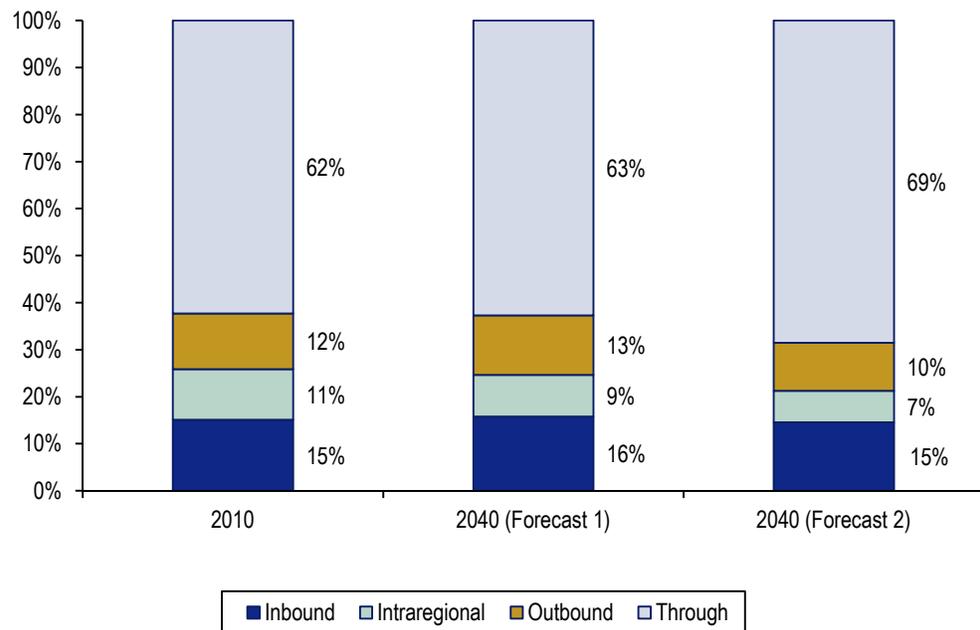
All of the intraregional freight was moved by truck in 2010 and is expected that it will be in 2040. This makes sense because the rail and water modes are much less likely to haul freight short distances. This is reflected in the types of commodities hauled intraregionally (nonmetallic minerals; clay, concrete, glass,

and stone products; food and kindred products; and warehoused goods) as described in Section 2.4. These commodities primarily serve local consumers and the local construction sector.

Mode Share Analysis – Truck Mode

As shown previously in Table 2.3 and Figures 2.8 and 2.9, in 2010 191 million tons or 95 percent of the total freight tonnage moving into, out of, within and through the region was transported by truck. In 2040, truck tonnage is expected to increase in the range of 36 - 46 percent (260 million - 311 million tons), representing 96 percent of the total 2040 tonnage. Of that share up to 69 percent is expected to be through traffic, while a more conservative projection estimates through traffic to account for 63 percent of the truck traffic. Inbound is projected to be 15 -16 percent, outbound 13 -10 percent, and intraregional traffic represents 7 -9 percent of the 2040 truck movements (see Figure 2.12).

Figure 2.12 Direction of Truck Freight Flows by Weight 2010-2040



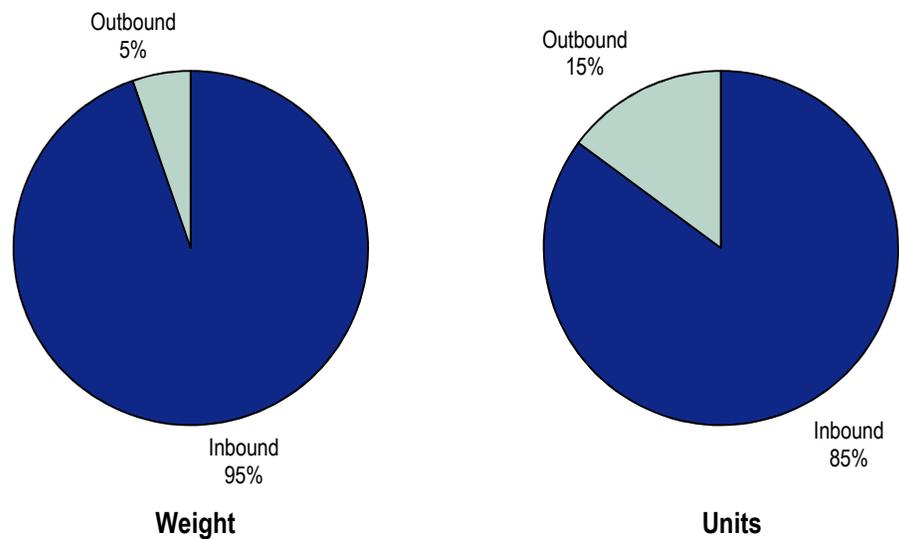
Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

Mode Share Analysis – Rail Mode

As shown previously in Table 2.3 and Figures 2.8 and 2.9, 9 million tons or 4 percent of the total freight tonnage moving in the region is transported by rail. The lower bound of the forecast projects that in 2040 rail tonnage increases

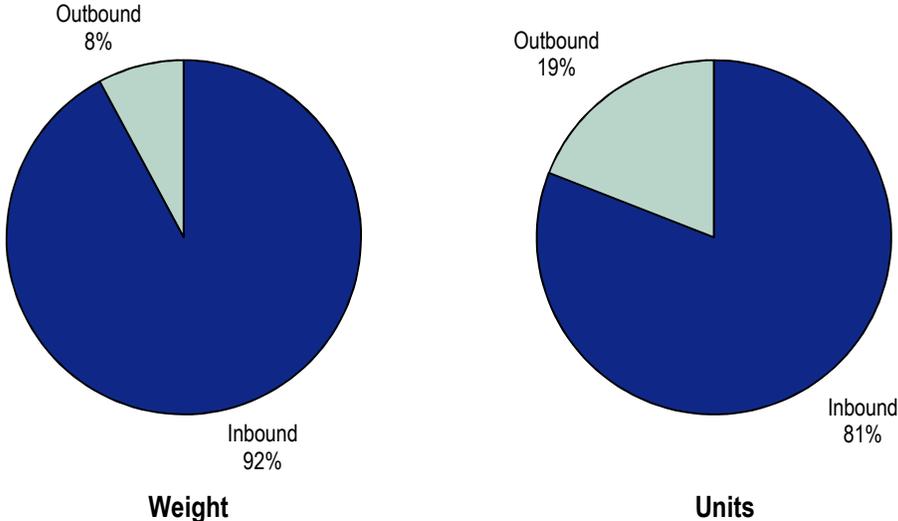
slightly 2 percent to 9.2 million tons, mostly due to a decline of carload shipments of non-metallic ores and minerals. The upper bound of the 2040 forecast projects an increase of 30 percent in rail tonnage to 11.7 million tons, where non-metallic ores and minerals do not decline over the next thirty years. Tables 2.4 and 2.5 and Figures 2.13, 2.14 and 2.15 show for the base year and forecast year the directional split of the rail tonnage and the railcars for both carload and intermodal rail equipment. By weight, 95 percent of the total rail tonnage is inbound and the remaining 5 percent is outbound. Over the next thirty years the outbound share of the rail tonnage is expected to grow to 7 or 8 percent. However, when measured by units, the outbound share is larger, it was 15 percent in 2010 and expected to increase up to 20 percent by 2040. This is because the share of intermodal traffic is larger for outbound rail than for inbound rail.

Figure 2.13 Direction of Rail Freight Flows by Weight and Units
2009 (Exclusive of Through Traffic)



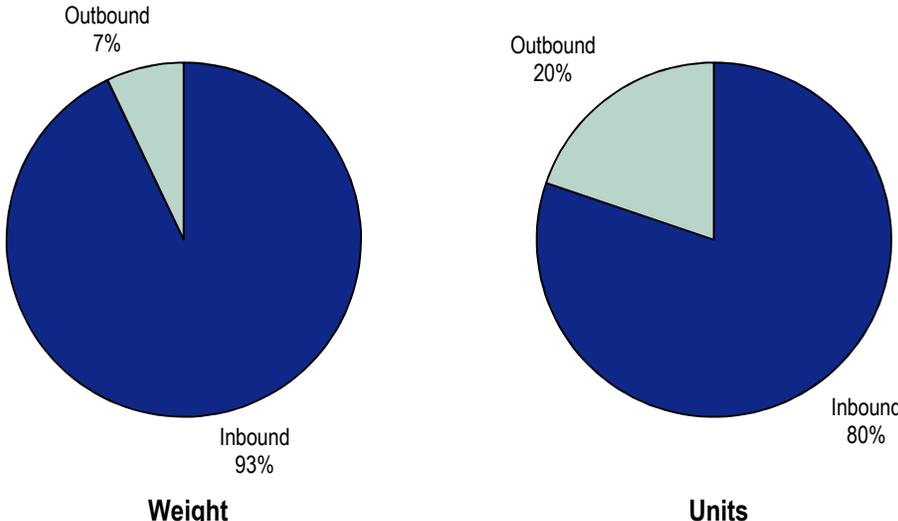
Source: 2009 Full Surface Transportation Board (STB) Waybill data.

Figure 2.14 Direction of Rail Freight Flows by Weight and Units
2040 Forecast 1 (Exclusive of Through Traffic)



Source: 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics.

Figure 2.15 Direction of Rail Freight Flows by Weight and Units
2040 Forecast 2 (Exclusive of Through Traffic)



Source: 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

Table 2.4 Summary of Rail Freight Flows by Weight
2009-2040, Tons in Thousands (Exclusive of Through Tons)

Direction	2009			2040 (Forecast 1)			2040 (Forecast 2)		
	Carload	Intermodal	Total	Carload	Intermodal	Total	Carload	Intermodal	Total
Inbound	8,007	523	8,530	7,247	1,250	8,497	9,930	920	10,850
Outbound	304	175	480	376	350	726	427	400	828
Total	8,311	699	9,010	7,623	1,601	9,223	10,357	1,320	11,678

Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

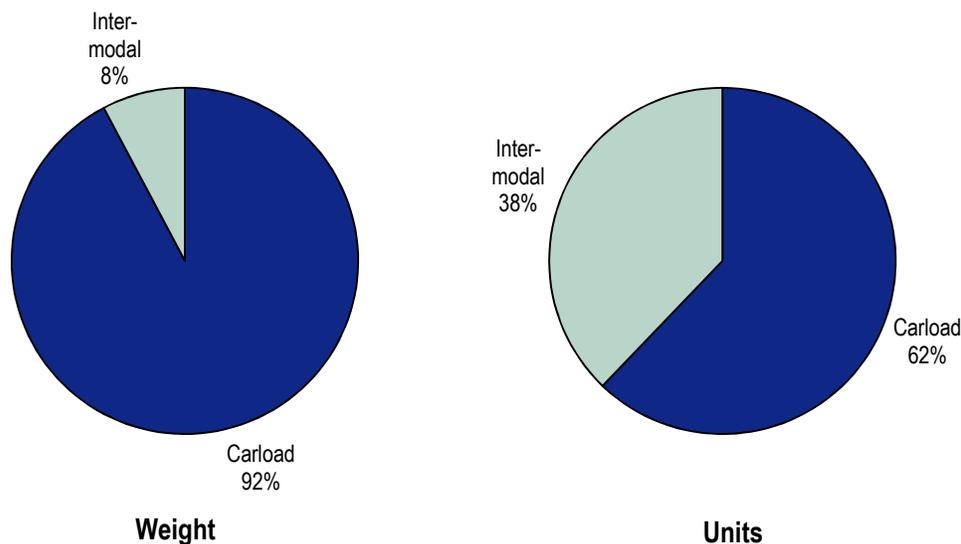
Table 2.5 Summary of Rail Freight Flows by Units
2009-2040, Units in Thousands (Exclusive of Through Tons)

Direction	2009			2040 (Forecast 1)			2040 (Forecast 2)		
	Carload	Intermodal	Total	Carload	Intermodal	Total	Carload	Intermodal	Total
Inbound	88	38	126	82	91	173	112	69	181
Outbound	4	18	22	5	36	41	6	38	45
Total	92	56	148	87	127	214	118	107	226

Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

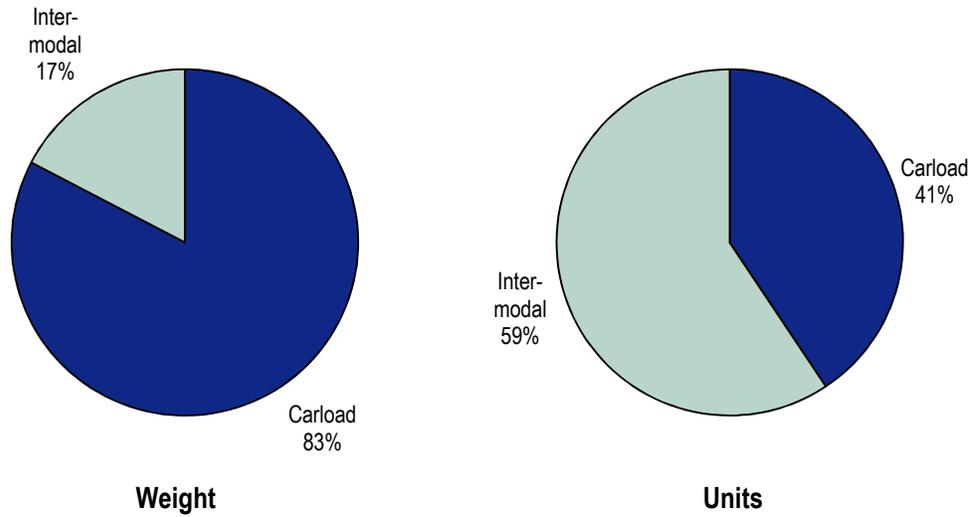
By type of rail equipment – carload or intermodal container – the data show that in 2010 92 percent of tonnage was carried in railcars and 9 percent in intermodal containers, as charted in Figure 2.16. However, intermodal containers (which include both containers and truck trailers moved on flat cars) accounted for 38 percent of all rail equipment units moved in the study region. The disparity between the share of intermodal tonnage and intermodal units is due to the fact that intermodal shipments tend to be higher-value and lower-weight freight (such as consumer goods that require more packaging and have a low weight-to-volume ratio), while carload shipments tend to be heavier and lower value freight (such as coal and nonmetallic minerals that require little or no packaging and have a high weight-to-volume ratio). Over the next thirty years the share of intermodal shipments is expected to increase in weight and rail equipment units. Figures 2.17 and 2.18 illustrate the expected intermodal and carload shares for 2040, and in the most conservative scenario (see Figure 2.19) the intermodal share is expected to grow to 11 percent of the rail tonnage and 48 percent of the rail containers.

Figure 2.16 Intermodal/Carload Rail Freight Flows by Weight and Units
 2009 (Exclusive of Through Traffic)



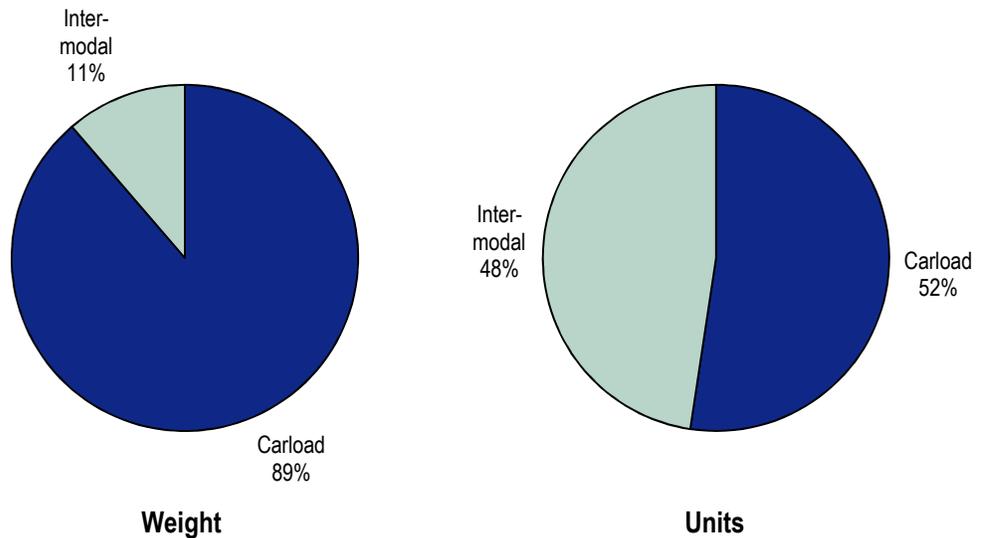
Source: 2009 Full Surface Transportation Board (STB) Waybill data.

**Figure 2.17 Intermodal/Carload Rail Freight Flows by Weight and Units
2040 Forecast 1 (Exclusive of Through Traffic)**



Source: 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics.

**Figure 2.18 Intermodal/Carload Rail Freight Flows by Weight and Units
2040 Forecast 2 (Exclusive of Through Traffic)**



Source: 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

2.4 ANALYSIS BY COMMODITY TYPE

It is also important to understand the types of commodities being moved along the study region's freight transportation infrastructure. The TRANSEARCH data as well as the Carload Waybill Sample data provides commodity information at the two-digit Standard Transportation Commodity Code (STCC) level. A complete list of commodity groups by STCC number is shown in Table 2.6.

Table 2.6 Major Commodity Groups

STCC2	Commodity Description	STCC2	Commodity Description
01	Farm Products	32	Clay, Concrete, Glass, or Stone Products
08	Forest Products	33	Primary Metal Products
09	Fish or Other Marine Products	34	Fabricated Metal Products
10	Metallic Ores	35	Machinery; Except Electrical
11	Coal	36	Electrical Machinery, Equipment, or Supplies
13	Crude Petroleum, Natural Gas, or Gasoline	37	Transportation Equipment
14	Nonmetallic Minerals	38	Instruments, Optical Goods, Watches, or Clocks
19	Ordnance or Accessories	39	Miscellaneous Manufactured Products
20	Food or Kindred Products	40	Waste or Scrap Materials
21	Tobacco Products	41	Miscellaneous Freight Shipments
22	Textile Mill Products	42	Empty Shipping Containers
23	Apparel	43	Mail
24	Lumber or Wood Products	44	Freight Forwarder Traffic
25	Furniture or Fixtures	45	Shipper Association or Similar Traffic
26	Pulp, Paper, or Allied Products	46	Miscellaneous Mixed Shipments
27	Printed Matter	47	Small Packaged Freight Shipments
28	Chemicals or Allied Products	48	Hazardous Waste
29	Petroleum or Coal Products	49	Hazardous Materials
30	Rubber or Miscellaneous Plastics Products	50	Warehoused Goods (Final Consumer Goods)
31	Leather		

Source: Association of American Railroads Standard Transportation Commodity Code (STCC).

Total Commodities

Overview

The top commodities by weight transported into, out of and within the region via truck, rail and water are shown in Table 2.7 and 2.8. The top five commodities in both 2010 and 2040 are nonmetallic ores and mineral, clay, concrete, glass and stone products, warehoused goods (defined here as freight flows to and from distribution centers or via intermodal facilities and typically

represents consumer goods), food and kindred products, and petroleum and coal products. Combined they account for nearly 85 percent of the total inbound, outbound and intraregional freight in 2010 and in 2040 (see Figures 2.19, 2.20 and 2.21). It should be noted that three of the top 10 commodities (nonmetallic minerals; clay, concrete, glass, and stone; and coal) are heavy and have relatively low value compared to finished or intermediate manufactured goods (petroleum and coal products, chemical products, and warehoused goods). Shippers of basic materials, such as coal, tend to be more concerned with minimizing the cost of transportation rather than speed of delivery, while shippers of manufactured goods tend to emphasize travel times and reliability over per-ton mile transport cost.

Table 2.7 Top 10 Commodities by Weight – Inbound, Outbound, and Intraregional
2010, Tons in Thousands

Commodity	STCC2	Truck	Rail ^a	Water	Total
Nonmetallic Ores and Minerals	14	21,811	4,259	242	26,312
Clay, Concrete, Glass, Stone Products	32	17,681	365	175	18,222
Warehoused Goods (Consumer Goods)	50	13,656	0	0	13,656
Food and Kindred Products	20	5,549	518	1	6,067
Petroleum or Coal Products	29	4,172	26	0	4,198
Chemicals or Allied Products	28	1,838	351	187	2,374
Coal	11	0	2,282	0	2,282
Lumber or Wood Products	24	1,709	43	0	1,752
Printed Matter	27	966	3	13	981
Farm Products	01	853	25	0	878
All Others		3,701	1,138	20	4,860
Total		71,936	9,010	638	81,583

Source: 2010 FDOT Trade and Logistics data and 2009 Full Surface Transportation Board (STB) Waybill data.

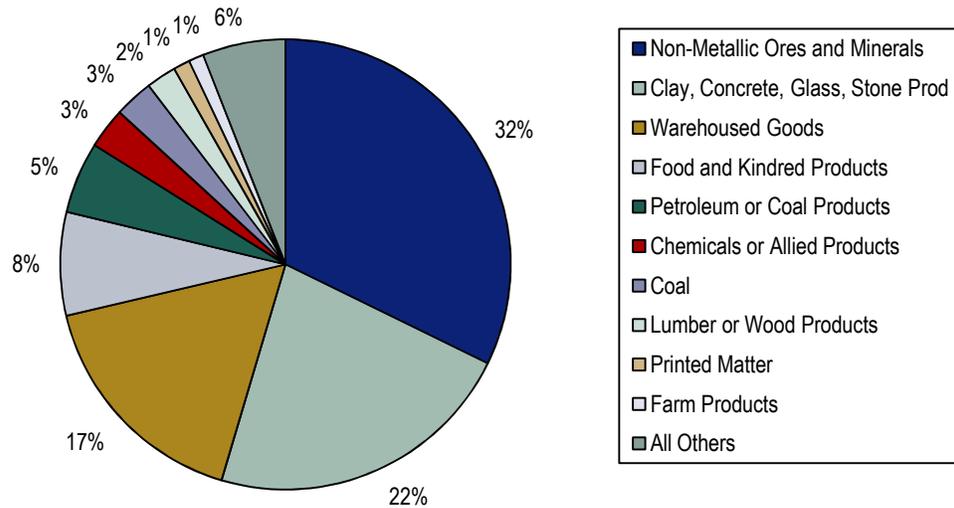
^a The base year for the rail data is 2009.

**Table 2.8 Top 10 Commodities by Weight – Inbound, Outbound, and Intraregional
2040, Tons in Thousands**

Commodity	STCC2	2040 (Forecast 1)				Commodity	STCC2	2040 (Forecast 2)			
		Truck	Rail	Water	Total			Truck	Rail	Water	Total
Warehoused Goods (Consumer Goods)	50	30,140	0	0	30,140	Non-Metallic Ores and Minerals	14	22,525	6,105	316	28,946
Clay, Concrete, Glass, Stone Prod.	32	28,721	553	230	29,503	Clay, Concrete, Glass, Stone Prod.	32	24,272	660	230	25,162
Non-Metallic Ores and Minerals	14	15,175	2,636	316	18,127	Warehoused Goods (Consumer Goods)	50	23,447	0	0	23,447
Food and Kindred Products	20	8,117	874	1	8,992	Food and Kindred Products	20	8,182	903	1	9,086
Petroleum or Coal Products	29	4,988	41	0	5,029	Petroleum or Coal Products	29	5,260	38	0	5,298
Lumber or Wood Products	24	3,840	99	0	3,939	Chemicals or Allied Products	28	3,891	642	244	4,777
Coal	11	0	2,811	0	2,811	Lumber or Wood Products	24	1,576	64	0	1,640
Chemicals or Allied Products	28	1,147	278	244	1,669	Farm Products	01	1,484	28	0	1,511
Farm Products	01	1,186	41	0	1,228	Electric Machinery, Equip., Supplies	36	1,184	83	0	1,267
Miscellaneous Mixed Shipments	46	0	775	19	795	Coal	11	0	1,184	0	1,184
All Others		3,639	1,115	41	4,794	All Others		6,206	1,972	60	8,237
Total		96,953	9,223	851	107,028	Total		98,027	11,678	851	110,556

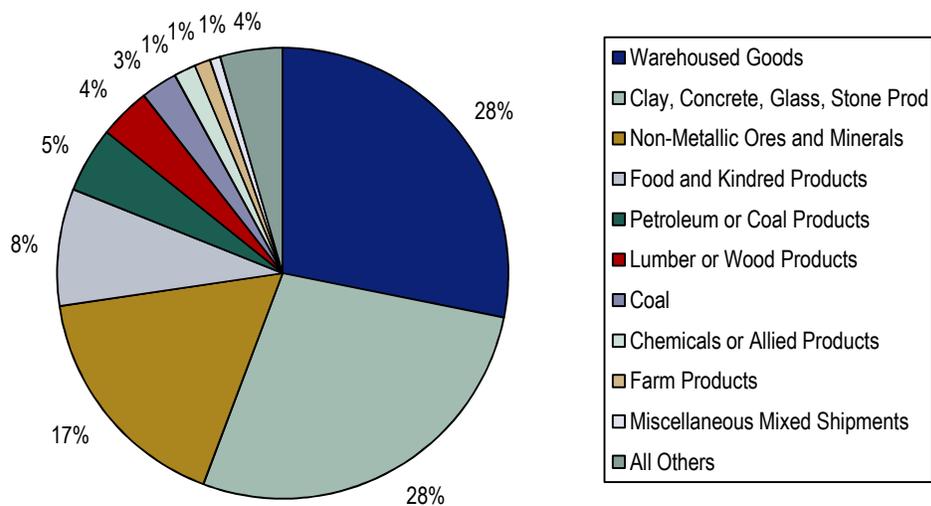
Source: 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

**Figure 2.19 Top 10 Commodities by Weight – Inbound, Outbound, and Intra-regional
2010**



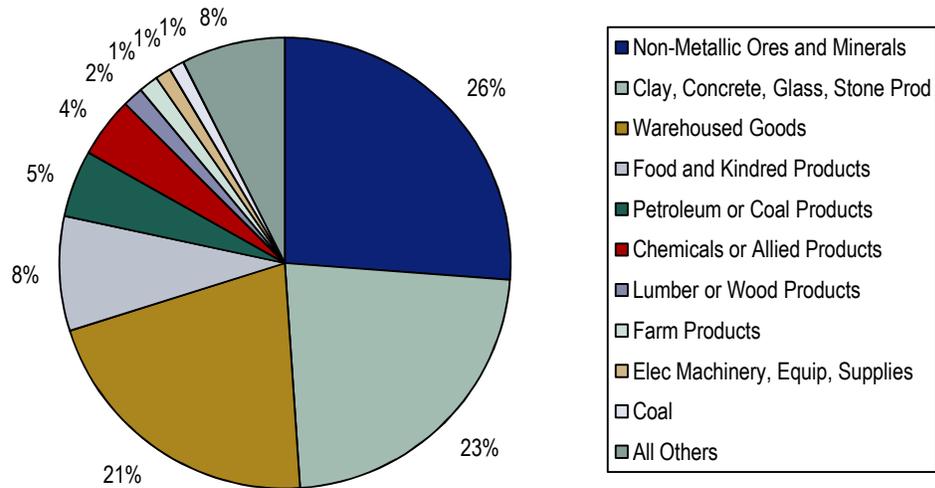
Source: 2010 FDOT Trade and Logistics data and 2009 Full Surface Transportation Board (STB) Waybill data.

**Figure 2.20 Top 10 Commodities by Weight – Inbound, Outbound, and Intra-regional
2040 (Forecast 1)**



Source: 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics.

**Figure 2.21 Top 10 Commodities by Weight – Inbound, Outbound, and Intra-regional
2040 (Forecast 2)**



Source: 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

Inbound Commodities

Tables 2.9 and 2.10 detail the freight tonnage inbound to the region in 2010 and 2040. Inbound shipments are regional imports and represent consumer goods for the regions’ residents and visitors and inputs for the regions producers. Inbound freight in 2010 totaled 38 million tons, a 19 percent share of the freight tonnage moved in the region. The top inbound commodities are nonmetallic ores and minerals, clay concrete, glass or stone products, warehoused goods, food and kindred products, and petroleum and coal products. Combined these commodity groups represented 79 percent (30 million tons) in 2010 and over 80 percent (40 million to 47 million tons depending on the forecast scenario) in 2040. Figures 2.22, 2.23 and 2.24 display this information graphically.

Table 2.9 Top 10 Commodities by Weight – Inbound
2010, Tons in Thousands

Commodity	STCC2	Truck	Rail^a	Water	Total
Nonmetallic Ores and Minerals	14	6,876	4,258	242	11,376
Clay, Concrete, Glass, Stone Products	32	6,568	337	175	7,080
Warehoused Goods (Consumer Goods)	50	5,365	0	0	5,365
Food and Kindred Products	20	2,867	493	0	3,360
Petroleum or Coal Products	29	2,610	26	0	2,637
Coal	11	0	2,282	0	2,282
Chemicals or Allied Products	28	624	302	187	1,113
Lumber or Wood Products	24	967	43	0	1,010
Primary Metal Products	33	743	43	0	785
Farm Products	01	369	24	0	394
All Others		1,756	720	16	2,493
Total		28,745	8,530	620	37,894

Source: 2010 FDOT Trade and Logistics data and 2009 Full Surface Transportation Board (STB) Waybill data.

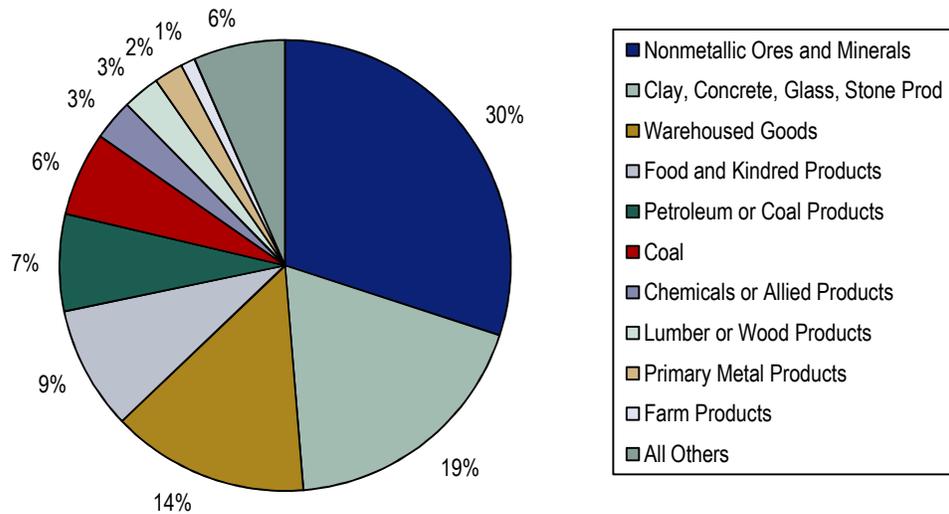
^a The base year for the rail data is 2009.

Table 2.10 Top 10 Commodities by Weight – Inbound
2040, Tons in Thousands

Commodity	STC C2	2040 (Forecast 1)				Commodity	STCC2	2040 (Forecast 2)			
		Truck	Rail	Water	Total			Truck	Rail	Water	Total
Warehoused Goods (Consumer Goods)	50	12,475	0	0	12,475	Non-Metallic Ores and Minerals	14	10,004	6,104	316	16,425
Clay, Concrete, Glass, Stone Prod.	32	10,801	511	229	11,541	Clay, Concrete, Glass, Stone Prod.	32	11,240	625	229	12,094
Non-Metallic Ores and Minerals	14	4,779	2,634	316	7,729	Warehoused Goods (Consumer Goods)	50	9,279	0	0	9,279
Food and Kindred Products	20	4,366	832	0	5,198	Food and Kindred Products	20	4,022	867	0	4,889
Petroleum or Coal Products	29	3,160	41	0	3,200	Petroleum or Coal Products	29	3,946	38	0	3,983
Coal	11	0	2,811	0	2,811	Chemicals or Allied Products	28	989	500	244	1,733
Lumber or Wood Products	24	2,593	99	0	2,692	Coal	11	0	1,184	0	1,184
Chemicals or Allied Products	28	362	204	244	810	Lumber or Wood Products	24	923	64	0	987
Miscellaneous Mixed Shipments	46	0	705	1	706	Primary Metal Products	33	790	123	0	913
Farm Products	01	563	41	0	604	Farm Products	01	840	27	0	867
All Others		1,880	619	16	2,514	All Others		3,238	1,319	17	4,573
Total		40,979	8,497	806	50,282	Total		45,270	10,850	806	56,926

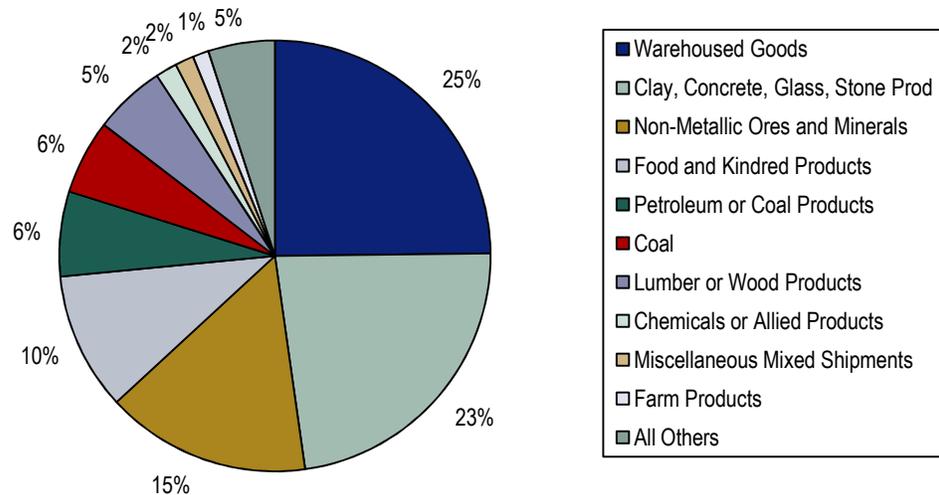
Source: 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

**Figure 2.22 Top 10 Commodities by Weight – Inbound
2010**



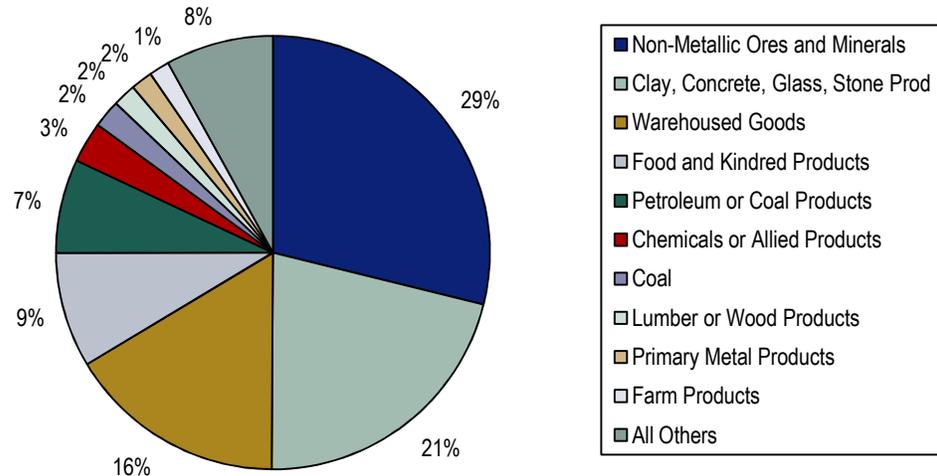
Source: 2010 FDOT Trade and Logistics dataset and 2009 full Surface Transportation Board (STB) Waybill dataset.

**Figure 2.23 Top 10 Commodities by Weight – Inbound
2040 (Forecast 1)**



Source: 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics.

**Figure 2.24 Top 10 Commodities by Weight – Inbound
2040 (Forecast 2)**



Source: 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

Outbound Commodities

Table 2.11 and 2.12 display top outbound commodities by weight in 2010 and 2040 respectively. These shipments, totaling 23 million tons in 2010, represent regional exports or wealth-generating freight. Ensuring efficient freight transportation for these exported goods is of great importance to producers and, therefore, is critical to the economic competitiveness of the region. The top outbound commodities are warehouse and distribution goods representing 32 percent (7.5 million tons) of the outbound tons; clay, concrete, glass or stone products accounting for 20 percent (4.5 million tons); nonmetallic ores and minerals accounting for 15 percent (3.5 million tons); and food and kindred products accounting for 8 percent (1.9 million tons). The commodity groups are displayed graphically in Figure 2.25, 2.26 and 2.27.

Table 2.11 Top 10 Commodities by Weight – Outbound
2010, Tons in Thousands

Commodity	STCC2	Truck	Rail^a	Water	Total
Warehoused Goods (Consumer Goods)	50	7,504	0	0	7,504
Clay, Concrete, Glass, Stone Products	32	4,492	28	0	4,520
Nonmetallic Ores and Minerals	14	3,544	1	0	3,544
Food and Kindred Products	20	1,855	25	1	1,880
Chemicals or Allied Products	28	1,198	49	0	1,246
Petroleum or Coal Products	29	803	0	0	803
Lumber or Wood Products	24	692	0	0	692
Printed Matter	27	591	0	0	591
Farm Products	01	479	0	0	479
Fabricated Metal Products	34	370	0	0	370
All Others		1,106	378	17	1,500
Total		22,631	480	18	23,129

Source: 2010 FDOT Trade and Logistics dataset and 2009 Full Surface Transportation Board (STB) Waybill data.

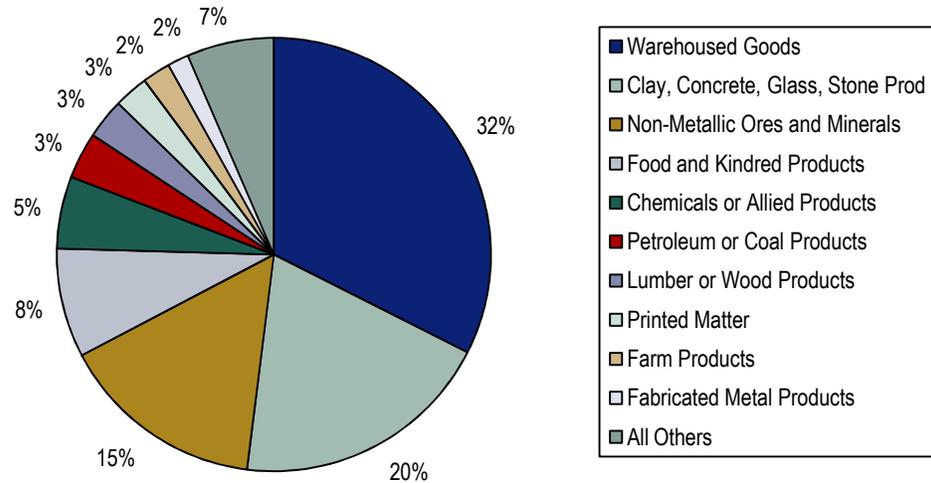
^a The base year for the rail data is 2009.

Table 2.12 Top 10 Commodities by Weight – Outbound
 2040, Tons in Thousands

Commodity	STCC2	2040 (Forecast 1)				Commodity	STCC2	2040 (Forecast 2)			
		Truck	Rail	Water	Total			Truck	Rail	Water	Total
Warehoused Goods (Consumer Goods)	50	15,833	0	0	15,833	Warehoused Goods (Consumer Goods)	50	12,817	0	0	12,817
Clay, Concrete, Glass, Stone Prod.	32	7,029	42	0	7,071	Clay, Concrete, Glass, Stone Prod.	32	5,486	35	0	5,522
Food and Kindred Products	20	2,498	42	1	2,541	Food and Kindred Products	20	3,087	35	1	3,124
Non-Metallic Ores and Minerals	14	2,480	2	0	2,481	Chemicals or Allied Products	28	2,884	142	0	3,026
Lumber or Wood Products	24	1,111	0	0	1,111	Non-Metallic Ores and Minerals	14	2,358	1	0	2,359
Petroleum or Coal Products	29	910	0	0	911	Petroleum or Coal Products	29	781	0	0	781
Chemicals or Allied Products	28	776	74	0	849	Electric Machinery, Equip., Supplies	36	662	0	0	662
Farm Products	01	615	1	0	616	Farm Products	01	637	1	0	638
Fabricated Metal Products	34	335	0	0	335	Lumber or Wood Products	24	616	0	0	616
Waste or Scrap Materials NEC	40	0	288	0	288	Printed Matter	27	500	0	0	500
All Others		1,355	278	43	1,676			2,097	614	43	2,754
Total		32,942	726	45	33,713	Total		31,925	828	45	32,798

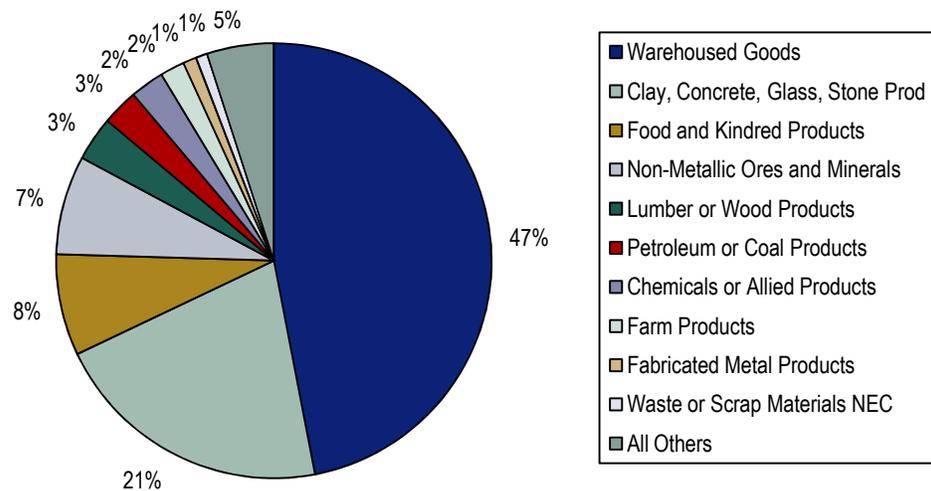
Source: 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

**Figure 2.25 Top 10 Commodities by Weight – Outbound
2010**



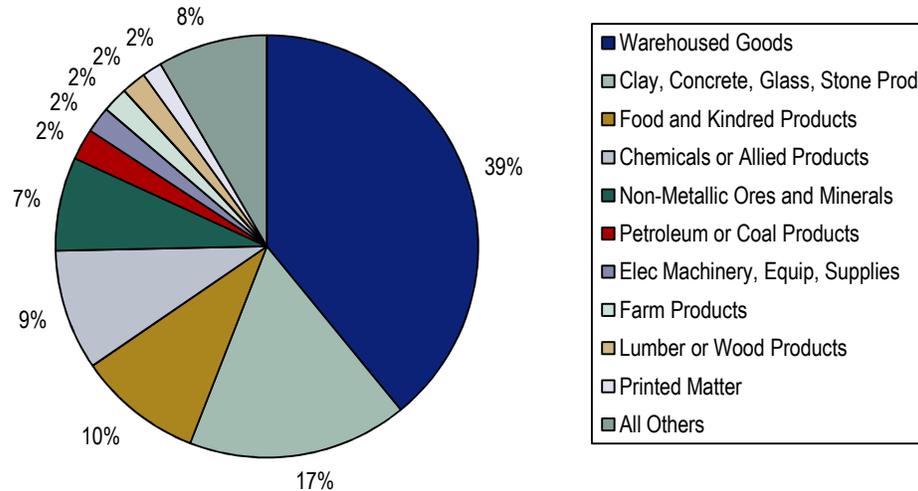
Source: 2010 FDOT Trade and Logistics data and 2009 Full Surface Transportation Board (STB) Waybill data.

**Figure 2.26 Top 10 Commodities by Weight – Outbound
2040 (Forecast 1)**



Source: 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics.

**Figure 2.27 Top 10 Commodities by Weight – Outbound
2040 (Forecast 2)**



Source: 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

Intraregional Commodities

Table 2.13 and 2.14 summarize the level of intraregional freight movement in 2010 and 2040. These shipments, totaling 21 million tons, are essential for meeting the demands of local producers, and supporting local construction activity and personal consumption within the region. The top intraregional commodities are nonmetallic ores and minerals (11 million tons), and clay, concrete, glass, and stone products (6.6 million tons). These shipments are essential for the local construction industry and together account for 88 percent of the intraregional tonnage in 2010 and 82 - 85 percent in 2040. Food and kindred products, warehoused goods, and petroleum and coal products each account for a 4 percent share of the intraregional moves in 2010 and these shares are expected to fluctuate between 3 and 8 percent over the next thirty years. Figures 2.28, 2.29 and 2.30 display this information graphically.

**Table 2.13 Top 10 Commodities by Weight – Intraregional
2010, Tons in Thousands**

Commodity	STCC2	Truck	Rail^a	Water	Total
Nonmetallic Ores and Minerals	14	11,392	0	0	11,392
Clay, Concrete, Glass, Stone Products	32	6,622	0	0	6,622
Food and Kindred Products	20	827	0	0	827
Warehoused Goods (Consumer Goods)	50	788	0	0	788
Petroleum or Coal Products	29	759	0	0	759
Lumber or Wood Products	24	51	0	0	51
Printed Matter	27	35	0	0	35
Fabricated Metal Products	34	21	0	0	21
Chemicals or Allied Products	28	16	0	0	16
Pulp, Paper or Allied Products	26	14	0	0	14
All Others		35	0	0	35
Total		20,560	0	0	20,560

Source: 2010 FDOT Trade and Logistics data and 2009 Full Surface Transportation Board (STB) Waybill data.

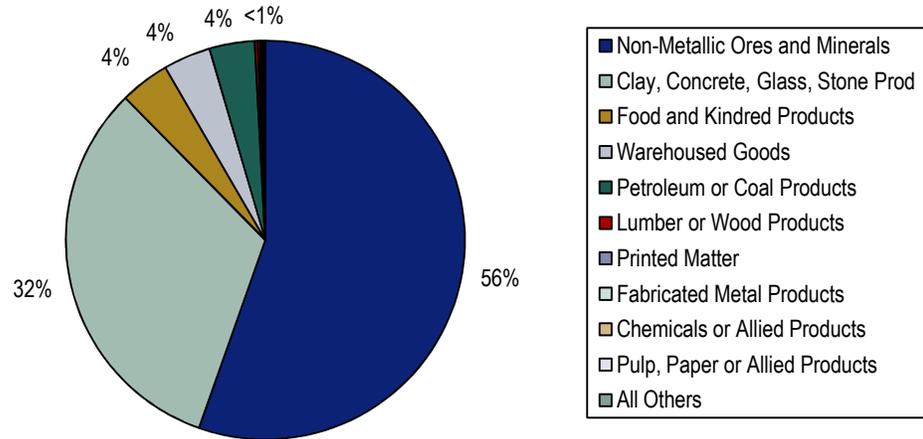
^a The base year for the rail data is 2009.

**Table 2.14 Top 10 Commodities by Weight – Intraregional
2040, Tons in Thousands**

Commodity	STCC2	2040 (Forecast 1)				Commodity	STCC2	2040 (Forecast 2)			
		Truck	Rail	Water	Total			Truck	Rail	Water	Total
Clay, Concrete, Glass, Stone Prod.	32	10,891	0	0	10,891	Non-Metallic Ores and Minerals	14	10,163	0	0	10,163
Non-Metallic Ores and Minerals	14	7,917	0	0	7,917	Clay, Concrete, Glass, Stone Prod.	32	7,547	0	0	7,547
Warehoused Goods (Consumer Goods)	50	1,832	0	0	1,832	Warehoused Goods (Consumer Goods)	50	1,351	0	0	1,351
Food and Kindred Products	20	1,253	0	0	1,253	Food and Kindred Products	20	1,074	0	0	1,074
Petroleum or Coal Products	29	918	0	0	918	Petroleum or Coal Products	29	533	0	0	533
Lumber or Wood Products	24	136	0	0	136	Lumber or Wood Products	24	36	0	0	36
Fabricated Metal Products	34	16	0	0	16	Electric Machinery, Equip, Supplies	36	23	0	0	23
Printed Matter	27	14	0	0	14	Printed Matter	27	18	0	0	18
Chemicals or Allied Products	28	9	0	0	9	Chemicals or Allied Products	28	18	0	0	18
Furniture or Fixtures	25	9	0	0	9	Fabricated Metal Products	34	15	0	0	15
All Others		39	0	0	39	All Others		54	0	0	54
Total		23,033	0	0	23,033	Total		20,832	0	0	23,832

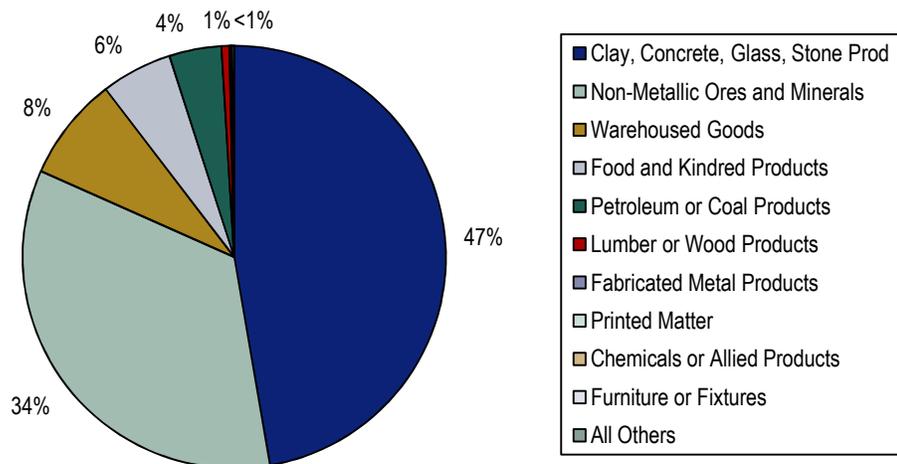
Source: 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

**Figure 2.28 Top 10 Commodities by Weight – Intraregional
2010**



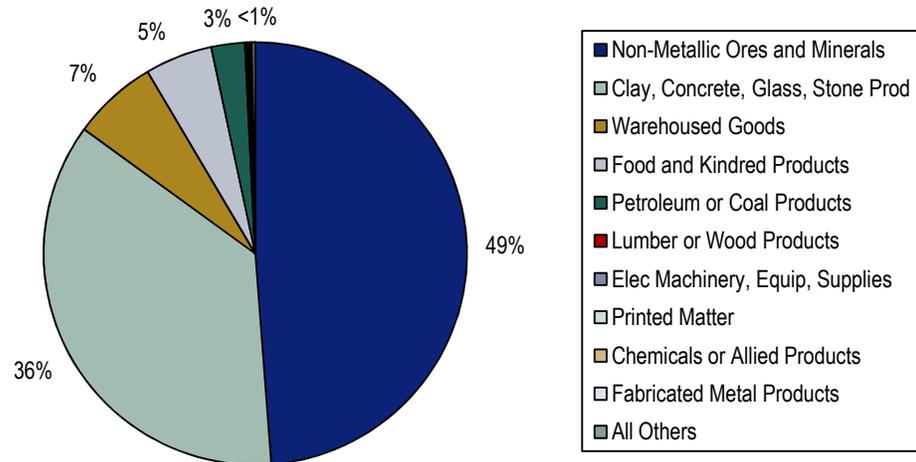
Source: 2010 FDOT Trade and Logistics data and 2009 Full Surface Transportation Board (STB) Waybill data.

**Figure 2.29 Top 10 Commodities by Weight – Intraregional
2040 (Forecast 1)**



Source: 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics.

**Figure 2.30 Top 10 Commodities by Weight – Intraregional
2040 (Forecast 2)**



Source: 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

2.5 ANALYSIS BY TRADING PARTNER

In addition to the analysis by mode and commodity summarized in the previous sections, it is also important to identify the region’s key trading partners. A better understanding of where the region’s shipments are originating and terminating is a critical step to understanding length of haul, market penetration, and modal preference. Key trading partners are identified by combining the inbound and outbound freight flows between the study area and the trading partner region and highlighting the trading partner regions with the largest freight flows.

Trading Partners

The “trading partners” (external to the Central Florida study region) consist of the counties within Florida, the Bureau of Economic Analysis (BEA) regions in the rest of the U.S., and the neighboring countries of Canada and Mexico.⁴

The top trading partners for freight movements into and out of the region by weight in 2010 and 2040 are shown in Table 2.15. Figures 2.31 and 2.32 display the information geographically for 2010, and Figures 2.33 to 2.36 display this information for the two 2040 forecasts. The top three trading partners are

⁴ Flows originating or terminating in Canada or Mexico only include rail and waterborne movements.

Miami-Dade County, Marion County, and Polk County. These Floridian counties account for 29 percent (17 million tons) of total inbound and outbound flows by weight in 2010, and in 2040 these counties represent 26 to 29 percent (22 million to 26 million) depending on the conservative or optimistic forecast. The fact that seven of the top ten trading partners are other counties within Florida is evidence that the Central Florida study region is particularly important economically to the State of Florida.

Trading Partner - Miami-Dade County

Over two-hundred miles south of the study area, Miami-Dade County, Florida is the Central Florida region's top trading partner. Table 2.16 and Figure 2.37 show the commodity composition of this trade. In 2010, the top commodity groups moving to and from Miami-Dade County were nonmetallic ores and minerals, and warehoused goods, together accounting for 71 percent of total trade by weight in 2010 and 2040. Nearly all shipments of nonmetallic minerals traded between Miami-Dade and the study region are inbound and transported to the region by rail. In fact, 42 percent of all trade between the study region and Miami-Dade County is moved by rail. Trucks haul nearly 59 percent of all goods traded with Miami-Dade County.

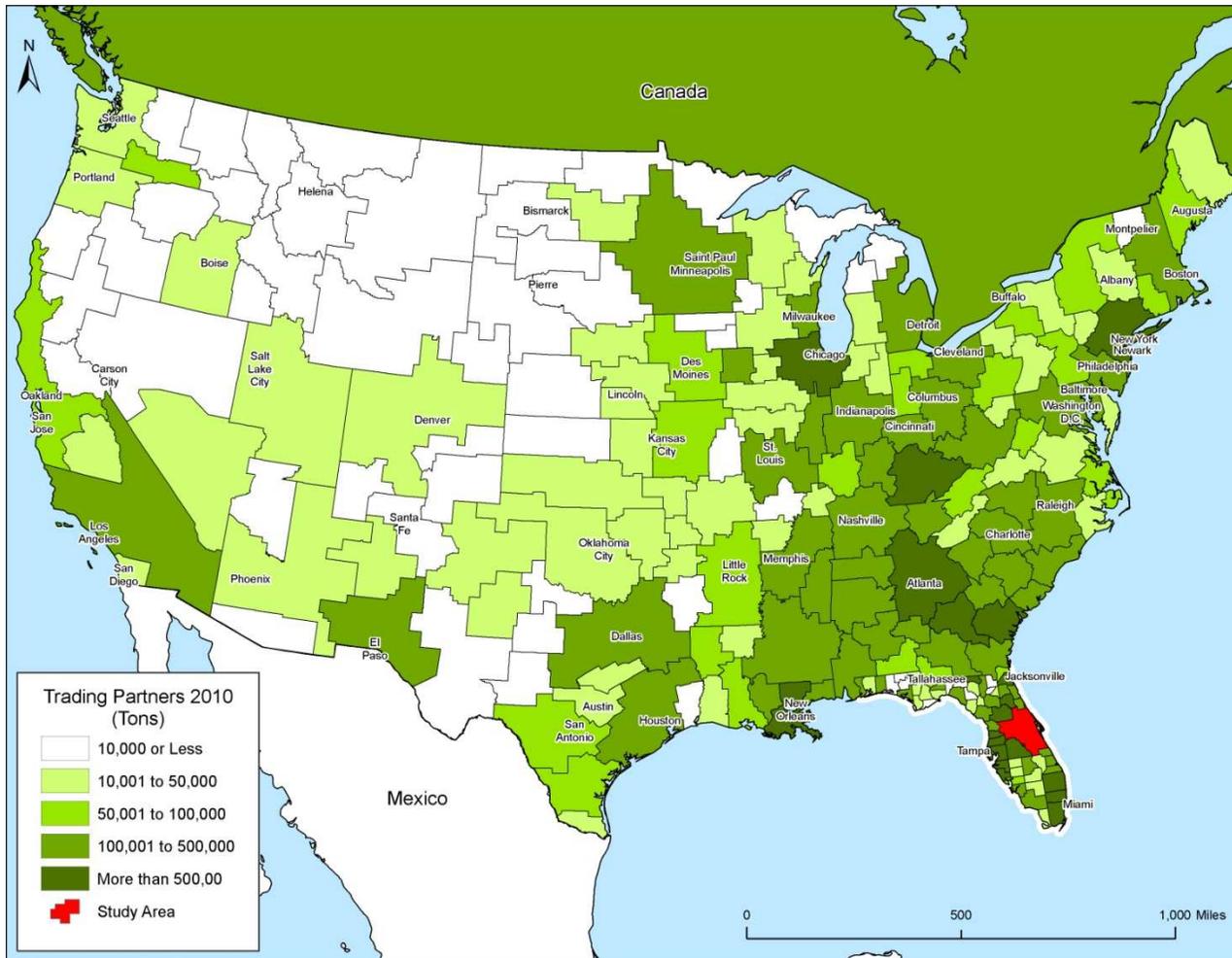
Table 2.15 Top 10 Trading Partners by Total Weight
2010-2040, Tons in Thousands

Trading Partner	2010			2040 (Forecast 1)			2040 (Forecast 2)		
	Total ^a	Inbound	Outbound	Total ^a	Inbound	Outbound	Total ^a	Inbound	Outbound
Miami-Dade County, FL	6,521	4,880	1,642	9,047	6,355	2,692	10,140	7,591	2,549
Marion County, FL	5,778	5,206	572	5,213	4,331	882	8,732	8,261	471
Polk County, FL	5,102	2,388	2,714	7,886	3,277	4,609	7,312	4,061	3,251
Hillsborough County, FL	3,681	2,031	1,650	5,528	2,887	2,641	4,657	2,487	2,170
Atlanta, GA	2,402	1,734	668	2,682	1,942	741	3,844	2,685	1,159
Duval County, FL	2,137	1,070	1,067	3,802	1,878	1,925	3,255	1,632	1,624
Lexington, KY	2,001	1,987	14	2,502	2,487	15	1,098	1,066	32
Hernando County, FL	1,873	1,292	581	1,729	1,061	668	1,962	1,461	501
Hamilton County, FL	1,823	0	1,823	3,862	0	3,862	3,115	0	3,115
Savannah, GA	1,806	1,620	187	2,438	2,201	237	3,320	3,050	270
Other	27,899	15,687	12,213	39,306	23,864	15,442	42,289	24,633	17,656
Total	61,024	37,894	23,129	83,995	50,282	33,713	89,724	56,926	32,798

Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

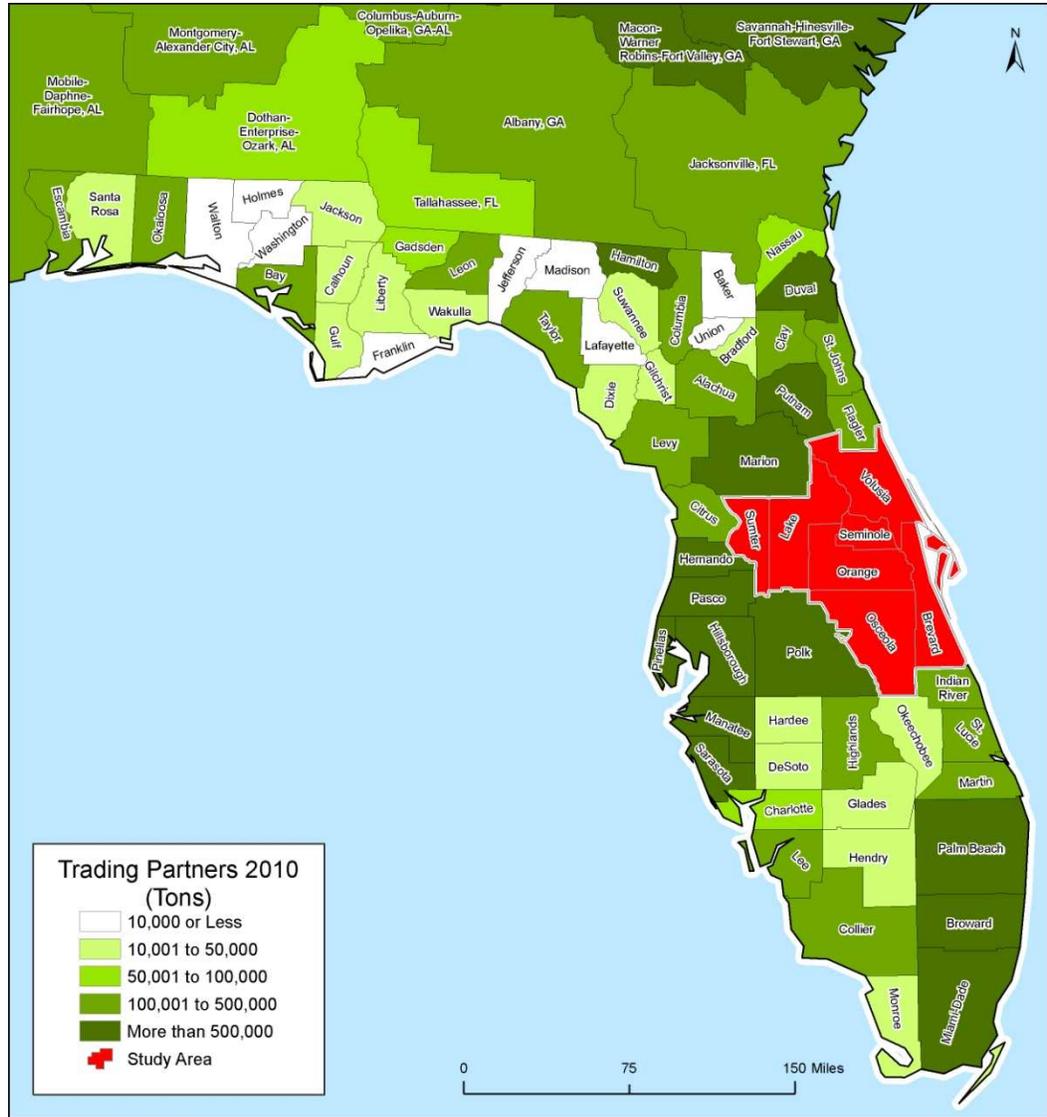
^a Total tonnage is the sum of the inbound and outbound tonnage.

Figure 2.31 Trading Partners by Weight
2010



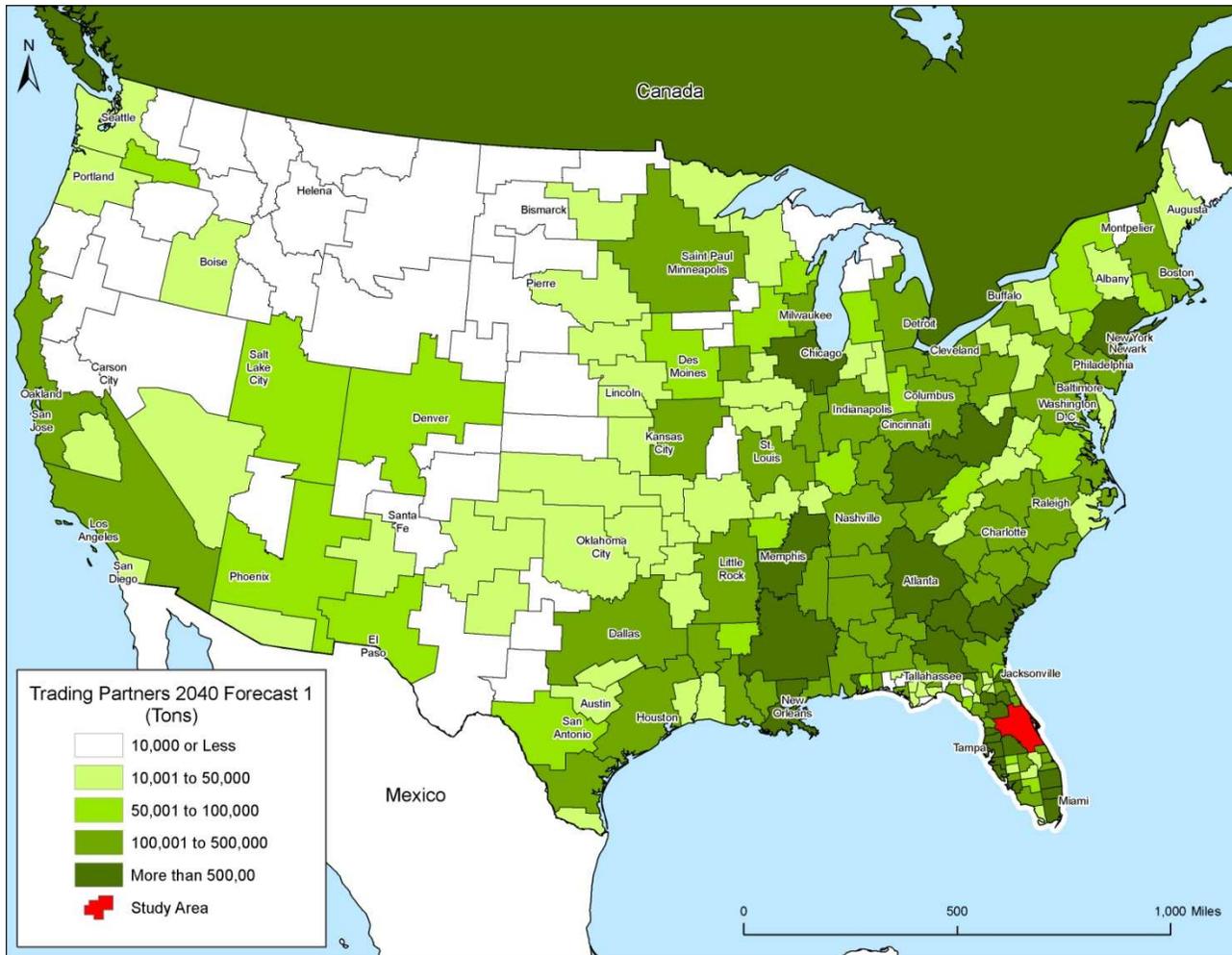
Source: Cambridge Systematics with 2010 FDOT Trade and Logistics data and 2009 Full Surface Transportation Board (STB) Waybill data.

Figure 2.32 Trading Partners by Weight – Florida Counties and Adjacent BEA
2010



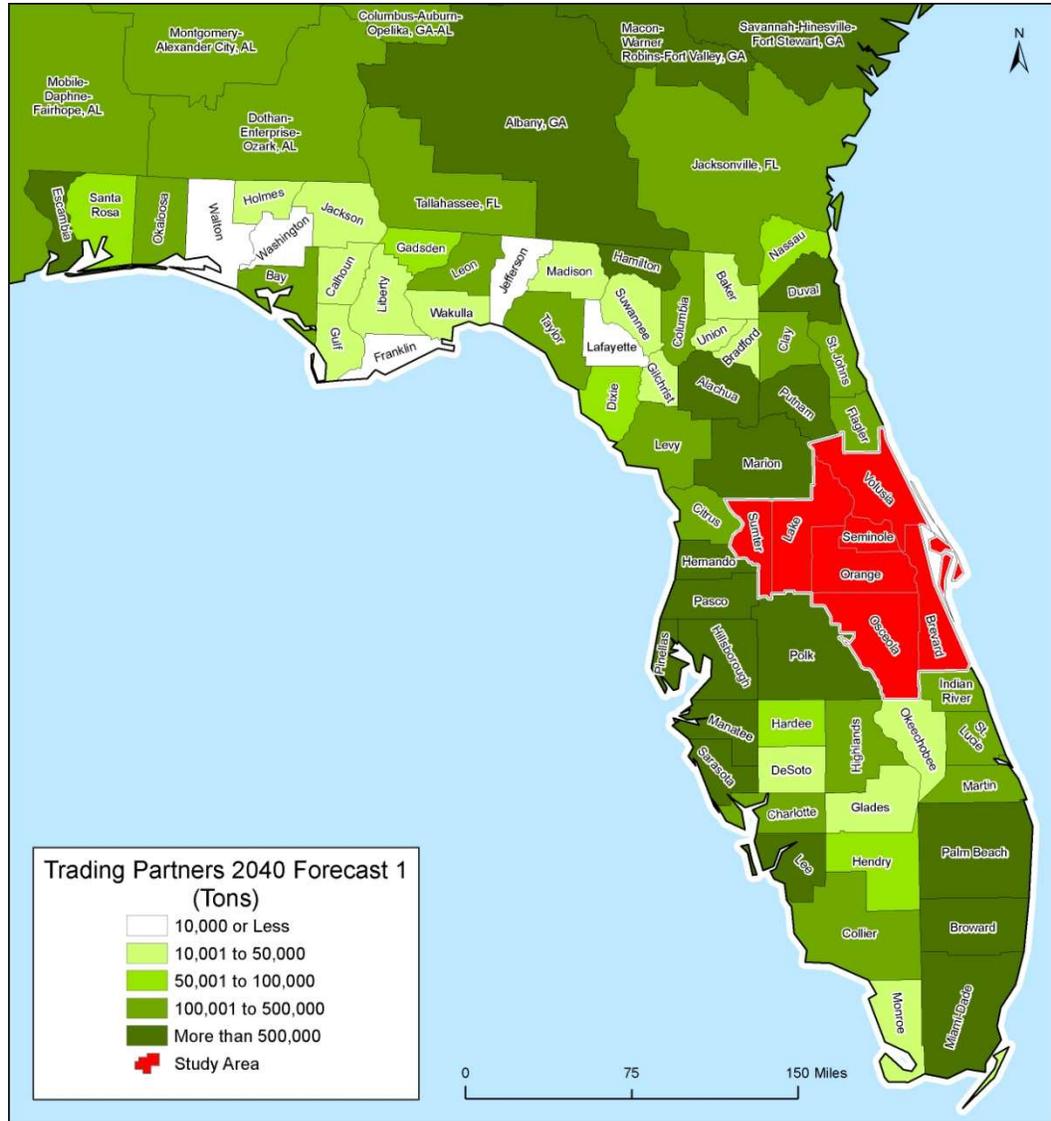
Source: Cambridge Systematics with 2010 FDOT Trade and Logistics data and 2009 Full Surface Transportation Board (STB) Waybill data.

Figure 2.33 Trading Partners by Weight
2040 (Forecast 1)



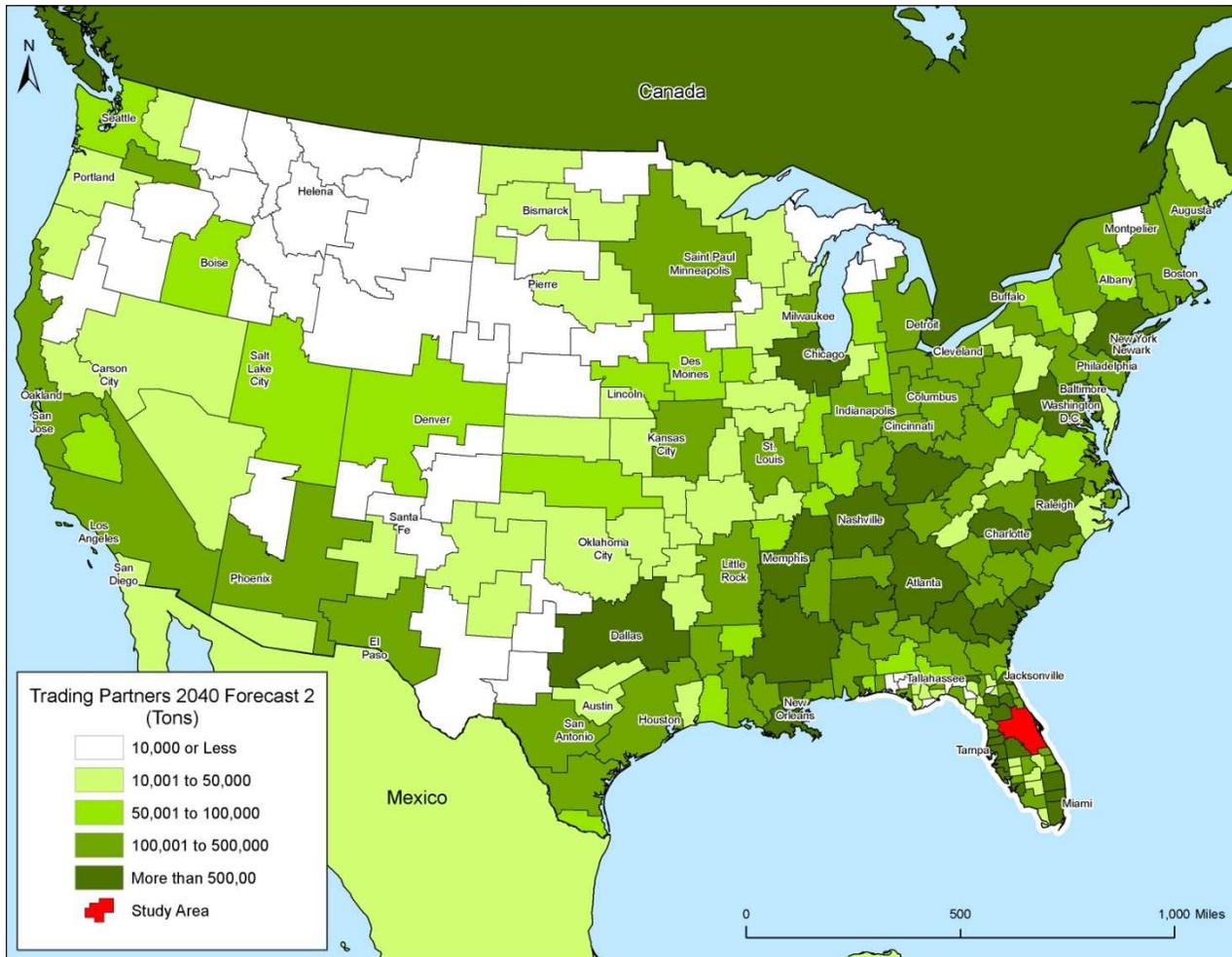
Source: Cambridge Systematics with 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics.

Figure 2.34 Trading Partners by Weight – Florida Counties and Adjacent BEA 2040 (Forecast 1)



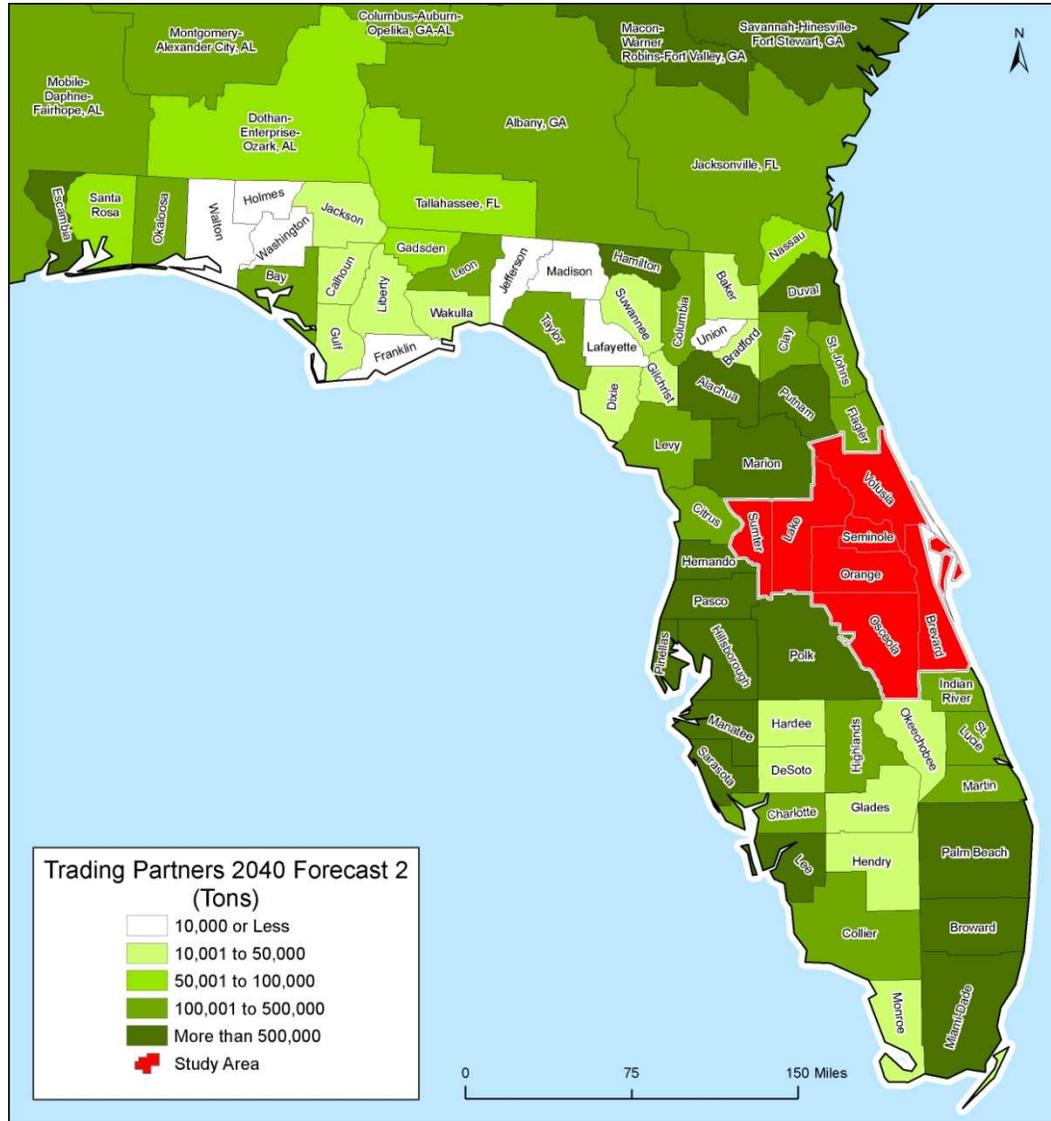
Source: Cambridge Systematics with 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics.

Figure 2.35 Trading Partners by Weight
2040 (Forecast 2)



Source: Cambridge Systematics with FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

Figure 2.36 Trading Partners by Weight – Florida Counties and Adjacent BEA 2040 (Forecast 2)



Source: Cambridge Systematics with FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

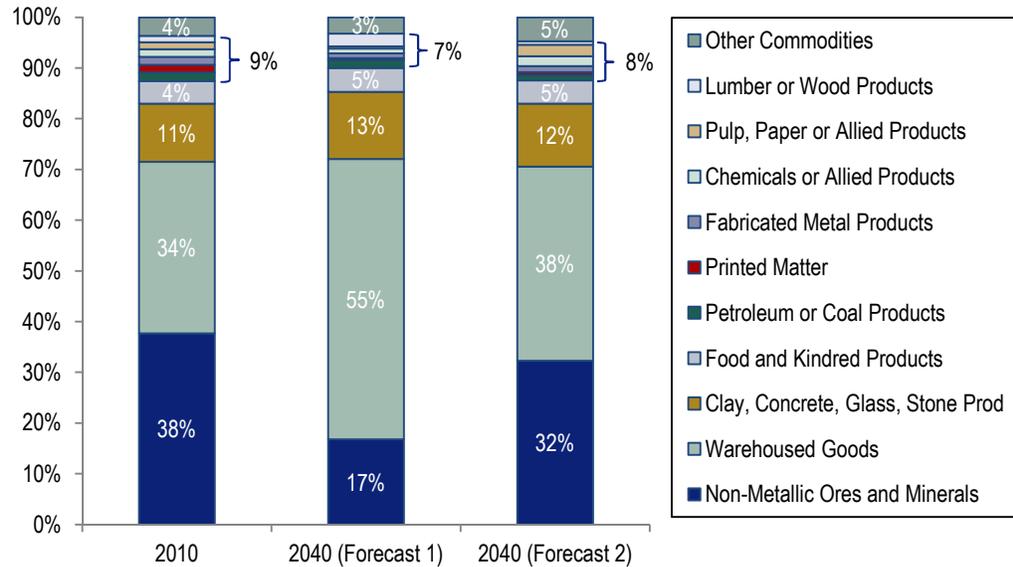
Table 2.16 Top 10 Central Florida/Miami-Dade County Commodities by Total Weight
 2010-2040, Tons in Thousands

Commodity	STCC2	2010 ^a	2040 (Fcst. 1)	2040 (Fcst. 2)	% Change (2010 to 2040 Fcst 1)	% Change (2010 to 2040 Fcst 2)
Nonmetallic Ores and Minerals	14	2,458	1,521	3,277	-38%	33%
Warehoused Goods (Consumer Goods)	50	2,205	5,000	3,876	127%	76%
Clay, Concrete, Glass, Stone Prod.	32	747	1,195	1,260	60%	69%
Food and Kindred Products	20	291	427	462	47%	59%
Petroleum or Coal Products	29	111	134	114	21%	3%
Printed Matter	27	101	41	53	-59%	-48%
Fabricated Metal Products	34	100	87	122	-13%	22%
Chemicals or Allied Products	28	99	84	197	-15%	99%
Pulp, Paper or Allied Products	26	88	39	230	-56%	161%
Lumber or Wood Products	24	84	225	67	168%	-20%
Other Commodities		237	293	481	24%	103%
Total		6,521	9,047	10,140	39%	55%

Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

^a The base year for the rail data is 2009.

Figure 2.37 Top 10 Central Florida/Miami-Dade County Commodities by Total Weight 2010-2040



Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

Trading Partner – Marion County

Adjacent to the north of the study region, Marion County, Florida, serves as the second largest trading partner. The trade between Marion County and the study region is mostly inbound, such is the case with the trade between Miami-Dade County and the region. The top ten commodities by weight in 2010 and 2040 moving between the region and Marion County are detailed in Table 2.17. Figure 2.38 displays the same information graphically. The top commodity group was nonmetallic ores and minerals. These shipments represent 79 percent of the trade and are hauled to and from Marion County by truck. By 2040, these shipments are expected to account for 61 or 80 percent depending on the low or high forecast. Nearly all of the moves from Marion County to the study region serve the construction industry in the region (95 percent are shipments of nonmetallic minerals, and clay, concrete, glass and stone products).

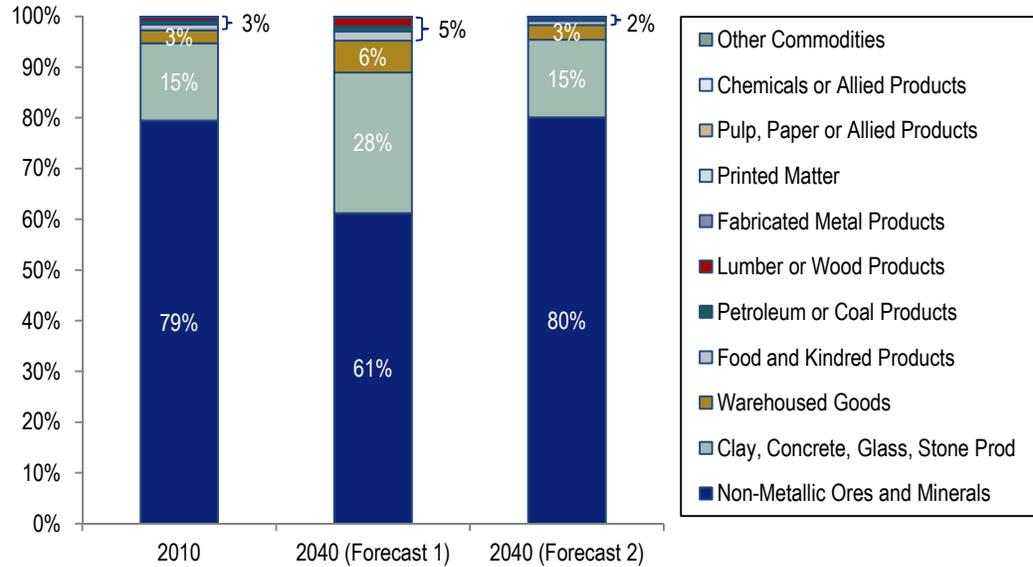
Table 2.17 Top 10 Central Florida/Marion County Commodities by Total Weight
2010-2040, Tons in Thousands

Commodity	STCC2	2010 ^a	2040 (Fcst. 1)	2040 (Fcst. 2)	% Change (2010 to 2040 Fcst 1)	% Change (2010 to 2040 Fcst 2)
Nonmetallic Ores or Minerals	14	4,591	3,191	6,991	-31%	52%
Clay, Concrete, Glass, Stone Prod.	32	879	1,446	1,337	64%	52%
Warehoused Goods (Consumer Goods)	50	149	326	254	119%	71%
Food and Kindred Products	20	65	96	69	47%	6%
Petroleum or Coal Products	29	42	51	39	21%	-7%
Lumber or Wood Products	24	34	90	25	168%	-25%
Fabricated Metal Products	34	5	4	4	-24%	-23%
Printed Matter	27	4	1	2	-61%	-43%
Pulp, Paper or Allied Products	26	2	1	2	-56%	-9%
Chemicals or Allied Products	28	2	1	2	-42%	9%
Other Commodities		5	6	7	14%	40%
Total		5,778	5,213	8,732	-10%	51%

Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

^a The base year for the rail data is 2009.

Figure 2.38 Top 10 Central Florida/Marion County Commodities by Total Weight 2010-2040



Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

Trading Partner – Polk County

Neighboring to the south of the study region, Polk County, Florida, is the region’s third largest trading partner. The inbound and outbound trade between the study region and Polk County is balanced (53 percent is outbound). Nearly all goods are transported by truck, which is expected since Polk County is adjacent to the region and the haul distance is usually less than 100 miles. Table 2.18 and Figure 2.39 detail the top commodities by weight moved in 2010 and 2040 between Polk County and the region. The top commodities include clay, concrete, glass and stone products, warehouse and distribution goods, and nonmetallic ores and minerals. In 2010 these shipments accounted for 85 percent of the moves to and from Polk County and in 2040 this share is expected to increase to 90 percent.

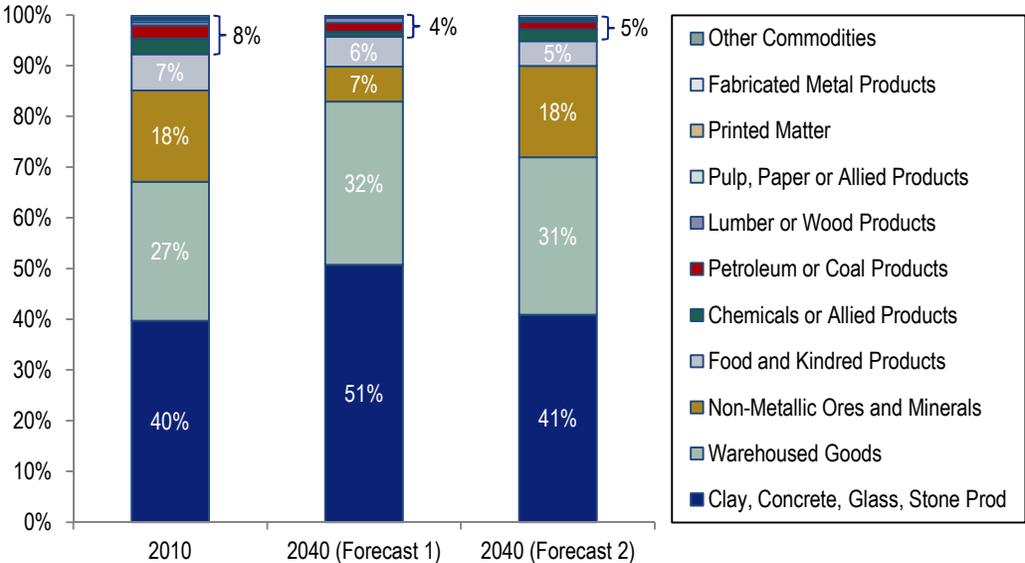
Table 2.18 Top 10 Central Florida/Polk County Commodities by Total Weight 2010-2040, Tons in Thousands

Commodity	STCC2	2010 ^a	2040 (Fcst. 1)	2040 (Fcst. 2)	% Change (2010 to 2040 Fcst 1)	% Change (2010 to 2040 Fcst 2)
Clay, Concrete, Glass, Stone Prod.	32	2,024	4,695	3,157	132%	56%
Warehoused Goods (Consumer Goods)	50	1,401	2,977	2,395	112%	71%
Nonmetallic Ores/Minerals	14	918	638	1,393	-31%	52%
Food and Kindred Products	20	366	547	375	49%	2%
Chemicals or Allied Products	28	158	91	178	-42%	13%
Petroleum or Coal Products	29	129	157	114	21%	-12%
Lumber or Wood Products	24	36	96	26	168%	-26%
Pulp, Paper or Allied Products	26	20	10	17	-52%	-17%
Printed Matter	27	15	6	11	-61%	-24%
Fabricated Metal Products	34	11	8	8	-24%	-23%
Other Commodities		25	29	45	16%	83%
Total		5,102	9,252	7,719	81%	51%

Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

^a The base year for the rail data is 2009.

Figure 2.39 Top 10 Central Florida/Polk County Commodities by Total Weight 2010-2040



Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

3.0 County Freight Movement Profiles

To better understand which portions of the Central Florida study region are impacted by which types of freight movement, county-level freight profiles were developed. This section of the report describes the existing conditions in freight tonnage for each of the seven counties in the study region. Table 3.1 and Figure 3.1 show 2010 and 2040 freight tonnage for inbound, outbound, intracounty, and through movements for each of the seven counties in the study region. Excluding through traffic, Orange County is the jurisdiction with the highest level of freight accounting for 40 percent of the freight tonnage moving into, out of and within the region. Brevard County with Port Canaveral follows, accounting for 20 percent of the freight activity inbound, outbound and intraregionally. Including through traffic, Orange County accounts for 24 percent of the freight tonnage moving in, out of, within, and through the region, and Osceola and Sumter counties follow each accounting for 18 percent of the total freight activity.

Over the next thirty years the counties' freight activity (inbound, outbound, intracounty, and through) is expected to grow on average between 35 percent and 65 percent depending on the low or high forecast scenario. Through flows are expected to experience the highest growth.

The following sections provide summaries for each of the seven counties in the study area. Each summary provides current and future data on freight flows by mode, direction, and commodity type for each county. The summaries also describe the trade flow surplus or deficit within each county⁵ which can help determine whether a county is a net producer (surplus) or consumer (deficit). Trade deficits can affect the net flow of capital to a region that provides the revenue for local governments and businesses to make investments and plan for future growth. The consumption patterns of visitors and tourists to many counties in Central Florida may also contribute to the trade imbalance of many commodities, such as consumer products, which may be mitigated with outside revenue.

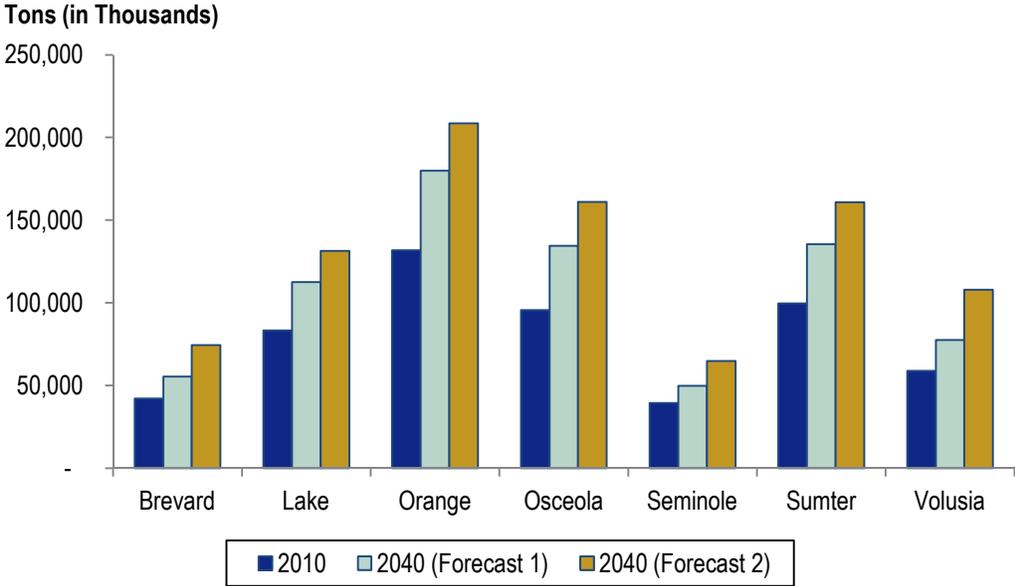
⁵ If a particular county exports more freight tonnage than it imports, the trade flow is termed a surplus (net inflow of capital to the county from outside the county). If a county imports more freight tonnage than it exports, the flow is termed a deficit (net outflow of capital to purchase commodities from outside).

**Table 3.1 Inbound, Outbound, Intracounty, and Through Freight Flows by County
2010-2040, Tons in Thousands**

County	Inbound			Outbound			Intracounty			Through			Total		
	2010	2040 (Fcst. 1)	2040 (Fcst. 2)	2010	2040 (Fcst. 1)	2040 (Fcst. 2)	2010	2040 (Fcst. 1)	2040 (Fcst. 2)	2010	2040 (Fcst. 1)	2040 (Fcst. 2)	2010	2040 (Fcst. 1)	2040 (Fcst. 2)
Brevard	7,292	9,624	8,576	10,422	13,017	16,835	1,388	1,744	1,660	22,984	30,975	47,392	42,085	55,361	74,463
Lake	5,611	6,631	7,759	4,777	4,945	3,588	832	650	504	72,140	100,326	119,484	83,361	112,553	131,336
Orange	23,878	29,589	33,048	12,091	19,626	16,810	2,584	3,842	2,645	93,208	126,834	156,092	131,761	179,891	208,595
Osceola	2,598	2,974	3,670	458	737	468	12	19	12	92,515	130,804	156,872	95,583	134,534	161,022
Seminole	8,474	10,886	12,093	2,074	2,333	3,255	171	198	130	28,829	36,401	49,302	39,549	49,819	64,780
Sumter	1,079	1,016	1,644	5,009	3,576	2,879	3	2	2	93,501	130,857	156,399	99,592	135,451	160,925
Volusia	3,907	5,443	5,463	3,388	5,538	4,468	471	497	352	51,117	66,076	97,586	58,882	77,553	107,869

Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

Figure 3.1 Inbound, Outbound, Intracounty, and Through Freight Tonnage by County 2010-2040



Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

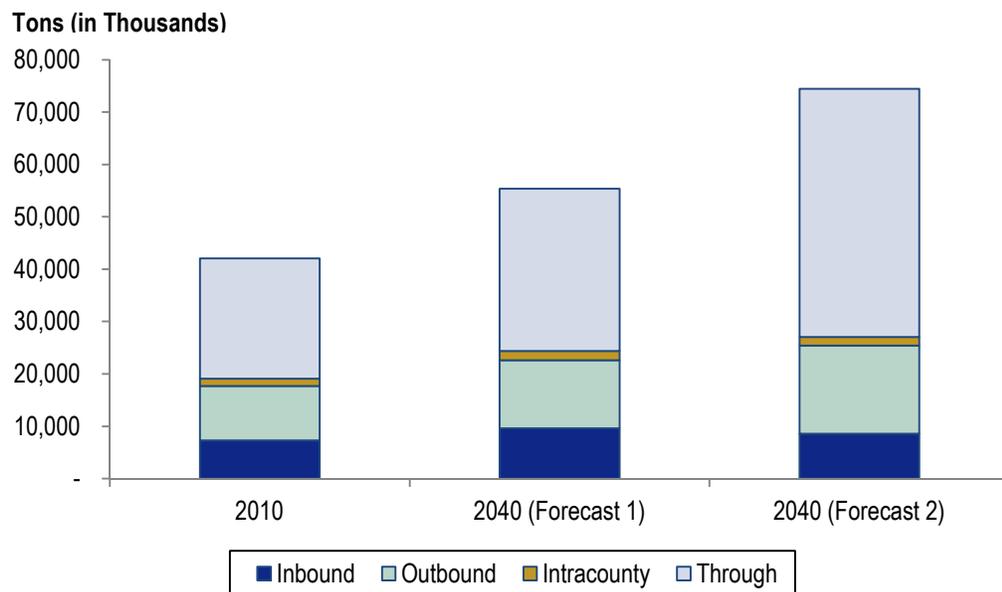
3.1 BREVARD COUNTY

Directional Analysis – Brevard County

In 2010, 42 million tons moved into, out of, within, and through Brevard County. Table 3.2, Figure 3.2 and Figure 3.3 display Brevard’s County current and future freight flows by mode and direction. About 7 million tons traveled inbound (17 percent), 10 million tons traveled outbound (25 percent), 1 million tons traveled within the county (3 percent), and 23 million tons traveled through the county (55 percent). By 2040, total freight moving across the county is expected to grow to 55 million tons, according to the low forecast scenario, and 74 million tons according to the high forecast scenario, a 32 to 77 percent increase respectively (see Figure 3.2).

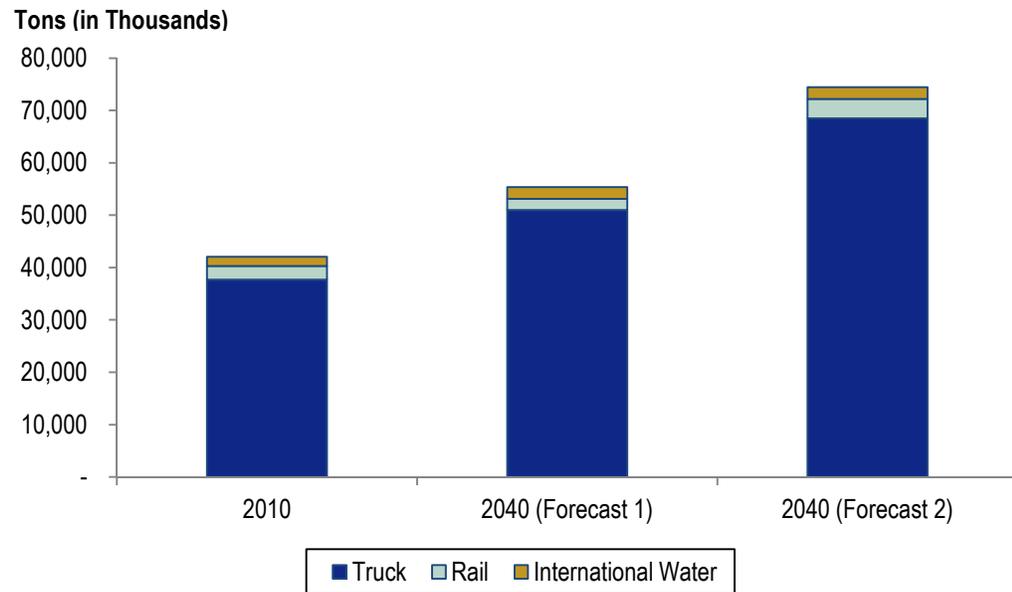
About 38 million tons (90 percent) were transported by truck into, out of, within and through Brevard County in 2010. By 2040 trucks are expected to haul 51 to 68 million tons, a 35 to 82 percent increase depending on the forecast scenario. Rail shipments account for 6 percent of the freight tonnage, and water through Port Canaveral accounts for 4 percent.

Figure 3.2 Growth in Total Weight of Freight Flows by Direction – Brevard County



Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

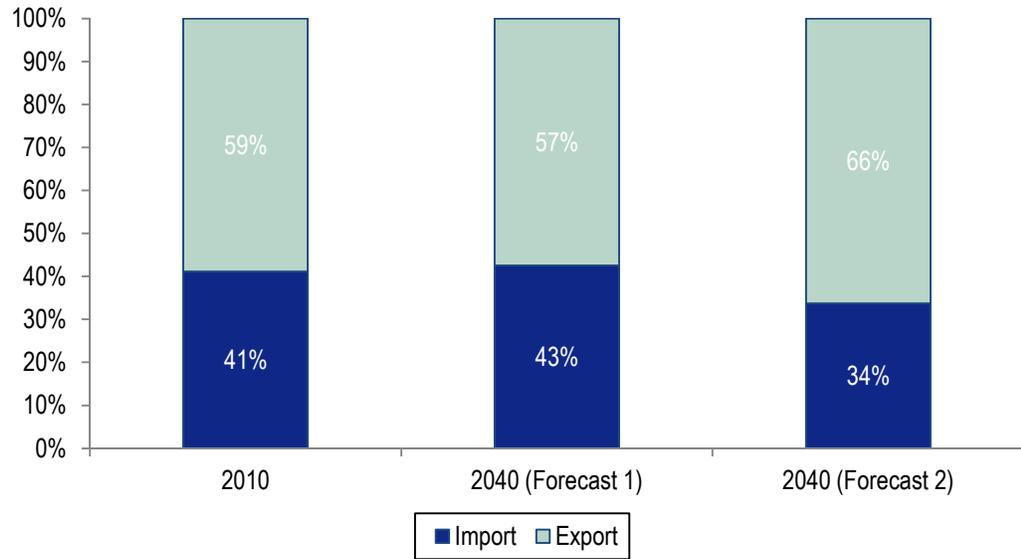
Figure 3.3 Growth in Total Weight of Freight Flows by Mode – Brevard County



Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

The balance of imports (inbound tonnage) to exports (outbound tonnage) is highlighted in Figure 3.4. Brevard County ships more outbound goods than it receives inbound thus translating into a freight surplus of 18 percent. Over the next thirty years Brevard County is expected to continue to ship more goods than receive. Forecast 1 shows a freight surplus of 15 percent due to higher growth of inbound shipments compared to outbound. Conversely, Forecast 2 shows an increase in the freight surplus to 32 percent, due to significantly higher growth of outbound shipments of nonmetallic ores and minerals, and clay, concrete, glass and stone products compared to inbound shipments for these commodities.

**Figure 3.4 Imports/Exports by Weight – Brevard County
2010-2040**



Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

Table 3.2 Summary of Brevard County Freight Flows by Weight
2010-2040, Tons in Thousands

Direction	Truck			Rail			International Water			Total			% Change Total (2010 to 2040 Fcst 1)	% Change Total (2010 to 2040 Fcst 2)
	2010	2040 (Fcst 1)	2040 (Fcst 2)	2009	2040 (Fcst 1)	2040 (Fcst 2)	2010	2040 (Fcst 1)	2040 (Fcst 2)	2010	2040 (Fcst 1)	2040 (Fcst 2)		
Inbound	4,370	7,129	4,500	2,456	1,888	3,469	465	607	607	7,292	9,624	8,576	32%	18%
From Study Region	1,062	1,742	665	0	0	0	0	0	0	1,062	1,742	665	64%	-37%
Outbound	10,254	12,766	16,541	158	226	269	10	25	25	10,422	13,017	16,835	25%	62%
To Study Region	5,041	4,922	8,250	0	0	0	0	0	0	5,041	4,922	8,250	-2%	64%
Intracounty	1,388	1,744	1,660	0	0	0	0	0	0	1,388	1,744	1,660	26%	20%
Through	21,680	29,360	45,777	N/A ^a	N/A ^a	N/A ^a	1,304	1,615	1,615	22,984	30,975	47,392	35%	106%
Total	37,691	50,999	68,478	2,614	2,115	3,738	1,780	2,247	2,247	42,085	55,361	74,463	32%	77%

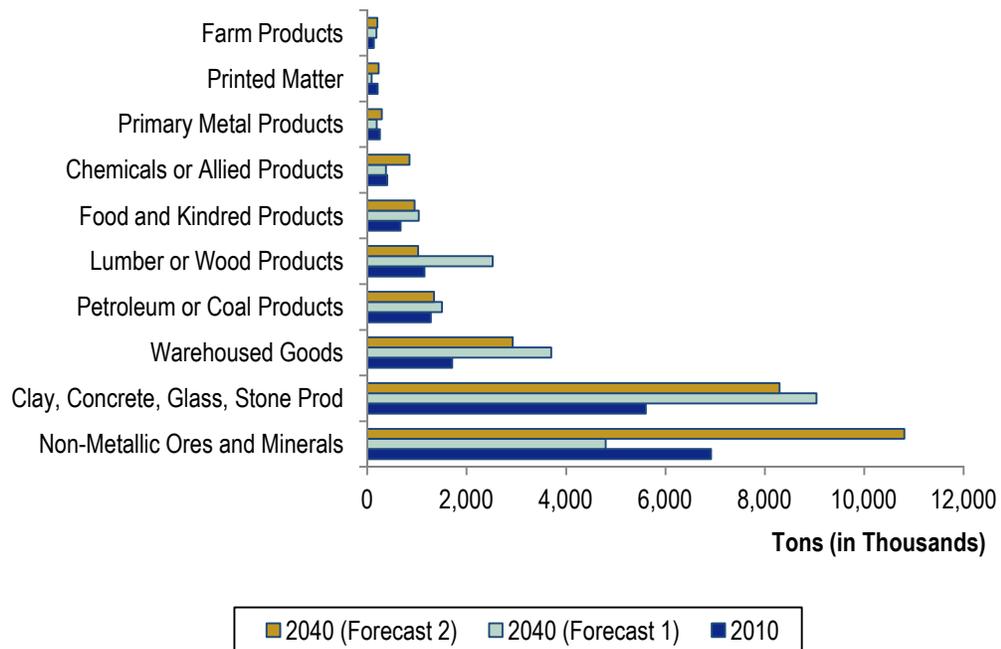
Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

^a Through rail moves were not included due to the inability to estimate it with the full Surface Transportation Board (STB) Waybill dataset. Therefore, the total through tonnage shown here likely underestimates actual through tonnage due to the lack of through rail data.

Commodity Analysis - Brevard County

In 2010, more than 19 million tons of freight moved inbound, outbound, and within Brevard County. By weight, nonmetallic minerals, and clay, concrete, glass, or stone products, are the largest commodity groups moved in the county, accounting for more than 12 million tons or approximately 64 percent of total inbound, outbound and intracounty tonnage (see Figure 3.5). By 2040, these commodity groups are expected to be the largest shipments originating or terminating Brevard County. Depending if the construction industry picks up or the recession deepens, nonmetallic ores and minerals are expected to grow 56 percent or decline 31 percent over the next thirty years.

Figure 3.5 Top 10 Commodities by Weight – Brevard County 2010-2040



Note: Sum of inbound, outbound, and intracounty freight.

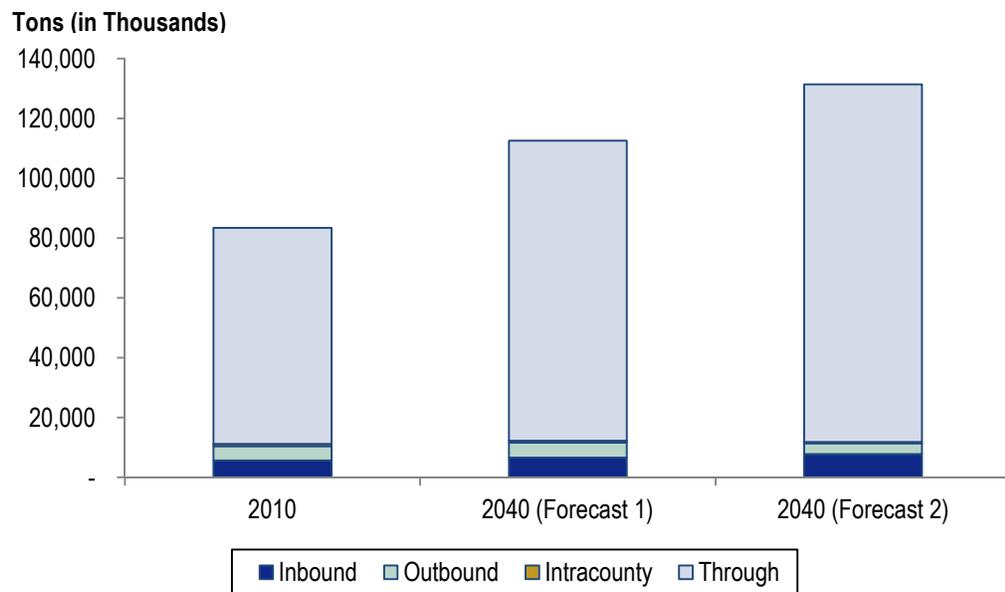
Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

3.2 LAKE COUNTY

Directional Analysis - Lake County

In 2010, 83 million tons of freight moved into, out of, within, and through Lake County. Table 3.3 display Lake County’s freight flows by mode and direction in 2010 and 2040. Figure 3.6 illustrates the directional growth. By 2040, total freight tonnage moving across Lake County is expected to grow to 113 - 131 million tons, a 35 to 58 percent growth depending on the forecast scenario. Approximately 5.6 million tons (7 percent) traveled inbound, 4.8 million tons (6 percent) traveled outbound, and 800,000 tons (1 percent) traveled from one point within the county to another. Through freight accounted for 72 million tons or 87 percent of the total. All freight was transported by truck. By 2040, outbound and intracounty freight tonnage are expected to stay constant or decrease due to anticipated decline in nonmetallic ores and minerals.

Figure 3.6 Growth in Total Weight of Freight Flows by Direction – Lake County
(Exclusive of Rail Tonnage)

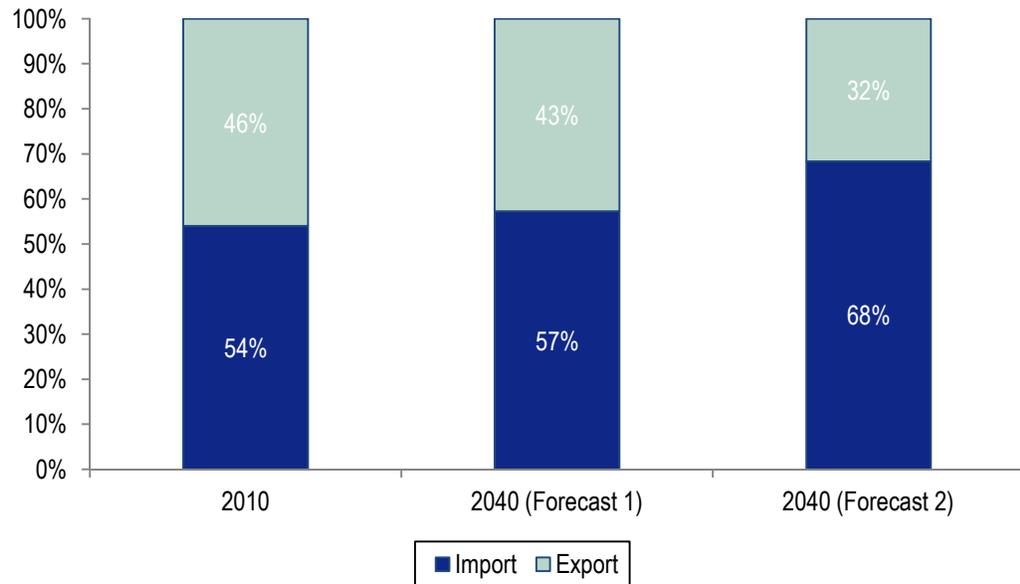


Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

Figure 3.7 highlights the balance of imports (inbound tonnage) to exports (outbound tonnage) and shows that Lake County businesses receive slightly more inbound goods than they ship outbound, thus translating into a freight trade deficit of only 8 percent. This represents a somewhat balanced trade lane which allows for better opportunities for carriers to match inbound and outbound loads, reducing empty hauls and the associated vehicle miles traveled (VMT) by trucks. As a result, regional shippers benefit from more competitive shipping terms and carriers from reduced operational costs, since there is revenue associated with both the inbound and outbound portion of the trip. By 2040, the decline of outbound shipments is expected to tip the balance by reducing the outbound share and increasing the trade deficit.

Although rail tonnage data are not available for Lake County, Florida Central Railroad indicated that 90 percent of its traffic by carload is inbound while only 10 percent is outbound. Thus, while the trucking market may represent currently a relatively balanced market, there is significant imbalance in the rail market in the county.

Figure 3.7 Imports/Exports by Weight – Lake County
 2010-2040 (Exclusive of Rail Tonnage)



Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

Table 3.3 Summary of Lake County Freight Flows by Weight
2010-2040, Tons in Thousands

Direction	Truck			Rail ^a			Total			% Change Total (2010 to 2040 Fcst 1)	% Change Total (2010 to 2040 Fcst 2)
	2010	2040 (Fcst 1)	2040 (Fcst 2)	2009	2040 (Fcst 1)	2040 (Fcst 2)	2010	2040 (Fcst 1)	2040 (Fcst 2)		
Inbound	5,611	6,631	7,759	N/A	N/A	N/A	5,611	6,631	7,759	18%	38%
From Study Region	1,627	1,552	1,196	N/A	N/A	N/A	1,627	1,552	1,196	-5%	-26%
Outbound	4,777	4,945	3,588	N/A	N/A	N/A	4,777	4,945	3,588	4%	-25%
To Study Region	2,908	2,469	1,825	N/A	N/A	N/A	2,908	2,469	1,825	-15%	-37%
Intracounty	832	650	504	N/A	N/A	N/A	832	650	504	-22%	-39%
Through	72,140	100,326	119,484	N/A ^b	N/A ^b	N/A ^b	72,140	100,326	119,484	39%	66%
Total	83,361	112,553	131,336	N/A	N/A	N/A	83,361	112,553	131,336	35%	58%

Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

^a Rail data by tonnage for Lake County is not reported in the STB Waybill database due to reporting requirements. In interviews, Florida Central Railroad reported approximately 5,000 carloads of traffic on its lines in Lake County, 90 percent of which was inbound and 10 percent outbound. All of their traffic is interchanged at the Taft Yard.

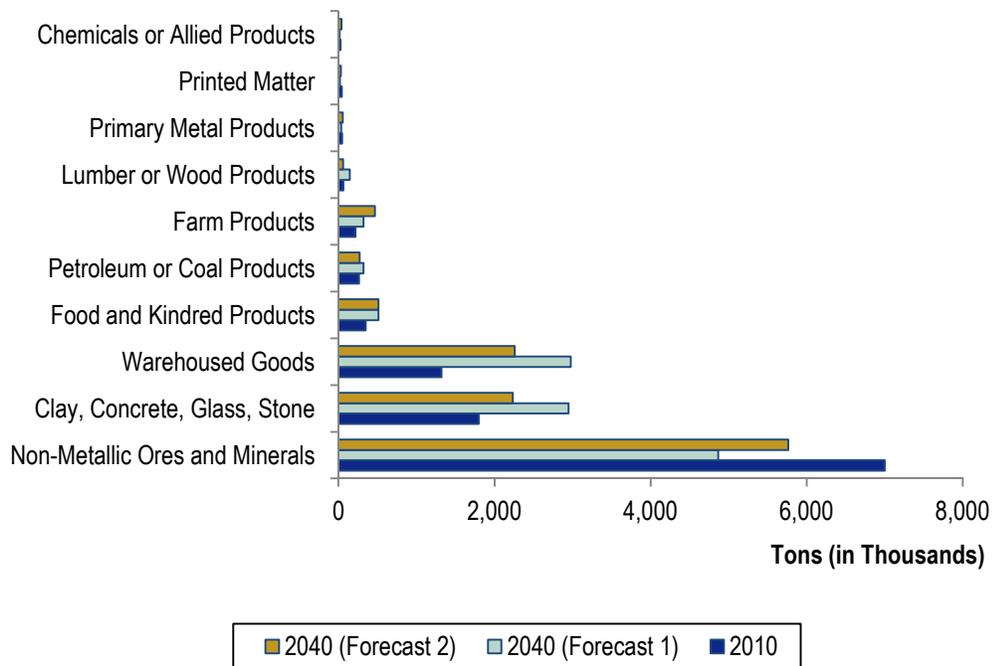
^b Through rail moves were not included due to the inability to estimate it with the full Surface Transportation Board (STB) Waybill dataset. Therefore, the total through tonnage shown here likely underestimates actual through tonnage due to the lack of through rail data.

Commodity Analysis - Lake County

In 2010, about 11.2 million tons of freight moved inbound, outbound, and within Lake County. By 2040, these shipments are expected to increase slightly to 11.9 to 12.2 million tons, a 6 - 9 percent growth. Nonmetallic minerals; clay, concrete, glass, and stone products; and warehouse and distribution goods combined account for 10 million tons or 90 percent of total inbound, outbound and intracounty tonnage (see Figure 3.8). By 2040, nonmetallic ores and minerals shipments are expected to decrease up to 30 percent (Forecast 1).

This data are exclusive of rail tonnage. Based on interviews with the Florida Central Railroad, the approximately 5,000 carload of rail freight moving into and out of Lake County are comprised of about 20 percent food product, 20 percent scrap metal, 20 percent chemicals and 20 percent fertilizer and lumber.

Figure 3.8 Top 10 Commodities by Weight – Lake County 2010-2040



Note: Sum of inbound, outbound, and intracounty freight.

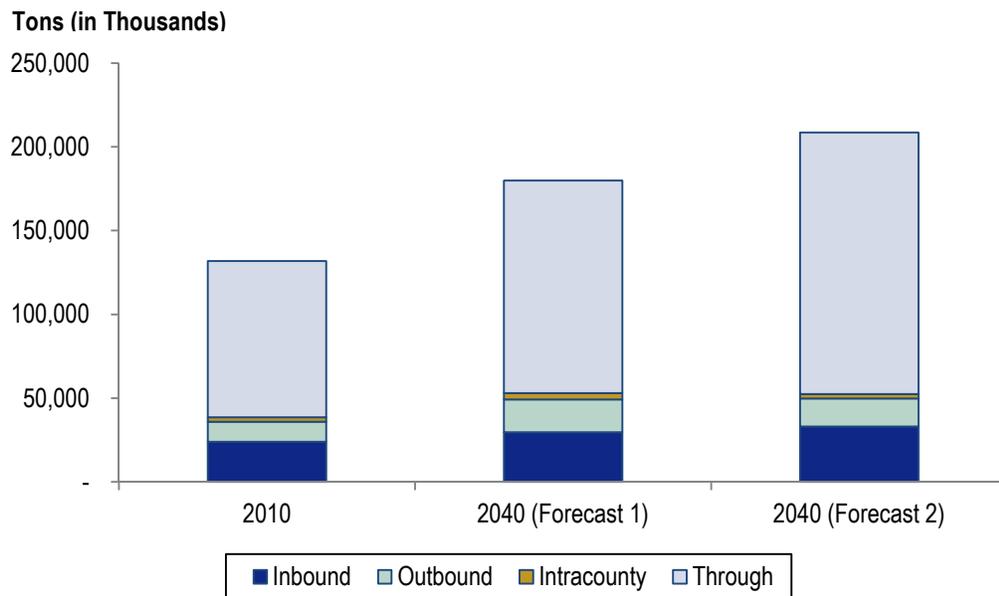
Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

3.3 ORANGE COUNTY

Directional Analysis - Orange County

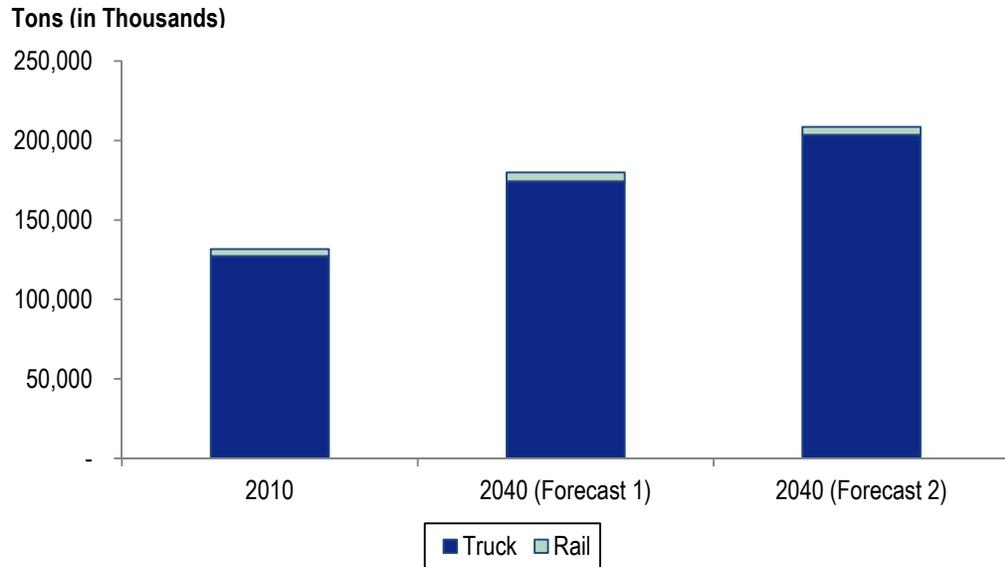
In 2010, 132 million tons of freight moved into, out of, within, and through Orange County. Table 3.4 details the freight tonnage by direction and mode. Figures 3.9 and 3.10 present the same information graphically. Approximately 24 million tons (18 percent) traveled inbound, 12 million tons (9 percent) traveled outbound, and 2.6 million tons (2 percent) traveled from one point within the county to another. Through freight accounted for 93 million tons or 71 percent of the total. The modal breakdown of the tonnage associated with Orange County in 2010 was 97 percent by truck, and 3 percent by rail. By 2040, total freight moving across the county is expected to grow to 178 - 209 million tons, an increase of 37 - 58 percent depending on the forecast conservative or optimistic scenario.

Figure 3.9 Growth in Total Weight of Freight Flows by Direction – Orange County



Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

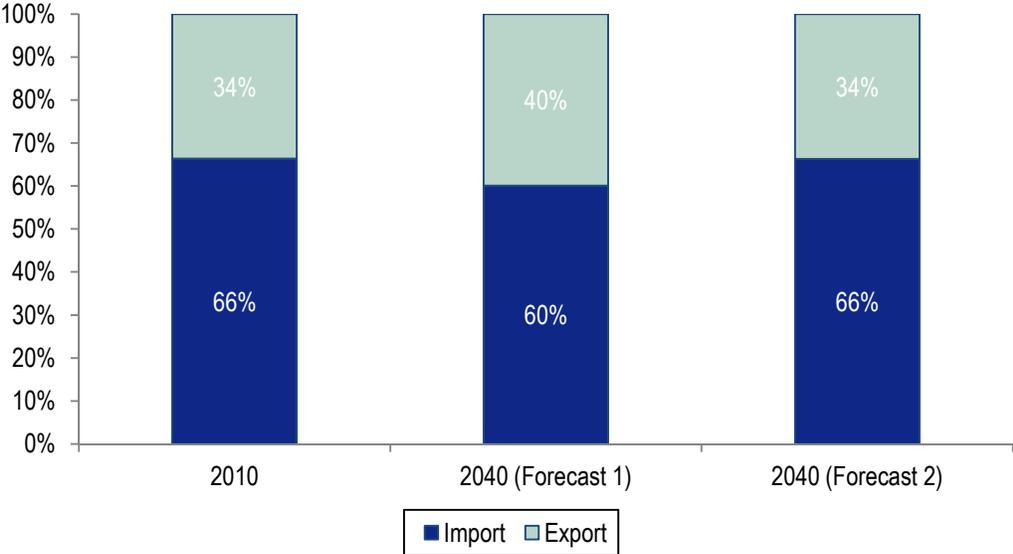
Figure 3.10 Growth in Total Weight of Freight Flows by Mode – Orange County



Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

Figure 3.11 highlights the current and future balance of imports (inbound tonnage) to exports (outbound tonnage) and shows that Orange County businesses receive more inbound goods than they ship outbound thus translating into a freight trade deficit of 32 percent. By 2040, the trade deficit is expected to remain constant or decrease slightly to 20 percent. Although this is a relatively low deficit compared to many other counties in the study area (e.g. 70 percent for Osceola and 60 percent for Seminole counties) it reflects a strong imbalance toward consumption over production in the county and could over time lead to outflows of capital from the area. However, the strong role of the tourism industry in Orange County likely mitigates much of this imbalance with many commodities consumed by visitors to Orange County (with capital from outside the region). Increasing production of commodities such as manufactured products and other goods for export in Orange County could reduce the trade deficit and/or lead to more locally produced goods being consumed in county, potentially reducing overall VMT associated with trucks.

Figure 3.11 Imports/Exports by Weight – Orange County
2010-2040



Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

**Table 3.4 Summary of Orange County Freight Flows by Weight
2010-2040, Tons in Thousands**

Direction	Truck			Rail			Total			% Change Total (2010 to 2040 Fcst 1)	% Change Total (2010 to 2040 Fcst 2)
	2010	2040 (Fcst 1)	2040 (Fcst 2)	2009	2040 (Fcst 1)	2040 (Fcst 2)	2010	2040 (Fcst 1)	2040 (Fcst 2)		
Inbound	19,609	24,427	28,570	4,269	5,162	4,478	23,878	29,589	33,048	24%	38%
From Study Region	7,088	6,542	8,221	0	0	0	7,088	6,542	8,221	-8%	16%
Outbound	11,820	19,189	16,308	271	437	502	12,091	19,626	16,810	62%	39%
To Study Region	2,802	4,261	2,457	0	0	0	2,802	4,261	2,457	52%	-12%
Intracounty	2,584	3,842	2,645	0	0	0	2,584	3,842	2,645	49%	2%
Through	93,208	126,834	156,092	N/A ^a	N/A ^a	N/A ^a	93,208	126,834	156,092	36%	67%
Total	127,222	174,292	203,616	4,540	5,599	4,980	131,761	179,891	208,595	37%	58%

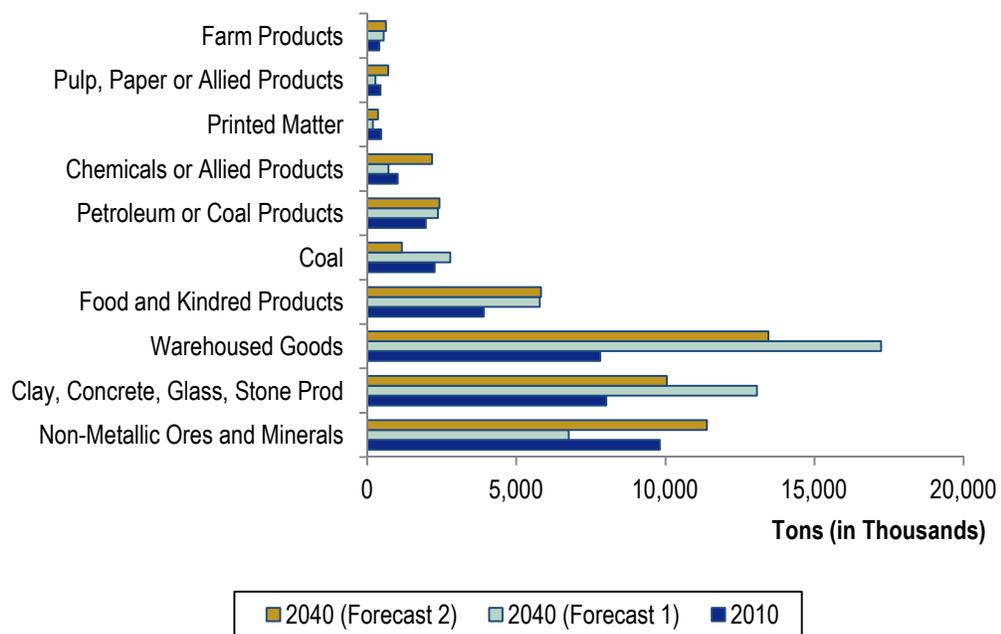
Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

^a Through rail moves were not included due to the inability to estimate it with the full Surface Transportation Board (STB) Waybill dataset. Therefore, the total through tonnage shown here likely underestimates actual through tonnage due to the lack of through rail data.

Commodity Analysis - Orange County

In 2010, about 38.5 million tons of freight moved inbound, outbound, and within Orange County. By weight, nonmetallic minerals, and clay, concrete, glass or stone products are the top commodity groups, accounting for 17.8 million tons or 46 percent of the total tonnage. Warehouse and distribution goods, and food and kindred products are also top commodity groups, accounting for 11.7 million tons or 30 percent of the total tonnage. By 2040, with the exception of nonmetallic ores and minerals these commodity groups are expected to have significant growth. Even with the decline or modest growth of nonmetallic ores and minerals, these top four commodity groups are expected to account for 78 to 80 percent of the shipments (see Figure 3.13).

Figure 3.12 Top 10 Commodities by Weight – Orange County
2010-2040



Note: Sum of inbound, outbound, and intracounty freight

Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

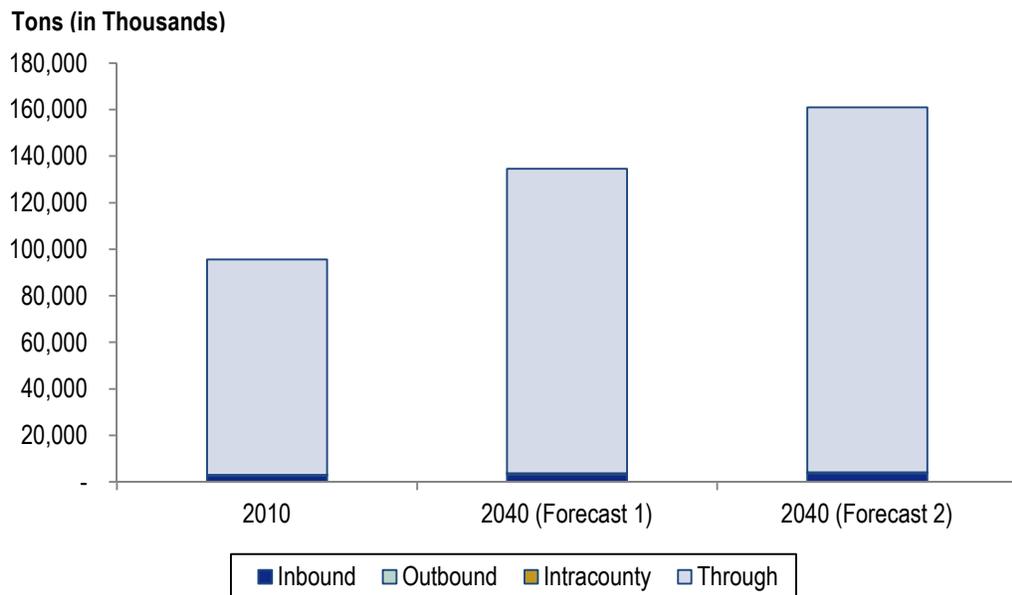
3.4 OSCEOLA COUNTY

Directional Analysis - Osceola County

In 2010, 95.6 million tons of freight moved into, out of, within, and through Osceola County. Table 3.5 displays the 2010 and 2040 freight tonnage by direction and modes. Figures 3.13 and 3.14 illustrate the growth by direction and mode respectively. Approximately 2.6 million tons (3 percent) traveled inbound, 458 thousand tons (less than one percent) traveled outbound, and 12,000 tons (less than 1 percent) traveled from one point within the county to another. Nearly all freight associated with Osceola County is transported by truck. By 2040, the directional and modal shares are not expected to change significantly and through traffic is expected to account for 97 percent of all freight associated with Osceola County (93 million tons in 2010 and 131-157 million tons in 2040).

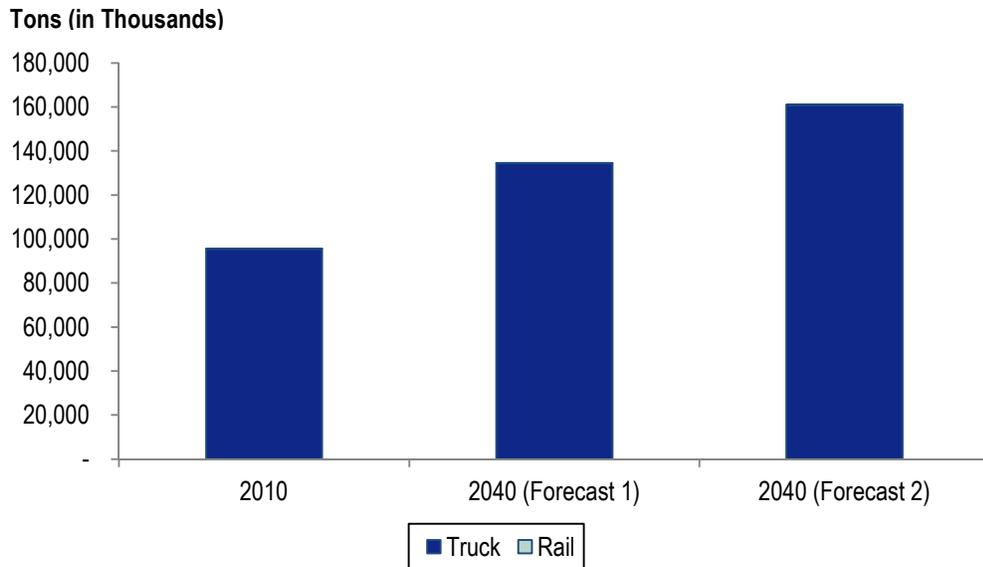
Figure 3.15 highlights the balance of imports (inbound tonnage) to exports (outbound tonnage) and shows that Osceola County businesses receive more inbound goods than they ship outbound, thus translating into a freight trade deficit of 70 percent. By 2040, Osceola’s trade deficit is expected to range between 60 - 77 percent.

Figure 3.13 Growth in Total Weight of Freight Flows by Direction – Osceola County



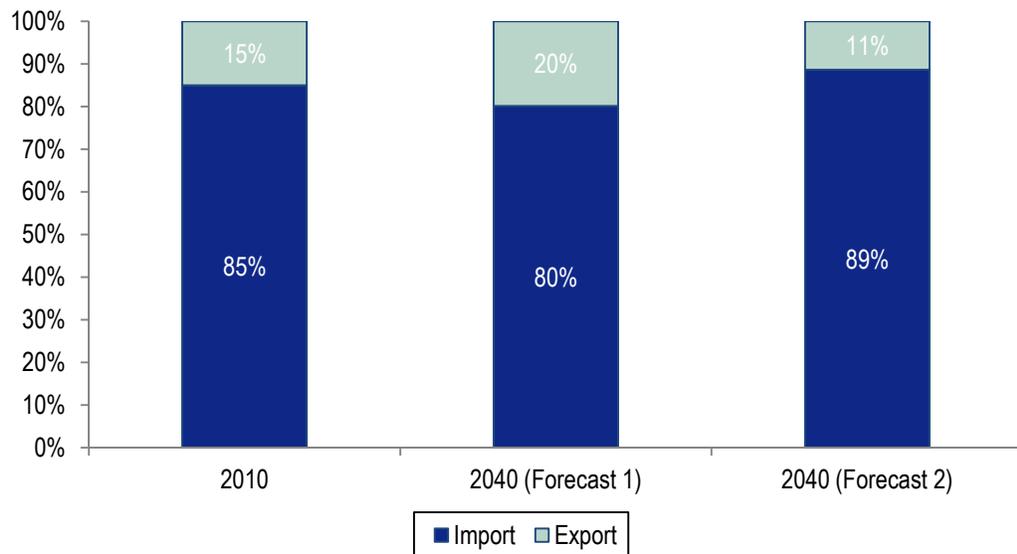
Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

Figure 3.14 Growth in Total Weight of Freight Flows by Mode – Osceola County



Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

Figure 3.15 Imports/Exports by Weight – Osceola County 2010-2040



Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

**Table 3.5 Summary of Osceola County Freight Flows by Weight
2010-2040, Tons in Thousands**

Direction	Truck			Rail			Total			% Change Total (2010 to 2040 Fcst 1)	% Change Total (2010 to 2040 Fcst 2)
	2010	2040 (Fcst 1)	2040 (Fcst 2)	2009	2040 (Fcst 1)	2040 (Fcst 2)	2010	2040 (Fcst 1)	2040 (Fcst 2)		
Inbound	2,535	2,917	3,521	62	57	149	2,598	2,974	3,670	14%	41%
From Study Region	818	866	863	0	0	0	818	866	863	6%	5%
Outbound	458	737	468	0	0	0	458	737	468	61%	2%
To Study Region	220	363	201	0	0	0	220	363	201	65%	-9%
Intracounty	12	19	12	0	0	0	12	19	12	62%	6%
Through	92,515	130,804	156,872	N/A ^a	N/A ^a	N/A ^a	92,515	130,804	156,872	41%	70%
Total	95,521	134,477	160,873	62	57	149	95,583	134,534	161,022	41%	68%

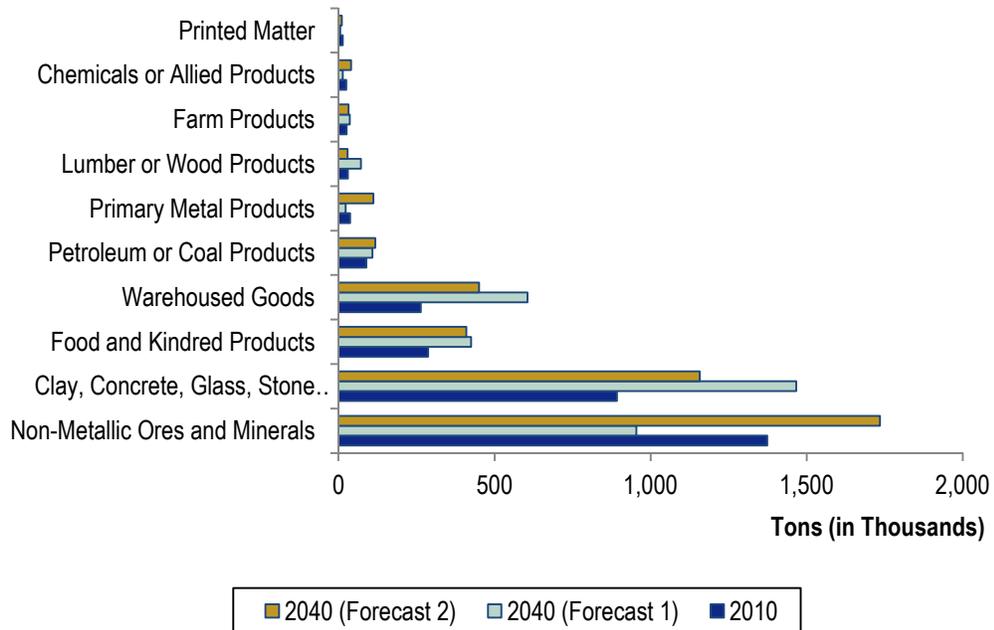
Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

^a Through rail moves were not included due to the inability to estimate it with the full Surface Transportation Board (STB) Waybill dataset. Therefore, the total through tonnage shown here likely underestimates actual through tonnage due to the lack of through rail data.

Commodity Analysis -Osceola County

In 2010, about 3 million tons of freight moved inbound, outbound, and within Osceola County. By 2040, these shipments are expected to grow to about 4 million tons. Nonmetallic minerals, and clay, concrete, glass, and stone products combined account for 2.3 million tons or 74 percent of total tonnage reflecting the relative strength of the construction industry in the county. By 2040, this share is expected to decrease to 65 to 70 percent depending on how fast the construction industry picks up over the next thirty years (see Figure 3.16).

Figure 3.16 Top 10 Commodities by Weight – Osceola County
2010-2040



Note: Sum of inbound, outbound, and intracounty freight

Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

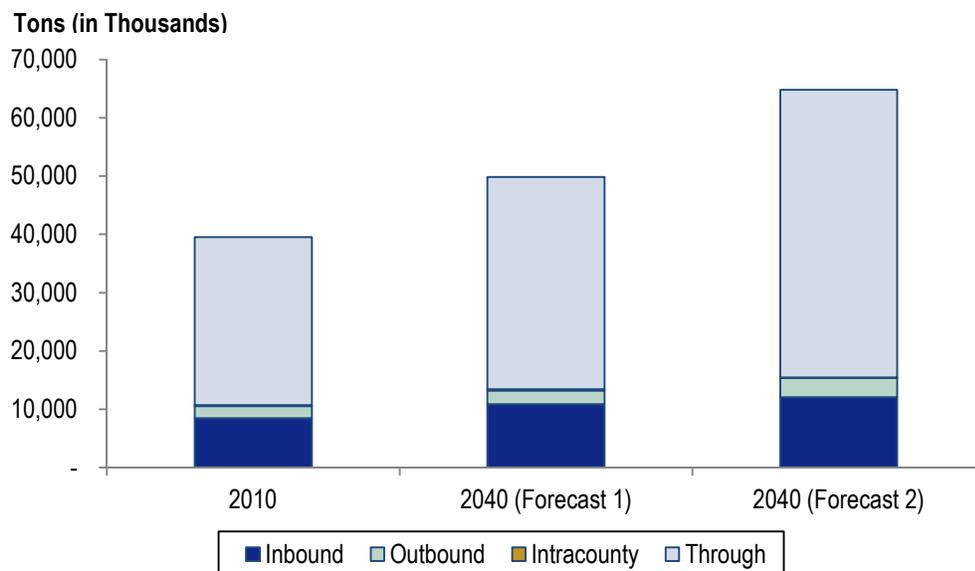
3.5 SEMINOLE COUNTY

Directional Analysis - Seminole County

In 2010, 39.5 million tons of freight moved into, out of, within, and through Seminole County. By 2040 these shipments are expected to grow between 26 - 64 percent to 50 - 65 million tons depending on the conservative or optimistic forecast scenario. Table 3.6 details the county’s freight moves in 2010 and 2040 by direction and mode. Figures 3.17 and 3.18 display the information graphically. Approximately 8 million tons (21 percent) traveled inbound, 2 million tons (5 percent) traveled outbound, and 171,000 tons (less than 1 percent) traveled from one point within the county to another. Through freight accounted for 29 million tons or 73 percent of the total. About 99 percent of the freight associated with Seminole County was transported by truck and approximately 1 percent by rail. By 2040, this mode share is expected to remain constant.

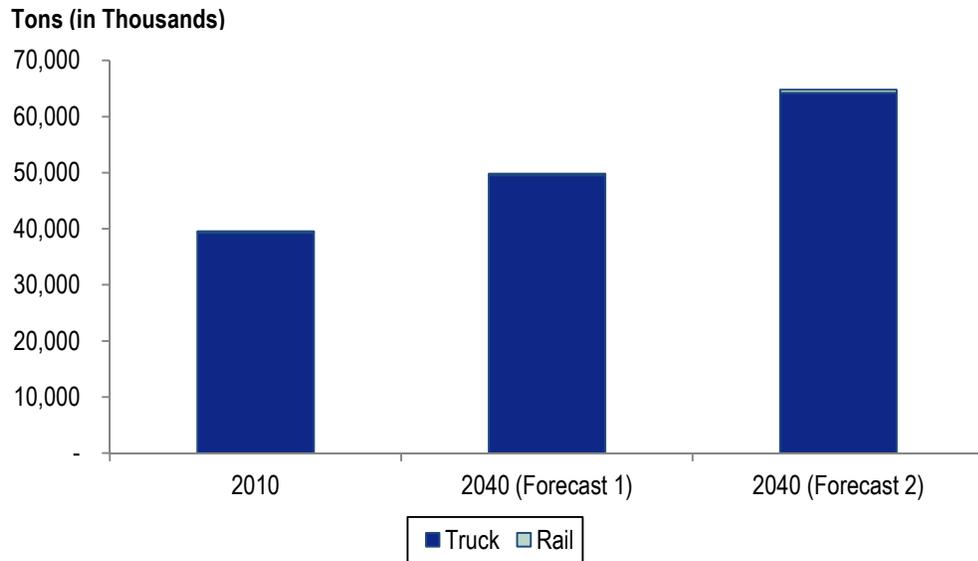
Figure 3.19 highlights the balance of imports (inbound tonnage) to exports (outbound tonnage) and shows that Seminole County businesses receive more inbound goods than they ship outbound, thus translating into a freight trade deficit of 60 percent. Over the next thirty years the imports/exports balance is expected to remain constant.

Figure 3.17 Growth in Total Weight of Freight Flows by Direction – Seminole County



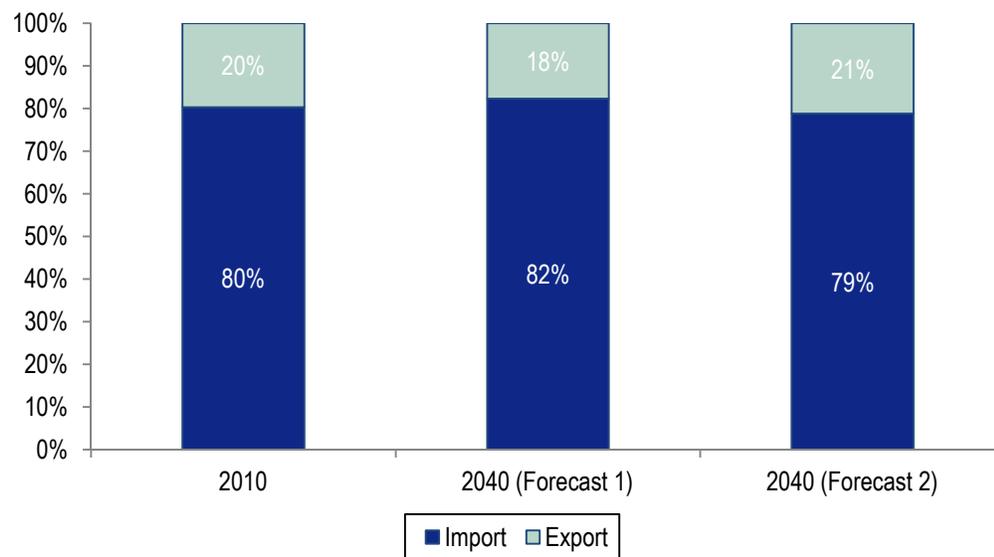
Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

Figure 3.18 Growth in Total Weight of Freight Flows by Mode – Seminole County



Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

Figure 3.19 Imports/Exports by Weight – Seminole County 2010-2040



Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

Table 3.6 Summary of Seminole County Freight Flows by Weight
2010-2040, Tons in Thousands

Direction	Truck			Rail			Total			% Change Total (2010 to 2040 Fcst 1)	% Change Total (2010 to 2040 Fcst 2)
	2010	2040 (Fcst 1)	2040 (Fcst 2)	2009	2040 (Fcst 1)	2040 (Fcst 2)	2010	2040 (Fcst 1)	2040 (Fcst 2)		
Inbound	8,191	10,650	11,580	283	237	513	8,474	10,886	12,093	28%	43%
From Study Region	3,096	3,550	3,147	0	0	0	3,096	3,550	3,147	15%	2%
Outbound	2,063	2,318	3,243	11	15	13	2,074	2,333	3,255	12%	57%
To Study Region	530	721	416	0	0	0	530	721	416	36%	-21%
Intracounty	171	198	130	0	0	0	171	198	130	16%	-24%
Through	28,829	36,401	49,302	N/A ^a	N/A ^a	N/A ^a	28,829	36,401	49,302	26%	71%
Total	39,255	49,567	64,255	294	252	526	39,549	49,819	64,780	26%	64%

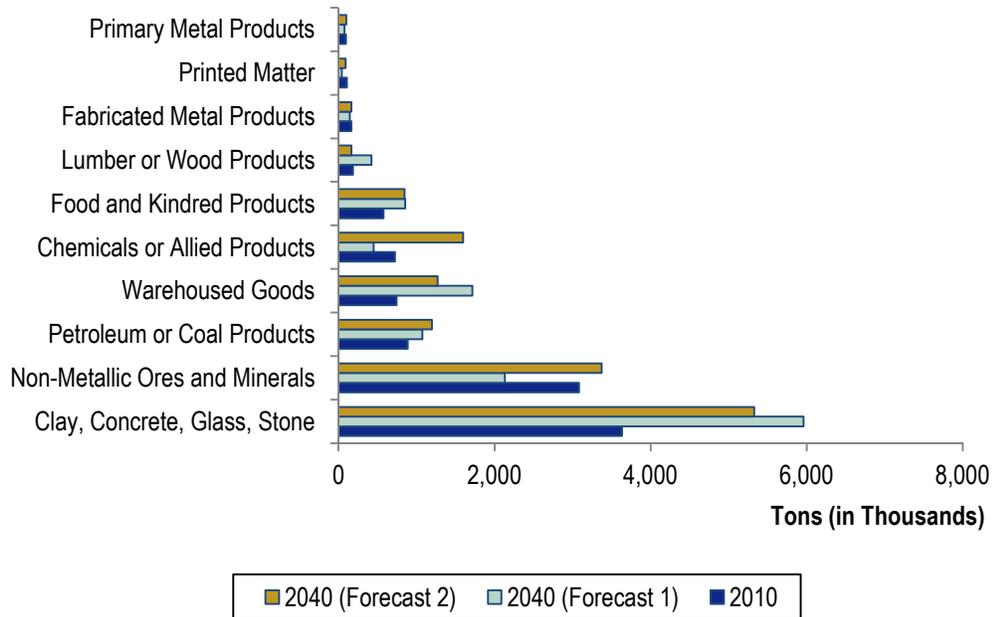
Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

^a Through rail moves were not included due to the inability to estimate it with the full Surface Transportation Board (STB) Waybill dataset. Therefore, the total through tonnage shown here likely underestimates actual through tonnage due to the lack of through rail data.

Commodity Analysis -Seminole County

In 2010, about 10.7 million tons of freight moved inbound, outbound, and within Seminole County. In 2040 these shipments are expected to grow 25 - 44 percent accounting for 13.4 - 15.5 million tons. Clay, concrete, glass, and stone products, and nonmetallic minerals combined account for 6.7 million tons or 63 percent of total tonnage reflecting the strength of the construction industry in the county. By 2040, this share is expected to decrease to 56 - 60 percent accounting for 8 - 9 million tons (see Figure 3.20).

Figure 3.20 Top 10 Commodities by Weight – Seminole County
2010-2040



Note: Sum of inbound, outbound, and intracounty freight

Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

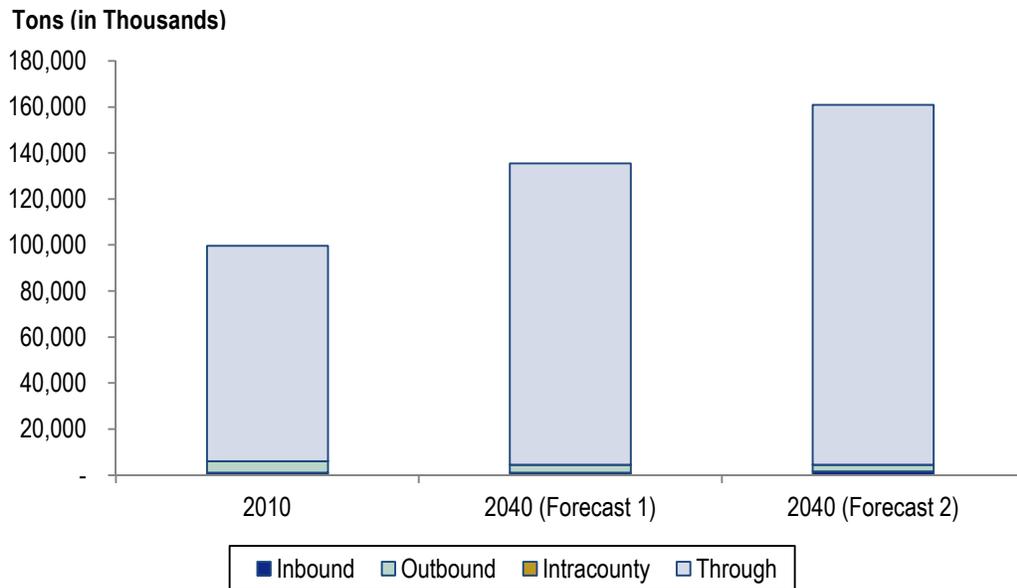
3.6 SUMTER COUNTY

Directional Analysis – Sumter County

In 2010, 100 million tons of freight moved into, out of, within, and through Sumter County. In 2040 this tonnage is expected to increase to 135 - 161 million tons depending on the low or high forecast scenario, a 36 - 62 percent growth respectively. Table 3.7 details the county’s freight moves in 2010 and 2040 by direction and mode. Figures 3.21 and 3.22 display the information graphically.

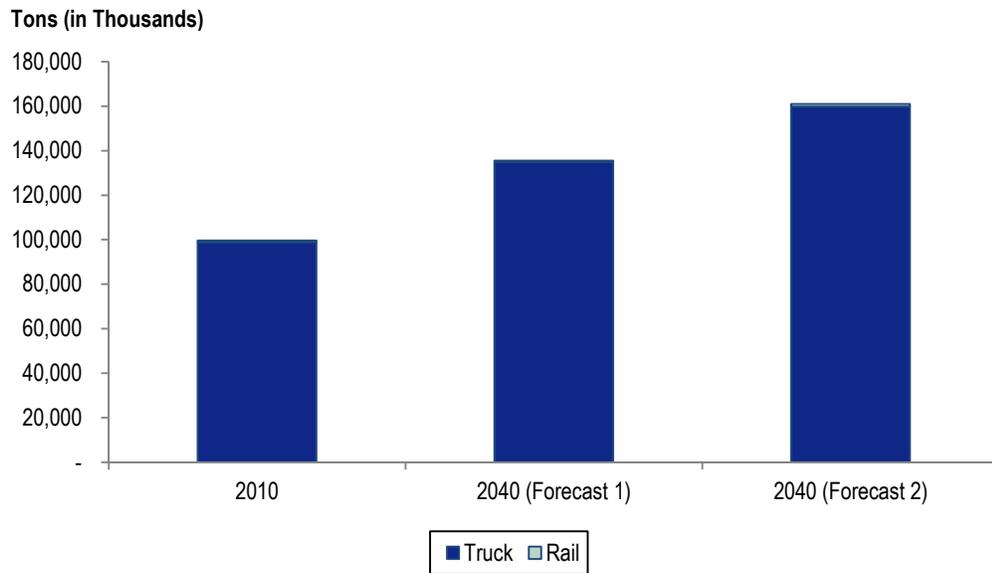
Approximately 1.1 million tons (1 percent) traveled inbound, 5 million tons (5 percent) traveled outbound, and 3,000 tons (less than 1 percent) traveled from one point within the county to another. Outbound and intracounty shipments are expected to decrease due to the decline of nonmetallic ores and minerals associated with the construction industry recession. Through freight accounted for 94 million tons in 2010 (94 percent of the total) and by 2040 through freight is expected to grow 40 to 60 percent to 131 - 156 million tons. About 99 percent of the total freight tonnage was transported by truck and 1 percent by rail.

Figure 3.21 Growth in Total Weight of Freight Flows by Direction – Sumter County



Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

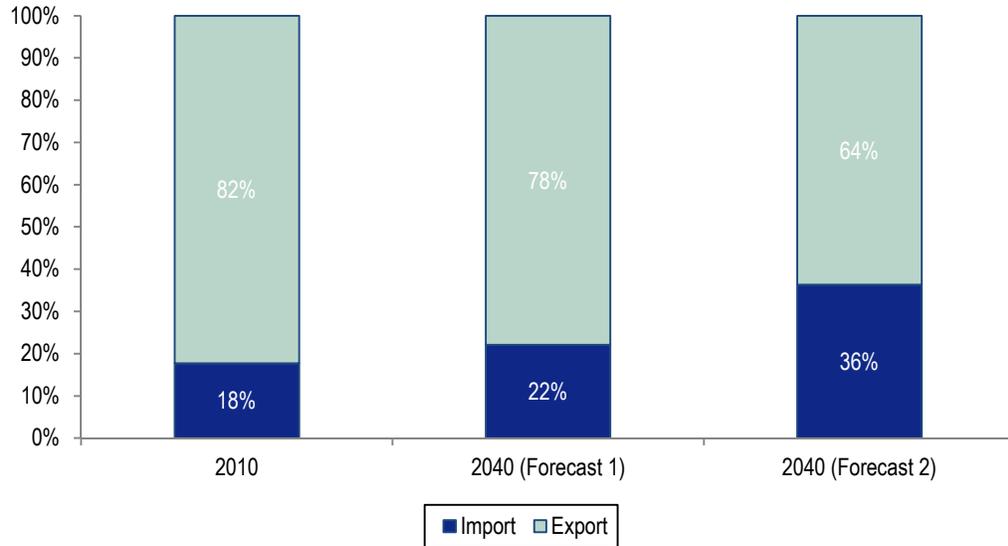
Figure 3.22 Growth in Total Weight of Freight Flows by Mode – Sumter County



Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

Figure 3.23 highlights the balance of imports (inbound tonnage) to exports (outbound tonnage) and shows that Sumter County businesses ship more outbound goods than they receive inbound thus translating into a freight trade surplus of 64 percent. Over the next thirty years the decline in outbound freight and growth of inbound freight will result in a decrease of the freight trade surplus to 56 percent, as projected by forecast 1, or a more aggressive decline to 28 percent as projected by forecast 2.

Figure 3.23 Imports/Exports by Weight – Sumter County
2010-2040



Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

Table 3.7 Summary of Sumter County Freight Flows by Weight
2010-2040, Tons in Thousands

Direction	Truck			Rail			Total			% Change Total (2010 to 2040 Fcst 1)	% Change Total (2010 to 2040 Fcst 2)
	2010	2040 (Fcst 1)	2040 (Fcst 2)	2009	2040 (Fcst 1)	2040 (Fcst 2)	2010	2040 (Fcst 1)	2040 (Fcst 2)		
Inbound	394	568	560	685	448	1,084	1,079	1,016	1,644	-6%	52%
From Study Region	119	135	99	0	0	0	119	135	99	14%	-17%
Outbound	4,982	3,546	2,851	28	30	29	5,009	3,576	2,879	-29%	-43%
To Study Region	2,464	1,721	1,401	0	0	0	2,464	1,721	1,401	-30%	-43%
Intracounty	3	2	2	0	0	0	3	2	2	-25%	-41%
Through	93,501	130,857	156,399	N/A ^a	N/A ^a	N/A ^a	93,501	130,857	156,399	40%	67%
Total	98,879	134,974	159,812	713	477	1,112	99,592	135,451	160,925	36%	62%

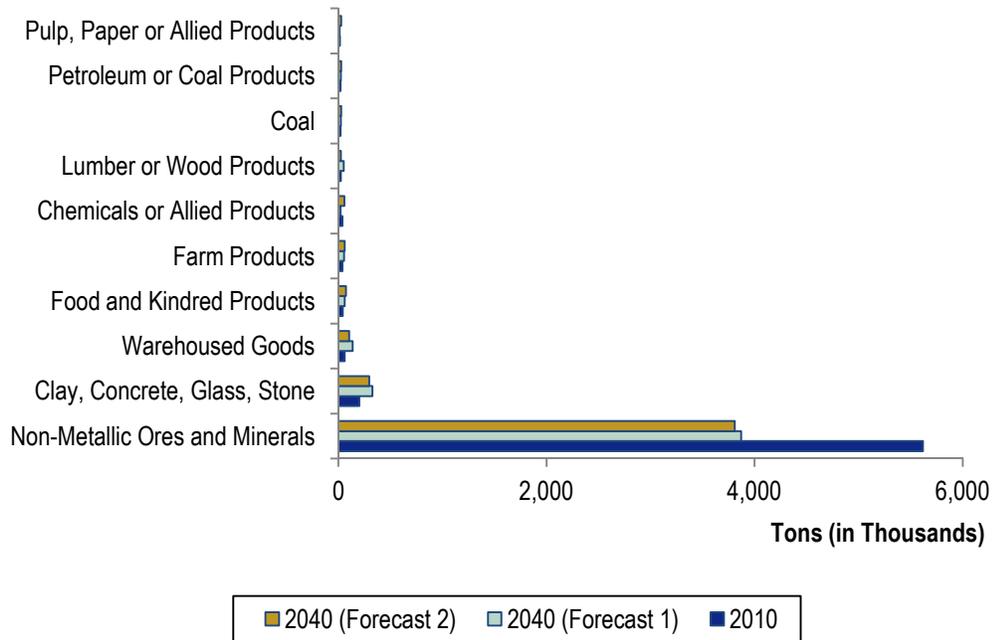
Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

^a Through rail moves were not included due to the inability to estimate it with the full Surface Transportation Board (STB) Waybill dataset. Therefore, the total through tonnage shown here likely underestimates actual through tonnage due to the lack of through rail data.

Commodity Analysis -Sumter County

In 2010, about 6.1 million tons of freight moved inbound, outbound, and within Sumter County. By weight, the construction industry is the single largest freight generator in the county as evidenced by the fact that nonmetallic minerals account for 5.6 million tons or approximately 92 percent of the inbound, outbound and intracounty tonnage. By 2040, this share is expected to decrease to 84 percent of the 2040 tonnage due to a 30 percent decline in shipments of nonmetallic minerals (see Figure 3.24).

Figure 3.24 Top 10 Commodities by Weight – Sumter County
2010-2040



Note: Sum of inbound, outbound, and intracounty freight

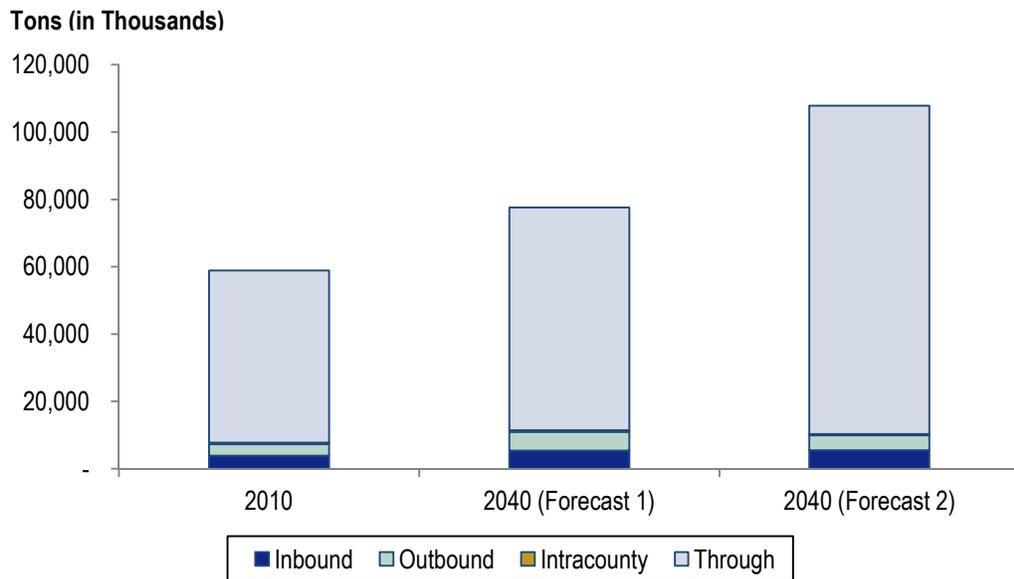
Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

3.7 VOLUSIA COUNTY

Directional Analysis – Volusia County

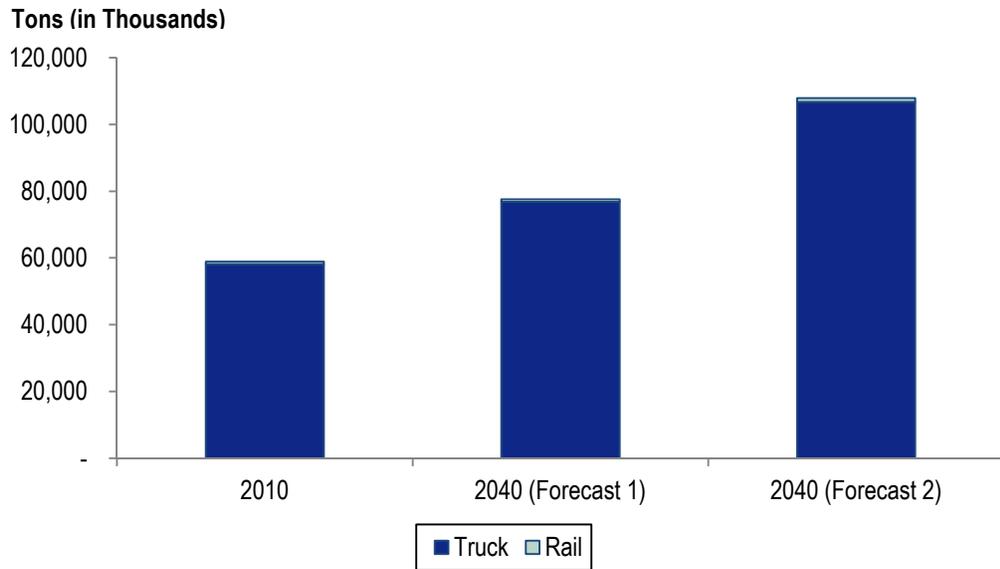
In 2010, 59 million tons of freight moved into, out of, within, and through Volusia County. By 2040 these shipments are expected to grow between 32 - 84 percent to 77 - 108 million tons depending on the conservative or optimistic forecast scenario. Table 3.8 details the county’s 2010 and expected 2040 freight moves by direction and mode. Figures 3.25 and 3.26 display the information graphically. Approximately 3.9 million tons (6 percent) traveled inbound, 3.4 million tons (6 percent) traveled outbound, and 471,000 tons (less than 1 percent) traveled from one point within the county to another. Through freight accounted for 51 million tons or 87 percent of the total. About 99 percent of the total freight tonnage was transported by truck and 1 percent by rail.

Figure 3.25 Growth in Total Weight of Freight Flows by Direction – Volusia County



Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

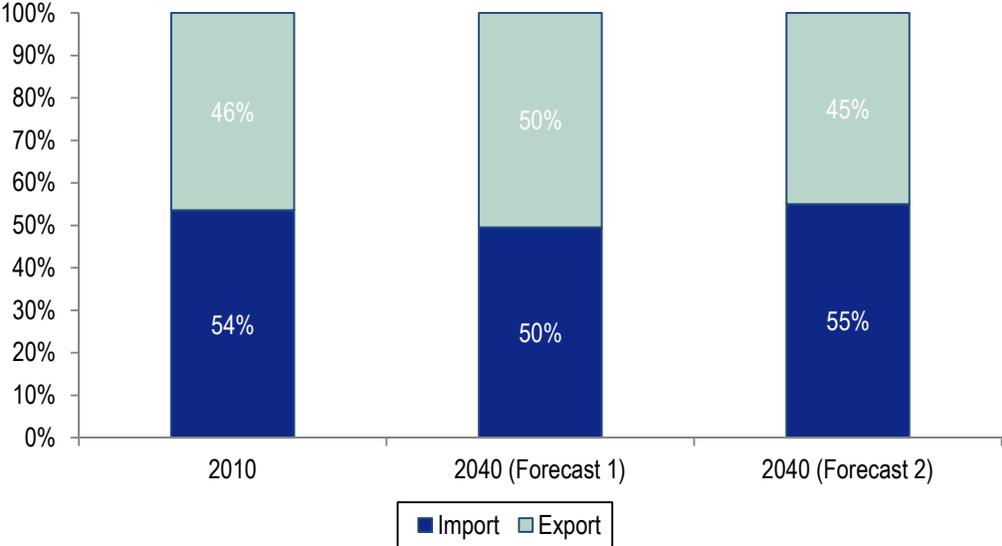
Figure 3.26 Growth in Total Weight of Freight Flows by Mode – Volusia County



Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

Figure 3.27 highlights the balance of imports (inbound tonnage) to exports (outbound tonnage) and shows that Volusia County businesses receive more inbound goods than they ship outbound, thus translating into a freight trade deficit of only 8 percent. This represents a fairly balanced trade lane which allows for better opportunities for carriers to match inbound and outbound loads, reducing empty hauls. As a result, regional shippers benefit from more competitive shipping terms. Over the next thirty years Volusia County is expected to continue to be a fairly balanced market.

Figure 3.27 Imports/Exports by Weight – Volusia County
2010-2040



Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

**Table 3.8 Summary of Volusia County Freight Flows by Weight
2010-2040, Tons in Thousands**

Direction	Truck			Rail			Total			% Change Total (2010 to 2040 Fcst 1)	% Change Total (2010 to 2040 Fcst 2)
	2010	2040 (Fcst 1)	2040 (Fcst 2)	2009	2040 (Fcst 1)	2040 (Fcst 2)	2010	2040 (Fcst 1)	2040 (Fcst 2)		
Inbound	3,131	4,737	4,305	775	705	1,157	3,907	5,443	5,463	39%	40%
From Study Region	1,288	1,693	1,336	0	0	0	1,288	1,693	1,336	31%	4%
Outbound	3,376	5,519	4,453	12	18	15	3,388	5,538	4,468	63%	32%
To Study Region	1,133	1,623	976	0	0	0	1,133	1,623	976	43%	-14%
Intracounty	471	497	352	0	0	0	471	497	352	6%	-25%
Through	51,117	66,076	97,586	N/A ^a	N/A ^a	N/A ^a	51,117	66,076	97,586	29%	91%
Total	58,095	76,830	106,696	787	724	1,173	58,882	77,553	107,869	32%	83%

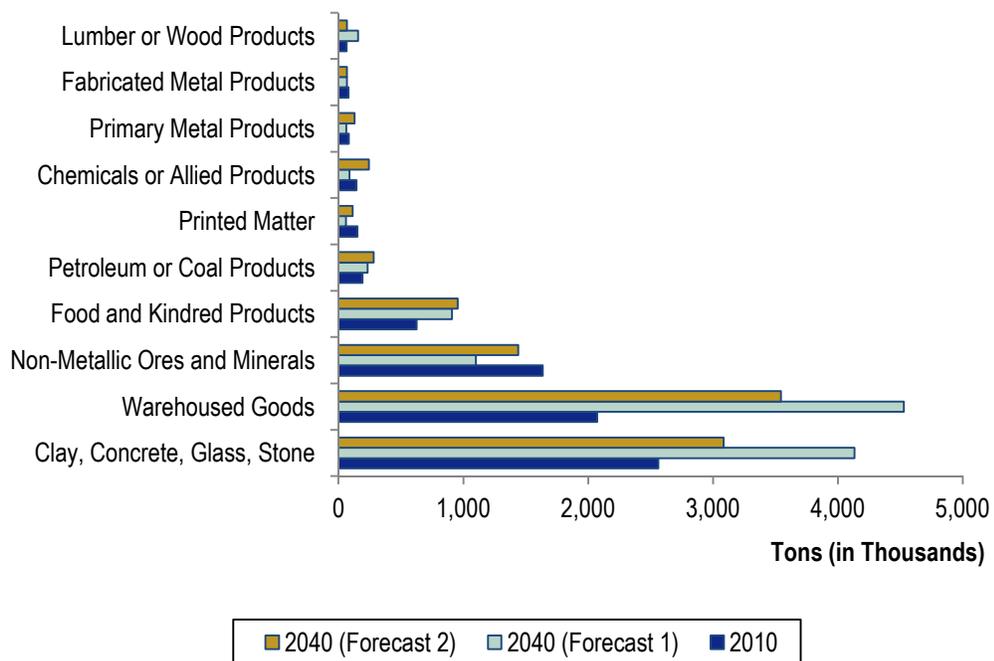
Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.

^a Through rail moves were not included due to the inability to estimate it with the full Surface Transportation Board (STB) Waybill dataset. Therefore, the total through tonnage shown here likely underestimates actual through tonnage due to the lack of through rail data.

Commodity Analysis -Volusia County

In 2010, about 7.8 million tons of freight moved inbound, outbound, and within Volusia County. Nonmetallic minerals, warehouse and distribution goods, and clay, concrete, glass, and stone products, combined account for 6.3 million tons or 81 percent of total inbound, outbound and intracounty tonnage. By 2040, these three commodities account for 10 to 11 million tons or 78 to 85 percent of the 2040 total inbound, outbound and intracounty tonnage. Warehouse and distribution goods are expected to increase 71 to 119 percent to become the top commodity moving into, out of and within Volusia County; clay, concrete, glass and stone products are expected to grow 20 to 61 percent; and, nonmetallic minerals are expected to decrease 12 to 33 percent (see Figure 3.28).

Figure 3.28 Top 10 Commodities by Weight – Volusia County
2010-2040



Note: Sum of inbound, outbound, and intracounty freight

Source: 2010 FDOT Trade and Logistics data, 2009 Full Surface Transportation Board (STB) Waybill data, 2040 Trade and Logistics New Forecast (Forecast 1) processed by Cambridge Systematics, and 2040 FAF3 Based Forecast (Forecast 2) processed by Cambridge Systematics.